Appendix A

Notice of Preparation and Scoping Comments

NOTICE OF PREPARATION

To:	DISTRIBUTION LIST	**From:**	Bay Area Toll Authority
	State of California OPR		101 Eighth Street
	1400 Tenth Street		Oakland, CA 94607-4700
	Sacramento, CA 95814		

Subject: Notice of Preparation of a Draft Environmental Impact Report

The Bay Area Toll Authority (BATA) will be the CEQA Lead Agency. Caltrans will be the NEPA Lead Agency, acting as the delegated agency for the Federal Highway Administration (FHWA). The document prepared will be a combined CEQA/NEPA environmental impact report/environmental assessment (EIR/EA).

For agencies: We need to know the views of your agency regarding the scope and content of the EIR/EA that is germane to your agency's statutory responsibilities in connection with the proposed project. The EIR/EA prepared by our agencies is intended to also be used when considering your permit or other approval for this project, and your participation as a responsible/trustee agency is requested.

For other interested parties and the public: We are interested in your views on the scope and content of the EIR/EA and any alternatives that you think should be considered in the EIR/EA.

Proposed Project: Gateway Park

The creation of a new park is proposed at the east touchdown of the San Francisco-Oakland Bay Bridge (Bay Bridge) in Oakland. The new park would provide bicycle/pedestrian connection to the new East Span of the Bay Bridge and to other trails. The new park would provide access to the Bay. The new park would include recreation opportunities and features to showcase the natural, maritime, industrial, and transportation history of the East Bay. Its working title is Gateway Park.

A more detailed project description, location map, and the potential environmental effects are contained in the attached materials. An Initial Study was not prepared because BATA decided to prepare an EIR.

Public Scoping Meeting:

A public scoping meeting will be held to solicit comments and input on the scope and content of the EIR/EA.

November 14, 2013, 3:30-7:30 p.m.
West Oakland Senior Center, 1724 Adeline Street, Oakland, CA 94607

Submit Comments:

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice. Written comments are to be received by Friday, December 6, 2013 and sent to:

Peter Lee, Project Manager
Bay Area Toll Authority, 101 Eighth Street, Oakland, CA 94607 (plee@mtc.ca.gov)

As part of your response, please provide the following information:
1. Indicate "Gateway Park Scoping Comments" in the subject line of the email or mail correspondence.
2. The agency (or organization) contact person's name, title, address, phone number, and email to which future correspondence regarding this project should be directed.
3. To the extent possible, the types of permits or approvals which may be required to implement the proposed project, including applicable code sections and discussion of typical requirements.

Signature: _____ Date: 10/30/13
Name/Title: Steve Heminger Executive Director Phone: 510-817-5700

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Gateway Park

Introduction

The creation of a new park is proposed at the east touchdown of the San Francisco Oakland Bay Bridge (Bay Bridge) in Oakland, California (Figure 1). The idea for a new park at this location was conceived in the 1990s during the planning for: 1) Replacement of the new East Span of the Bay Bridge, 2) Reuse of the Oakland Army Base, and 3) Demolition and Reconstruction of I-880 (Cypress/Interstate 880 freeway project).

A new park at this location provides a gateway to both the new East Span of the Bay Bridge and the City of Oakland. The linear park includes approximately 170 acres, from the waterfront near the touchdown of the new East Span to Mandela Parkway (Figure 2). Its working title is Gateway Park.

The park would provide safe access to the new bicycle/pedestrian path on the new East Span of the Bay Bridge. It also would provide access to existing and planned segments of the regional San Francisco Bay Trail.

The park would provide access to the shoreline and would be a unique waterfront amenity. The park would include active and passive recreation opportunities. It would include a venue for community events and art displays. It would showcase the natural, maritime, industrial, and transportation history of the East Bay area.

The new park is proposed by the Gateway Park Working Group (nine local, regional and state agencies): Bay Area Toll Authority (BATA), California Department of Transportation District 4 (Caltrans), San Francisco Bay Conservation and Development Commission (BCDC), California Transportation Commission (CTC), East Bay Regional Park District (EBRPD), City of Oakland, Port of Oakland, East Bay Municipal Utility District (EBMUD), and Association of Bay Area Governments' (ABAG's) Bay Trail Project.

At this time, it is envisioned the park would be a regional park operated by the EBRPD or a Joint Powers Authority. Specific amenities within the Park may be operated by a philanthropic organization and/or private concessionaires. A name has not been determined for the new park, but names that have been considered include Gateway Park and The Key.

Project Purpose, Need and Objectives

Project Purpose

The primary purpose of the proposed project is to provide a distinctive entryway park to the East Bay that connects to the new bicycle/pedestrian path on the new East Span of the Bay Bridge.

The project purpose also is to provide safe multimodal access to the shoreline and to provide passive and active recreation opportunities. The project purpose also includes providing interpretive features for natural resources and transportation history, and a venue for community events and art installations. It will be designed to meet mitigation commitments for a number of transportation projects including the new East Span of the Bay Bridge. Project objectives are described below.

Project Objectives

Transportation and Shoreline Access Objectives

- Provide public shoreline access connecting to West Oakland, the City of Oakland, the East Bay and the growing urban population at large.
- Facilitate multi-modal connections to the shoreline and regional park (bicycle, pedestrian, transit, auto and water craft).
- Provide improved staging and access to the new bicycle and pedestrian path on the new East Span of the Bay Bridge.
- Provide links to existing and planned segments of the San Francisco Bay Trail. When complete, the linear Bay Trail will be a continuous 500-mile bicycle/pedestrian trail encircling the entire Bay Area.
- Provide staging and access to the planned San Francisco Bay Area Water Trail. The Water Trail program is an ongoing effort to create a network of launch and landing sites for human-powered water craft throughout the Bay Area. The Water Trail is non-linear and on the water without specific routes.

Regional Park and Recreation Objectives

- Create a distinctive entryway park that reflects the people, history and culture of the East Bay.
- Provide a destination for residents and visitors to view and access San Francisco Bay and the new East Span of the Bay Bridge, as well as view the Port of Oakland operations.
- Provide active and passive recreation opportunities including walking, nature appreciation, interpretation of transportation history, bicycling, fishing, and non-motorized boating.
- Provide opportunities for the interpretation of San Francisco Bay natural resources, transportation history, and the history of the Port of Oakland.
- Provide a venue for community, regional, and national events.
- Provide a venue for installations by artists.
- Provide a learning environment for students to experience San Francisco Bay natural resources and transportation history.
- Provide a long-term sustainable regional park including revenue generation opportunities for funding park operations and maintenance.
- Provide the required mitigation for other transportation projects.

Project Needs

The project is needed because there is a lack of multimodal transportation and shoreline access in West Oakland and the East Bay. The project is needed to fulfill long-standing planning commitments to build a park and improve safe access to the shore in the East Bay. The project is needed to create a safe landing for bicycles and pedestrians using the new East Span of the Bay Bridge. The project is needed because there is a lack of parks and recreation opportunities in West Oakland. Further, there is a lack of public venues for large events and public art displays in West Oakland and the East Bay. These needs are described further below.

Transportation and Shoreline Access Needs

- Lack of multi-modal shoreline access to San Francisco Bay for West Oakland and the East Bay in general: While there are multiple opportunities to access the Bay shoreline, many of these are difficult to access without a motorized vehicle and/or do not have direct safe pedestrian and bicycle access.

- Opportunity to enhance bicycle and pedestrian recreational experience and connections associated with the new path on the East Span of the Bay Bridge: The recreational experience of using the new path can be substantially enhanced by providing connections to the San Francisco Bay Trail heading southward and a safe access eastward to West Oakland. The experience can be enhanced by providing park amenities that allow the user to appreciate the natural, cultural and transportation history and resources of this part of San Francisco Bay.

Regional Park and Recreation Needs

- Lack of shoreline access, urban parks and recreational opportunities for underserved West Oakland: The park provides the opportunity for a direct, safe access route from West Oakland to the Bay shoreline that does not presently exist. Recreational opportunities, such as shoreline trails, are not available in this part of Oakland.

- Increasing demand for urban parks and recreational opportunities associated with the East Bay urban population in general: While the East Bay has existing parks along the shoreline and the East Bay hills, the demand for recreation continues to increase with a growing population. This site provides an opportunity close to urban centers of population.

- Lack of public venues for large-scale open air events near the shoreline in the East Bay: There are limited locations in the East Bay suitable for large-scale open air events. This site provides an additional opportunity in Oakland.

- Lack of public venues for public art display in the East Bay: There is a vibrant artist's community in Oakland and the East Bay. This site provides an opportunity to publically display art.

- San Francisco Bay transportation history and Port of Oakland history preservation and interpretation: The site contains remaining elements of the historic Key Route railway system, including: 1) the Interurban Electric Railway Bridge Yard Shop building (called IERBYS, which is the building at the Bridge Yard) and 2) the Bay Bridge Oakland Substation just south of the Bay Bridge Toll Plaza. In addition, the site is adjacent to the Port of Oakland, a key part of the historic and current economy of the Bay.

- Maintenance of Critical Regional Infrastructure: The park would be designed to provide access for maintenance of critical infrastructure, including the Bay Bridge and the East Bay Municipal Utility District wastewater line.

- Limited funding opportunities for regional park operations and maintenance: East Bay Regional Park District, like many public park districts, has limited funding options by which to operate and maintain regional parks. To expand the recreational and other opportunities that can be provided at this park, sustainable funding sources must be secured. The site provides the opportunity for public events, active recreation, and other features that may be able to generate new sources of revenue for operations and maintenance.

Prior Planning, Commitments and Agreements

- San Francisco Bay Conservation and Development Commission (BCDC) permit conditions for the new East Span of the Bay Bridge: These permit conditions require the provision of shoreline access with

viewing areas and some parking. The new East Span of the Bay Bridge permit conditions incorporated the prior mitigation for Bay access from the Cypress/Interstate 880 freeway project.

- East Span Cooperative Planning: As described above, cooperative planning during the design of the new East Span of the Bay Bridge resulted in the inclusion of the bicycle path and landing area as part of the bridge project. It also provided the opportunity to expand beyond these requirements to provide a larger regional park to fulfill multiple recreational, transportation, and other community needs.

- Oakland Base Reuse Authority (OBRA) Final Reuse Plan: The final Reuse Plan calls for transfer of a portion of former Army land to the East Bay Regional Park District for public benefit after remediation for hazardous waste contamination.

- San Francisco Bay Plan (BCDC) Bay Plan: The BCDC Bay Plan calls for the creation of a new park at the touchdown of the new East Span of the Bay Bridge. Park uses are to include pedestrian and bicycle access, viewing, picnicking, and non-motorized boat access. Park features are to include interpretation of current and historic transportation infrastructure, interpretation of natural and cultural factors, and protection of nearby habitats.

- San Francisco Bay Trail Planning: The Association of Bay Area Governments (ABAG) is planning for the expansion and linkages to the San Francisco Bay Trail. The new park site is a key nexus of linking north-south elements of the Bay Trail in Emeryville and Oakland, as well as to the Bay Bridge itself. (Bay Trail plans include completing a segment along the rest of the Bay Bridge, so the trail is continuous between Oakland and San Francisco.) In addition, the new park site can provide a critical launching area to further develop the San Francisco Bay Water Trail along the East Bay shoreline.

- Bay Bridge Section 106 Memorandum of Agreement (MOA): In 2000, a MOA was signed by the following agencies to memorialize the agreed-upon mitigation for the loss of the historic East Span of the Bay Bridge: Federal Highway Administration (FHWA), the California State Historic Preservation Officer (SHPO), the United States Coast Guard (USCG), the Advisory Council on Historic Preservation (ACHP), and Caltrans. In accordance with MOA stipulation III.B.1, Caltrans will consult with the East Bay Regional Park District (EBRPD) or other owner of the proposed new park about their interest in having interpretive exhibits incorporated into the design of the new park. The exhibits would describe the Bay Bridge as it was originally constructed. The exhibits may include, but are not limited to, plaques or markers, salvaged components of the bridge (or associated facilities), a mural or other depiction of the bridge.

Project Description

The creation of a new, distinctive park is proposed at the eastern touchdown of the Bay Bridge in Oakland, California. As described above, the park would provide safe access to the new bicycle/pedestrian connection on the new East Span of the Bay Bridge. It would also provide access to existing and planned segments of the San Francisco Bay Trail. It would also provide access to the shoreline and would provide a unique waterfront amenity. The park would include active and passive recreation opportunities. It would include a venue for community events and art displays. It would showcase the natural, maritime, industrial, and transportation history of the East Bay.

The new park is comprised of approximately 170 acres. The linear park would extend from the waterfront near the touchdown of the new East Span of the Bay Bridge to Mandela Parkway in West Oakland. The park would extend under Interstate 880 (I-880) and the I-80/I-880/I-580 freeway maze (**Figures 1 and 2**).

The new park site plan is subdivided into the following six areas (**Figure 3**).

- The Link
- Bridge Yard
- Port Playground
- Key Point + The Pier
- Radio Beach
- Windbreak

The following summarizes the project features within each area. All project features are planned for construction 2016-2021, except the new auditorium by the building at the Bridge Yard would be constructed later. The project would be implemented in multiple phases, depending on availability of funding and right-of-way.

The Link

The Link provides access to the core area of the new park with a new bicycle/pedestrian path extending from Mandela Parkway in West Oakland. This location at Mandela Parkway is the confluence of three major bicycle routes within Oakland and a connection to the San Francisco Bay Trail. There would also be a connection to the bicycle/pedestrian path from Emeryville.

As part of a separate project, there will be a realigned vehicular entry road (Burma Road) from Maritime Street to the Caltrans maintenance facility and the project area.

Project features include:

- A new bicycle/pedestrian path along West Grand Avenue extending from Mandela Parkway, across roadways and railways, and through the Oakland Army Base Reuse Area. This bicycle/pedestrian path may be analyzed in the EIR or in a separate environmental document.
- Way-finding elements to help guide users to the park may be located along the new elevated bicycle/pedestrian path and along the realigned Burma Road. Elements may include old Bay Bridge artifacts.
- A new bicycle/pedestrian path connection on Mandela Parkway – possibly extending over West Grand Avenue for Mandela Parkway users. The existing at-grade open space connection would be retained.
- A connection to the recently completed at-grade bicycle/pedestrian path from Emeryville and to the realigned Burma Road.
- Overflow parking for 300 cars located in the proximity of the I-80/I-880/I-580 freeway structures.

Bridge Yard

The Bridge Yard is a destination recreation and event center. It provides a flexible space for a variety of park activities and programs while reusing existing site elements. It includes an arrival area, parking, event space, and recreation uses. Events at the Bridge Yard could include art displays, movies, concerts, corporate carnivals, and parties.

As part of a separate Caltrans project, the building at the Bridge Yard, formerly known as the "Interurban Electric Railway Bridge Yard Shop" (IERBYS) or the "Sawtooth Building," would be renovated to California Building Standards Code (California Code of Regulations, Title 24). The proposed project could include use of the renovated building at the Bridge Yard (24,000 square feet).

Project features include:

- Arrival plaza for bicycles, cars, buses and transit.
- Parking with approximately 310 spaces.
- Display area for historic trains.

- Outdoor Yard event space for small gatherings to large events. Small gatherings could include art displays in the meadow and informal performances for approximately 200 people. Large events could include movies in the meadow for 500-1,000 people and concerts for 1,000-1,700 people.
- Minor internal improvements to the renovated building at the Bridge Yard.

At a later date, the project could also include:

- New indoor/outdoor auditorium, which will be embedded into the landscape, for approximately 100-200 people, located adjacent to the building at the Bridge Yard. This building may be used for events or training purposes.

Port Playground

The Port Playground is a destination for active and passive recreation along the shoreline. It includes a new visitor center; play areas for children, teenagers, and adults; kayak launch and storage; a beach; and a boardwalk with picnic and observation areas.

Project features include:

- New visitor center that would include restrooms and information on park facilities and exhibits. It would integrate bike storage, kayak storage, and climbing wall.
- Fitness and children's playground and possibly an area to serve as an extreme sports playground, such as street style parks for skateboards and bikes.
- Sandy beach and kayak launch.
- Boardwalk with observation and picnic areas.
- View ride(s), such as elevated zip line, ropes course, or other.
- Parking for 100 cars and 2 buses, with water viewing area from parked cars.
- Provisions for a temporary food area, such as food trucks and carts.
- Shoreline protection through a combination of natural and gently graded slope, riprap and walls to provide for habitat enhancement and protection of critical facilities.

Key Point + The Pier

The Key Point would be the landing for bicycle and pedestrian traffic from the Bay Bridge. It is located at the west end of the park and is a passive recreation area emphasizing nature with features such as tide pools, lawns, restoration planting, and outdoor classroom. These features would have an industrial theme with circular elements. Key Point would also acknowledge the transportation history of the Bay, including the Key System electric trains and the Bay Bridge. The Key System or Key Route was a privately-owned company that provided mass transit in the East Bay from 1903 until 1958. In 1939, Key System trains were extended across the lower deck of the Bay Bridge to San Francisco.

The Pier would be a 300-foot long or longer structure extending west into the Bay along the alignment of the old Bay Bridge. It would provide an area for visitors to fish and view the Bay, and it would include a fish-cleaning station. The Pier could be either: 1) a multi-span concrete trestle supported by old Bay Bridge piers and new piles and foundations, or 2) a re-purposed span or spans of the old Bay Bridge supported by existing foundations, with removal of the existing top and lower decks and construction of a new ADA-compliant deck.

Project features include:

- Renovation of three existing structures. A warming hut for coffee and snacks would be in a historic building. An artist studio, small exhibit gallery, and ranger station would be in the other two buildings.
- Creation of tide pools that replicate similar pools that currently exist in the shoreline area. It would require fill in the Bay.
- Pier extending 300 feet into the Bay along the old Bay Bridge alignment for viewing and fishing.
- Levee trail and elevated path to connect to the Port Playground area to the bicycle/pedestrian path on the Bay Bridge. The levee path would also extend beneath the Bay Bridge to Radio Beach.

Radio Beach

Radio Beach is a restoration and preservation area with limited recreation use, such as interpretive walking trails and sandy beaches, with fencing to protect wildlife. Radio Beach is the only area of the proposed park located on the north side of I-80. It would be connected to the rest of the park with a trail extending under the Bay Bridge.

Project features include:

- Levee trail extending from Key Point under the Bay Bridge to the easterly end of Radio Beach to provide long-term protection against sea level rise and access. It would require fill in the Bay, immediately adjacent to the East Span.
- Restoration planting and habitat enhancement.
- Ecological interpretation signage along the levee trail and beaches. Additionally signing in the mudflat areas to discourage water sports participants from encroaching onto sensitive habitats.
- Fencing to protect wildlife and the environmentally-sensitive existing tidal marsh area.

The new levee trail would be restricted to bicycle and pedestrian use only, and animals and pets would not be allowed. The levee trail would include a 15- to 20-foot buffer from the freeway. Construction methodology would be a sheet pile wall, rip rap or a gently sloped shoreline. Design considerations include the ability to adapt to sea level rise and minimizing fill in the Bay and potential impacts on habitats including the eel grass colony to the north. Depending on the design, the total fill area will be approximately 2 to 10 acres.

The existing vehicular access roads and informal parking areas would not be modified by the project.

Windbreak

Windbreak represents the vegetated buffers that would be installed between I-80 and the core park area. It also represents vegetation that would be planted throughout the park to block and diffuse vehicular air emissions. Vegetated buffers would include evergreen trees that would grow up to 40-60 feet tall, trees with rapid leaf regeneration, and understory plantings. Landscape systems throughout the park would be designed collaboratively with biologists and landscape architects. Landscape systems would include native species intended to function at their highest ecological value.

Potential Environmental Effects

BATA and Caltrans are seeking input from agencies, stakeholders, and the public on the scope and content of the EIR/EA. The project team has preliminarily identified that the proposed project may result in potential environmental impacts for the following issue areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions/Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Recreation
- Transportation/Traffic
- Utilities and Service Systems

Probable Permits and Approvals Required

The proposed project may require permits and/or approvals and/or may obtain funding from the following federal, state and local agencies, and/or private entities:

- Federal Highway Administration (FHWA)
- U.S. Army Corps of Engineers (USACE)
- U.S. Fish and Wildlife Service (USFWS)
- U.S. Coast Guard
- National Marine Fisheries Service (NMFS)
- California Department of Fish and Wildlife (CDFW)
- California Department of Transportation (Caltrans)
- California Office of Historic Preservation (SHPO)
- San Francisco Bay Conservation and Development Commission (BCDC)
- San Francisco Regional Water Quality Control Board (SFRWQCB)
- East Bay Municipal Utility District (EBMUD)
- East Bay Regional Park District (EBRPD)
- City of Oakland
- Port of Oakland
- Burlington Northern & Santa Fe Railroad (BNSF)
- Union Pacific Railroad (UPRR)
- Association of Bay Area Governments (for Bay Trail)
- California Department of Toxic Substances Control (DTSC) – potential hazardous materials cleanup oversight

Potential Project Alternatives

The project team has not yet selected or developed formal alternatives for analysis in the EIR/EA. The project team will identify alternatives for analysis in the EIR/EA after consideration of agency, stakeholder, and public input during the scoping process. Alternatives to be considered in the EIR/EA need to be feasible. Alternatives must meet the project's purpose and need and most of the project objectives. Alternatives need to be able to reduce one or more of the environmental impacts of the proposed project. In addition to alternatives that may be suggested in scoping, below is a list of potential alternatives or design considerations.

- No Project
  - Analysis of this alternative is required
- Southside Park Only
  - No improvements to the area north of I-80 (Radio Beach)
- Sea Level Rise Accommodation
  - Minimize new shoreline protection
  - Allow sea level rise to intrude portions of site over time
- Minimize Bay Fill
  - Reduce amount of new fill by minimizing or avoiding new structural fill
  - May eliminate or require redesign of new piers and trail to the north side
- Passive Park/Minimal Park Only
  - Only include passive recreational activities in addition to bicycle use
  - Exclude active recreation other than bicycle and pedestrian trails
- Bicycle Trail Alignments
  - Alternative trail alignments to those proposed

Project Location

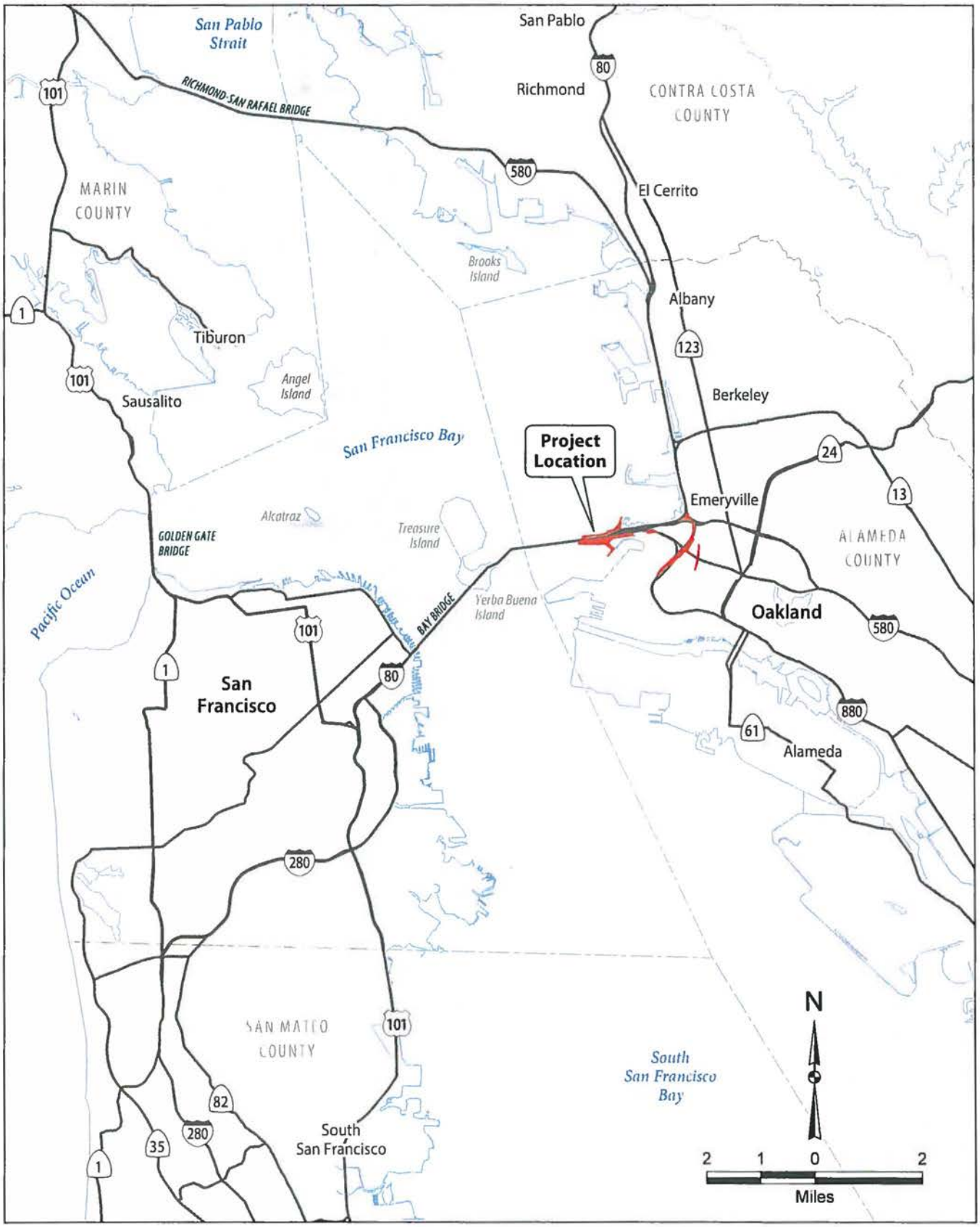


Figure 1

Project Area



N

0.25 0 0.25
Mile

Note: No proposed alterations to highways or railways.

Project Area
Fencing only

Figure 2

Park Areas

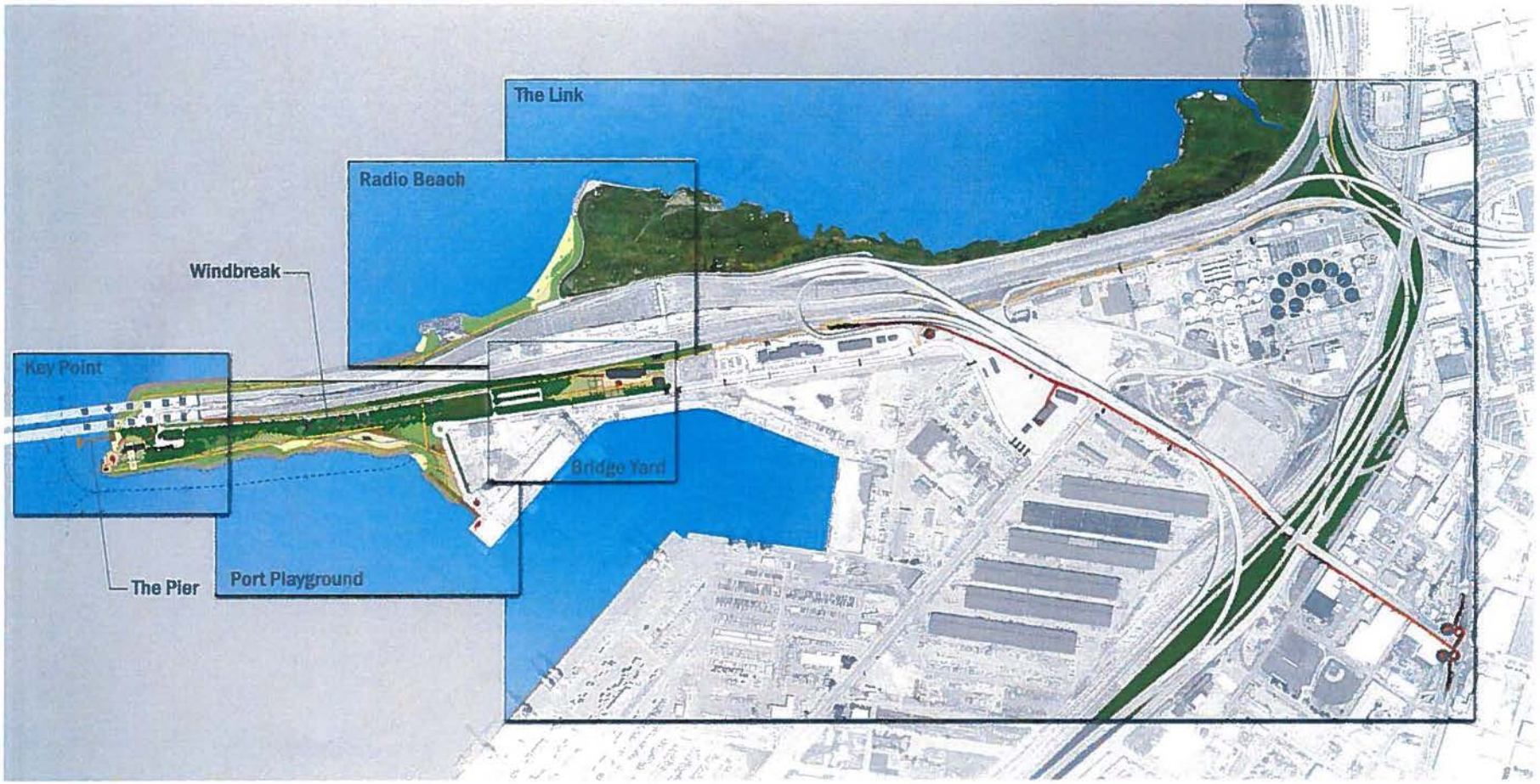


Figure 3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

DEC 0 4 2013

Zachary Gifford
California Department of Transportation, District 4
111 Grand Avenue,
Oakland, CA 94612

Subject: Scoping Comments for the Proposed Gateway Park Project Draft Environmental Impact Review/Environmental Assessment

Dear Mr. Gifford:

The United States Environmental Protection Agency (EPA) has reviewed the Notice of Preparation (NOP) published October 30, 2013, requesting comments on the scope and content of Draft Environmental Impact Report/Environmental Assessment (DEIR/EA) to be prepared by the Bay Area Toll Authority (BATA) and Caltrans for the proposed Gateway Park project at the touchdown point of the San Francisco-Oakland Bay Bridge on the shores of Oakland. Our attached scoping comments are provided pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508) and Section 309 of the Clean Air Act.

EPA appreciates the opportunity to provide scoping comments on livability/sustainability projects that can play a part in improving the quality of life for communities like West Oakland and we look forward to reviewing the Draft EIR/EA and environmental analysis that follows. If you have any questions, please feel free to contact Zac Appleton, the lead EPA reviewer for this project. Zac can be reached at Appleton.Zac@epa.gov or (415) 972-3321.

Sincerely,

Connell Dunning, Transportation Team Supervisor
Environmental Review Office

Enclosures: EPA's Scoping Comments

cc: Peter Lee, BATA
Karin Betts, BATA

EPA SCOPING COMMENTS FOR THE GATEWAY PARK DRAFT ENVIRONMENTAL ASSESSMENT, DECEMBER 4, 2013

Air Quality

The proposed Gateway Park may place large numbers of recreational users of all ages for long spans of time in proximity to a major source of automobile emissions in the Bay Area. The NOP describes active and passive recreational uses that may mean longer exposure times than active travel typical for a bicycle trail.

EPA continues to research the efficacy of vegetative and constructed barriers near roadside to protect human health from vehicle emissions. EPA commends the proposed project's "Windbreak" mitigation of evergreen and understory vegetation along the southern length of I-80, and offers the following recommendations to strengthen the EA.

Recommendations:

EPA recommends the Draft EA include a discussion of prevailing winds and describe commitments to periodically assess the vegetative barrier's effectiveness in protecting Gateway Park users from vehicle emissions. In particular, EPA is concerned about potential negative near-roadway health impacts given high vehicle congestion near the Bay Bridge toll plaza.

EPA further recommends the Draft EA include commitments for similar barriers along the northern length of I-80 to protect future park users in the "Radio Beach" and "The Link" elements. If such barriers are not warranted for these northern areas, please justify the reasons in the Draft EA.

EPA further recommends that the project proponent consider installing improved particulate air filters for HVAC equipment at the three proposed renovated buildings to house the warming hut, art studio, exhibit hall, and ranger station.

Local Traffic Circulation

The proposed Park intends to offer safe multimodal shoreline access along West Grand Avenue from Mandela Parkway to Burma Road, with as many as 710 additional passenger vehicles driving to the new Park at any given time. Since the local area includes highway access roads, heavy rail, freight vehicles, and an incomplete bicycle network at West Grand Avenue, the proposed change to local traffic circulation may be significant and should be properly studied to prevent shared road user conflicts and congestion that could undermine the intended purpose and need of the project.

Recommendations:

EPA recommends that the project proponent commit to a Park access design that will prevent conflicts between different modal road users. We recommend completing a traffic analysis that can identify potential modal conflicts and help inform any mitigation to reduce local road congestion connected to the proposed project.

EPA recommends the Draft EA include a demand forecast to ensure the proposed project's vehicle parking needs are being optimized.

Climate Change Adaptation

EPA commends the NOP for identifying a commitment to include a climate change adaptation discussion for the "Radio Beach" component and to include a managed retreat Project Alternative.

Recommendation:
EPA recommends the Draft EA include a climate change adaptation discussion for the entire proposed Gateway Park, not just the proposed northern "Radio Beach" segment.

Hazardous Materials

EPA notes the proposed project may be constructed on land parcels at or near the retired Oakland Army Base, and may use old Bay Bridge artifacts or components in aesthetic pieces in the proposed Park.

Recommendation:
EPA recommends the Draft EA include a discussion of hazardous materials surveying, testing, and remediation for the proposed project, including lead testing and abatement for old Bay Bridge artifacts.

Environmental Justice

The proposed Gateway Park is intended to improve safe multimodal shoreline access, urban park and recreational opportunities for underserved communities in West Oakland and the East Bay. The proposed project may also include a fishing pier.

Recommendations:
EPA recommends that the Gateway Park project proponents reach out to environmental justice communities in West Oakland and beyond to ensure their concerns are included in the project planning.

EPA also recommends that appropriate fish consumption health warnings are posted in all proposed fishing areas of Gateway Park in the languages that are read in the Bay Area.

Water Impacts

The proposed Gateway Park project may fill parts of the Bay, and could negatively impact fish habitat.

Recommendation:
EPA recommends the project lead continue to coordinate with the San Francisco Bay Conservation and Development Commission (BCDC), California Department of Fish and Wildlife (CDFW), and the United States Fish and Wildlife Service (USFWS) for impact and mitigation for Bay fill, and for fish habitat.

From: "Van dyke, Andrew L (Andy) CIV USARMY HQDA ACSIM (US)"

andrew.l.vandyke.civ@mail.mil

Date: December 6, 2013 at 12:48:49 PM PST

To: "Peter Lee" PLee@mtc.ca.gov

Cc: "Kate Giberson" Kate.Giberson@icfi.com

Subject: RE: Notice of Preparation for the Gateway Park project in Oakland, CA

(UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Mr. Lee,

Federal statute requires the United States to retain a right of access over property it transfers in order to return and conduct any environmental cleanup that may be necessary. Army does not anticipate the need to return. However, the state has raised concerns regarding contaminants in the sediment offshore of the parcels identified in the Notice as "Port Playground" and Key Point." Army does not foresee a need to take any future action with respect to these sediments, but is nonetheless required to retain the easement in the event Army finds that any such action is necessary.

Regards,
Andy

Andrew Van Dyke
OACSIM-ODB
O: 703-545-2452
C: 301-520-9263
andrew.l.vandyke.civ@mail.mil

PORT OF OAKLAND

December 6, 2013

Mr. Peter Lee, Project Manager
Bay Area Toll Authority (BATA)
101 Eighth Street
Oakland, CA 94607

Via e-mail to plee@mtc.ca.gov

Subject: Gateway Park Scoping Comments

Dear Mr. Lee,

The Port of Oakland (Port) appreciates the opportunity to comment on the scope of the Environmental Impact Report/Environmental Assessment (EIR/EA) for the Gateway Park Project (Project). BATA issued a Notice of Preparation (NOP) on October 30, 2013, with responses and comments due by December 6, 2013. According to the NOP project description, BATA proposes to create a new park at the east touchdown of the San Francisco-Oakland Bay Bridge (Bay Bridge) in Oakland. The new park would enhance bicycle/pedestrian connections to the new East Span of the Bay Bridge and to other trails, as well as provide access to the Bay. The new park would include recreation opportunities and features to showcase the natural, maritime, industrial, and transportation history of the East Bay.

Seaport activities create a bustling industrial environment that includes traffic, light, glare, noise, vibrations, and water traffic in the Estuary and Bay, and which features a unique aesthetic and air quality profile. The industrial setting can be part of the attraction of Gateway Park for visitors, just as Middle Harbor Shoreline Park attracts the public as a viewing area for shipping activities.

The Port submits the following specific comments for your consideration:

Land Ownership and Responsible Agency Some of the Project area identified in the NOP project description is owned by the Port. Furthermore, most of the Project area is located within the Port's planning jurisdiction, including parcels owned by others. The Port is the agency that will issue development permits for improvements on the property under its planning jurisdiction. Therefore, the Port should be identified as a responsible agency under the California Environmental Quality Act (CEQA) in the EIR portion of the EIR/EA. The Board of Port Commissioners, on behalf of the Port as a responsible agency, will be required to independently evaluate the EIR, consider the environmental effects of the Project as shown in the EIR, make findings for each

significant environmental effect identified in the EIR, and adopt mitigation measures[1]. See the *2012 Oakland Army Base Project Initial Study/Addendum (May 2012)* and the adopted Standard Conditions of Approval/Mitigation Monitoring and Reporting Program for the types of environmental issues analyzed on other portions of the former Oakland Army Base and for the mitigations adopted by the City of Oakland (lead agency) and the Port of Oakland (responsible agency).

Project Description While Radio Beach, north of the Bay Bridge Toll Plaza, is a restoration and preservation area with limited recreation use, as described in the NOP, it is also the site of three Port lease areas for radio towers. Continued use of those towers for communications purposes, along with limited access for periodic maintenance, should be preserved in the Gateway Park project description and considered in the discussion of environmental impacts.

Land Use and Traffic The Project will provide passive and active public recreation opportunities along the San Francisco shoreline and in the Bay. These uses will be adjacent to the Port of Oakland, which is the fifth largest container shipping port in the United States and a major gateway for international cargo. Ships travel across San Francisco Bay and along the Estuary to dock at terminals with the assistance of tugs 24 hours a day, 7 days a week. Trucks deliver and retrieve cargo containers, travelling along Maritime Street, Burma Road, West Grand Avenue, Frontage Road and other streets in the Port area to reach the freeways and rail yards in the Port area.

The EIR/EA should analyze the compatibility of existing and proposed land uses, specifically the separation of recreational and industrial uses to ensure the safety of drivers, pedestrians, bicyclists, kayakers and other park users. A particular concern for the Port's Maritime Division is the proposed location of the kayak launching area and the proposed water route indicated on exhibits. The launching area is directly adjacent to the main ship channel, which could provide an extremely unsafe situation for kayakers due to vessel and tugboat interactions. The proposed water route runs directly through the main ship channel, so it should be relocated on the exhibit, with a notation indicating the main ship channel location. The description of Gateway Park operations should also address safety and security issues.

It is anticipated that the Project will coordinate closely with the planned pedestrian and bicycle access in other areas of the former Oakland Army Base, including the proposed Class I bicycle path on the east side of Maritime Street[2]. Potential vehicular and bicycle conflicts with seaport truck traffic on access routes to Gateway Park should be analyzed.

Biological Resources The Port-owned Radio Beach area features sparsely vegetated shoreline, riprap, and a small section of beach with mudflats at low tide that is up to 900 feet across. Radio Beach may support listed species since habitats

[1] Title 14, California Code of Regulations §15096 and §15091. The Port's Executive Director may make findings for property not owned by the Port.
[2] 2012 Oakland Army Base Project, Initial Study/Addendum, Figures 2-5b and 2-5c, May 2012.

suitable for California clapper rail, salt marsh harvest mouse, and other species can be found on the site. The impact of the Gateway Park trail on these sensitive biological resources is a major environmental concern.

Cumulative Impacts The cumulative impacts analysis should consider development under construction and planned on the adjacent City of Oakland-owned and Port-owned property at the former Oakland Army Base, including, but not limited to, a bulk shipping terminal at Berth 7, a new rail yard, rail spurs to Berth 7, a trade and logistics center with warehousing and freight forwarders, and the relocation of recycling facilities.

Thank you for the opportunity to comment and I hope that these comments are helpful to BATA in refining the scope and content of the EIR. Please contact me at your earliest convenience to discuss our scoping comments. My contact information is:

Anne Whittington
Environmental Assessment Supervisor
Port of Oakland
530 Water Street, Oakland, CA 94607
510-627-1559
awhittington@portoakland.com

Port of Oakland staff look forward to working collaboratively with you throughout the environmental review and entitlement process.

Very truly yours,

Anne M. Whittington
Environmental Assessment Supervisor

cc: Port of Oakland staff (e-mail only)
Richard Sinkoff, Director of Environmental Programs and Planning
Joshua Safran, Deputy Port Attorney
Donnell Choy, Deputy Port Attorney
Jean Banker, Deputy Executive Director/Acting Maritime Director
Chris Peterson, Chief Wharfinger
Mark Erickson, Senior Maritime Projects Administrator
Pamela Kershaw, Director of Commercial Real Estate
Chris Chan, Director of Engineering
Imee Osantowski, Port Principal Engineer



Making San Francisco Bay Better

December 16, 2013

Peter Lee
Bay Area Toll Authority
101 Eighth Street
Oakland, California 94607

SUBJECT: Gateway Park Scoping Comments
Notice of Preparation of a Draft Environmental Impact Report / Environmental Assessment (EIR/EA)

Dear Mr. Lee:

On November 1, 2013, we received a copy of the Notice of Preparation of a Draft Environmental Impact Report/Environmental Assessment for the creation of a new park at the east touchdown of the Bay Bridge in Oakland (Gateway Park). The park would provide access to the shoreline, enhance bicycle and pedestrian connections to the Bay Bridge and local trails, and include a variety of recreational opportunities. The development of a park at this location is strongly supported by the policies of the San Francisco Bay Conservation and Development Commission.

Commission staff reviews such Notices of Preparation on behalf of its Commission to assess, among other things, the project's consistency with the McAteer-Petris Act, the Commission's San Francisco Bay Plan (Bay Plan), the Commission's federally-approved management plan for the San Francisco Bay, and the federal Coastal Zone Management Act.

The McAteer-Petris Act authorizes the placement of fill in the San Francisco Bay only when: (1) there are no upland alternatives available; (2) the water area to be filled is the minimum amount necessary to achieve the purpose of the fill; and (3) the nature, location, and extent of fill minimizes harmful effects to the environment. The environmental analysis should address how these issues have been considered in the project design.

Key policy issues for the Commission in reviewing this project will likely include an evaluation of the project in relation to the Bay Plan policies pertaining to public access, recreation, natural resource protection, climate change, and shoreline protection. A short discussion of some of the relevant policies follows:

> **Public Access and Scenic Views.** A shoreline park is clearly consistent with the requirement of the McAteer-Petris Act that projects within the Commission's jurisdiction provide the maximum feasible public access. Our staff has some initial concerns, however, regarding two aspects of the proposed design: the proposal to repurpose a section of the old east span of the Bay Bridge as a public access pier and the proposal to construct a trail on fill leading to Radio Beach. The Commission's policies allow a minor amount of fill for public access if it is the minimum absolutely necessary. Furthermore, the Bay Plan public access policies require public access to be sited, designed, and managed to prevent significant adverse effects on wildlife and to avoid significant adverse impacts from sea level rise and shoreline flooding.

The trail proposed along the north edge of the eastern Bay Bridge would involve a substantial amount of fill, may attract limited use because of its proximity to thousands of accelerating vehicles, and would terminate at a site with sensitive wildlife resources and that may be susceptible to inundation in the near future. Therefore, we question whether the public benefits from filling for a proposed trail clearly exceed the public detriment from the loss of the water area.

We are also concerned that maintenance of the old Bay Bridge, if repurposed as a public access facility, may prove costly and difficult and may ultimately be unsustainable. Further, retaining a segment the old Bay Bridge would have to include a program and design that creates enough public benefit to justify not removing the bridge segment, which was required to be removed as fill mitigation when the new East Span was approved by the Commission.

Because we recognize that the project is still in the early stages of design, we are open to continuing a discussion about repurposing a section of the old Bay Bridge and incorporating a trail to Radio Beach on the north side of the bridge, but wanted to communicate our early concerns about the consistency of these aspects of the proposal with Commission policy.

The Appearance, Design, and Scenic Views policies of the Bay Plan state that maximum efforts should be made to provide, enhance, or preserve views of the Bay and shoreline, especially from public areas and from the Bay itself. The environmental analysis should evaluate public access design alternatives that would preserve Bay views, and that may reduce or avoid adverse impacts from sea level rise and human/wildlife interactions.

Recreation. The project site is designated in the Bay Plan maps as a waterfront park priority use area. The Bay Plan Recreation policies state that sites within designated waterfront parks that provide optimal conditions for water-oriented recreational uses should, where appropriate, be enhanced for those uses. The environmental analysis should evaluate the compatibility of the proposed water-oriented uses with shipping zones, navigation channels, and protected areas. Facilities such as launch ramps, beaches, and fishing piers should be barrier-free and accommodate a broad range of water-oriented recreational activities for people of all races, cultures, ages, and income levels. Access to recreational facilities should be easily available from nearby parking reserved for the public. Bus stops, kiosks and other facilities to accommodate public transit should be provided in waterfront parks to the maximum extent feasible. Sandy beaches should be preserved, enhanced, or restored for recreational use consistent with wildlife protection.

Natural Resources. The Bay Plan policies on Fish, Other Aquatic Organisms, and Wildlife, Water Quality, and Mitigation require adverse impacts to Bay natural resources to be avoided, and if impacts cannot feasibly be avoided, impacts should be minimized to the greatest extent possible and mitigated. Projects should be designed to avoid adverse environmental impacts to water surface area, volume, circulation, and quality and to fish, other aquatic organisms, wildlife habitat, subtidal areas, tidal marshes, and tidal flats. Subtidal areas that are scarce (e.g., eelgrass beds) or have an abundance and diversity of species should be conserved.

The environmental analysis should consider how any imported fill would be transported, distributed, stored, and used as part of this project, including potential environmental impacts from trucking and offloading, construction, and the potential impacts of any placed fill on the shoreline and Bay. Possible effects of any proposed new fill on the introduction or spread of invasive species, tidal hydrology, sediment movement, and the Bay's bathymetry should also be evaluated.

Climate Change and Shoreline Protection. The Bay Plan Climate Change policies require that larger projects be designed to be resilient to projections of mid-century sea level rise with an adaptive management plan for addressing long-term impacts beyond mid-century. The Commission will likely require a risk assessment prepared by a qualified engineer based on the estimated 100-year flood elevation that takes into account estimates of mid- and end-of-century sea level rise projection. The risk assessment should analyze how the park areas, including proposed structures, amenities, and habitats, are expected to be impacted, and how they will transition and evolve with rising sea levels. Areas subject to inundation should be designed to tolerate periodic flooding, or employ other effecting means of addressing the impacts of future sea level rise and storm activity.

The Bay Plan Shoreline Protection policies favor nonstructural methods for shoreline protection such as provisions for establishing marsh and transitional upland vegetation where feasible and appropriate. Shoreline protective structures should be appropriate for the project site, the uses to be protected, and engineered to provide erosion control and flood protection taking future sea level rise into account.

Draft minutes from the Commission's Design Review Board's first review of this project are enclosed for your reference. We look forward to our continued participation in this project as a member of the Gateway Park Working Group. Please feel free to contact me at any time at 415-352-3668 or elliek@bcdc.ca.gov.

Sincerely,

ELLIE KNECHT
Coastal Program Analyst

EK/ms

Encl.

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION
50 California Street • Suite 2600 • San Francisco, California 94111 • (415) 352-3600 • Fax: (415) 352-3606 • www.bcdc.ca.gov

November 19, 2013

TO: Design Review Board Members

FROM: Lawrence J. Goldzband, Executive Director (415/352-3653; lgoldzband@bcdc.ca.gov)
Ellen Miramontes, Bay Design Analyst (415/352-3643; ellenm@bcdc.ca.gov)

SUBJECT: Draft Minutes of October 7, 2013 BCDC Design Review Board Meeting

1. **Call to Order and Attendance.** The Design Review Board's Chair, John Kriken, called the meeting to order at approximately 6:30 p.m. Other Design Review Board members in attendance included Cheryl Barton, Ephraim Hirsch, Roger Leventhal, Jacinta McCann and Gary Strang. BCDC staff in attendance included Bob Batha, Ellie Knecht, Brad McCrea, Ellen Miramontes, and Ming Yeung.

2. **Approval of Draft Minutes for August 5, 2013 and September 9, 2013 Meetings.** The Board approved the minutes from both of these meetings with no changes.

3. **Gateway Park, Gateway Park Working Group (First Review).** The Board conducted its first pre-application review of the proposed design for Gateway Park, a new regional park located near the east touchdown of the Bay Bridge in Oakland, Alameda County. This park would encompass 170 acres and include various parcels from the waterfront near the Bay Bridge touchdown to Mandela Parkway in West Oakland. The park would provide access to the shoreline, enhance bicycle and pedestrian connections to the new east span of the Bay Bridge and other local trails, include active and passive recreation opportunities, and highlight the natural, industrial maritime, and transportation history of the area. Public access proposed within the Commission's Bay and 100-foot shoreline band jurisdictions would include a boat launch area, a pier, open space and a variety of trails.

For a transcript of the meeting proceedings, including the BCDC staff introduction, the project presentation, Board questions, public comments, Board discussion and the applicant's response, please see the attached transcription.

a. **Board Summary and Conclusions**

(1) **Physical Access.** The Board expressed concern that the design overemphasizes bicycling as the dominant form of transportation and recreation. Emphasis on bicycles for transportation to and recreation within the park should be balanced with other means of arrival and movement. There was also a desire to better understand how park users will arrive at the park.

(2) **Visual Access.** The Board asked that there be an exploration of "primary views" to and from the park. It was also mentioned that open views should be maintained and that appropriately placed new trees could enhance views of the Bay.

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(3) **Proposed Park Amenities.** The proposed mix of passive and active uses is positive. There should be means to experiment with the park program over time in order for the most desirable uses to prevail in an iterative fashion. One member asked that the park have "one big unifying idea" and others advocated for a "less is more" approach to open space such as found at Crissy Field.

It was also discussed that the uses and development of the park in the "Key Point" area should be lighter and more natural, while heavier programming and development would be more appropriate in the "Bridgeyard" area.

The Board expressed mixed opinions on whether portions of the old East Span should be preserved in place. Some liked the concept of saving a "288" section while others expressed concern as to how it would be maintained and preferred the idea of a new fishing pier.

(4) **Water Access.** The Board requested more information regarding the proposed recreational water access including the kayak launch and beach area. They asked that a cross section of this area be provided.

(5) **Wildlife Compatibility.** Regarding the proposed trail to Radio Beach, there was a general consensus that it would be desired although careful consideration should be given to several aspects: the trail should be the minimum size needed and be moved away from the shoreline; the trail would likely need to be at a higher elevation in order to accommodate predicted sea level rise; and a gently sloping shoreline condition is preferred in this area.

Potential impacts on wildlife from raptors in tall trees or sculptures was raised. More information was requested on how habitat areas would be enhanced. The Board commented that the desired habitats should first be carefully considered and then the park should be designed to be compatible with those habitats.

(6) **Sea Level Rise.** The shoreline edge should be as natural as possible. Walls and riprap should be avoided as the use of hard structures leads to washing out sandy beaches. A gently sloped living shoreline is preferred. It was also mentioned that the proposed elevations may need to be adjusted higher.

4. **Adjournment.** Mr. Kriken adjourned the meeting at approximately 8:35 p.m.

Respectfully submitted,

ELLEN MIRAMONTES
Bay Design Analyst

East Bay Regional Park District

Healthy Parks Healthy People

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December 5, 2013

Mr. Peter Lee
Bay Area Toll Authority
101 Eight Street
Oakland, CA 94607

RE: GATEWAY PARK PUBLIC SCOPING COMMENTS

Dear Mr. Lee

Thank you for the opportunity to comment on Gateway Park. The staff has come up with some very interesting concepts for the proposed Gateway Park. Without limiting my enthusiasm for the project as a whole, I am offering some comments for consideration during the EIR process.

1. Burma Road

Is Burma Road, as shown, adequate to serve the many users of this park? The proposals are for active recreation in the Port Playground and Bridge Yard areas. The many activities which could take place, particularly concerts and other activities attracting large crowds, will also create a lot of traffic. Burma Road must also accommodate truck traffic serving the Oakland Army Base. Will the width of the road be adequate to accommodate sufficient lanes to serve this traffic need?

- Should there be bike and pedestrian lanes on Burma Road? The overhead structure for bikes and pedestrians over Burma Road is an exciting idea but there is a possibility that funding may be inadequate to build it. And if built, many users may be unwilling to use it because of concerns about crime; it is close to a high crime area.

- Parking: since the attractions may draw many drivers to the site, is the parking adequate to serve them? There may be a need for overflow parking for special events. There are large areas under the existing freeway approaches which could accommodate overflow parking. Can these be utilized?

2. Trees

The park should be visible from the Bridge and vice-versa. Visibility from the Bridge creates an attraction to use the park. Visibility of the Bridge from the park is a desirable vista. If numerous trees are planted, a species should be selected that will not grow high enough to block these views. If the tree planting is proposed for attenuating traffic noise for the benefit of park users, that concept should be carefully examined

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by acoustic experts. My impression is that vegetation, including trees, is not, in general, an effective acoustical barrier. That's why Caltrans builds masonry sound walls.

3. Radio Beach

A connection to Radio Beach as shown in the project proposal is an excellent one. It will provide access to splendid views and will allow an opportunity to view wildlife. Some will object on the grounds that there will be too much disturbance of wildlife, but I think it is important for people, especially children, to see the birds in order to appreciate them. Still, the issue to be considered is to what extent public access can be provided with minimal detrimental effect on the wildlife. Another question is whether the access should be limited to a loop trail around Radio Beach rather than a trail on the possible east-west levee.

4. Key Point

There are already several buildings at Key Point which presumably will remain. How much can Key Point really accommodate? The original Park District concept was an area for relatively passive uses without much hardscape. The Plan shows a lot of hardscape. The EIR should weigh the desirability of these approaches.

5. Port Playground

As in the case of Key Point, are we overloading the Port playground with too many activities? Or is a more passive approach desirable? The Extreme Play and Ride proposals may be better accommodated elsewhere if they are to be in Gateway Park at all.

These are my personal comments and do not necessarily represent the comments of staff or other Board members of the Park District.

Sincerely,

John Sutter
Director, Ward 2

Board of Directors

John Sutter, President, Ward 2
Ayn Wieskamp, Vice-President, Ward 5
Whitney Dotson, Treasurer, Ward 1
Ted Radke, Secretary, Ward 7
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December 4, 2013

Peter Lee
Bay Area Toll Authority
101 Eight Street,
Oakland, CA 94607

Subject: Scoping Comments for the Gateway Park EIR

Dear Mr. Lee,

The East Bay Regional Park District ("District") has reviewed the Notice of Preparation (NOP) for the proposed Gateway Park Environmental Impact Report (EIR). The following are the Districts scoping comments for consideration in preparing the EIR.

The District has been working for several years to obtain 19 acres of land from the Army for development of a new park. The NOP describes a considerably larger 170 acre park planning area. Our vision for this area is primarily low intensity uses, such as passive recreation, trails, bridge and shoreline access, picnicking, restrooms and parking. The NOP identifies several additional recreational amenities that are not typical of our regional parks, including large-scale public venues and a museum to interpret transportation and maritime history. Such facilities are expensive to construct and have high maintenance costs that would exceed potential revenues or District operating budgets.

The NOP states that sustainable funding sources must be secured. We agree with this statement and request that the EIR identify suitable funding opportunities when evaluating the feasibility of project alternatives. Funding needs to be provided for construction, maintenance and eventual replacement of proposed facilities. This would include replacement and/or relocation of facilities that cannot withstand sea level rise projections of up to 60 inches by the year 2100.

The electronic billboards that have been constructed in the project area significantly detract from the existing visual environment and disrupt views from the proposed park. The EIR should consider project alternatives that provide for their removal or relocation so that the public will be afforded an improved visual environment that capitalizes on the spectacular views from this unique public open space of the new Bay Bridge, Port of Oakland and San Francisco Bay.

Gateway Park can serve as both a destination and a jumping off point for access to the new Bay Bridge. This park will experience a substantial amount of public use that will require significant vehicle parking facilities, bus turnarounds, public transit and Bay Trail access. The EIR should evaluate the adequacy of

Board of Directors

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the existing transportation infrastructure and provide for the necessary improvements to accommodate the substantial volume of anticipated public use, especially for potential large-scale public venues and access to the new Bay Bridge.

As a potential responsible agency under the California Environmental Quality Act (CEQA) the District may need to certify the final EIR and adopt findings for project improvements that it may conduct at this proposed park. Accordingly, the EIR should address consistency with the District's 2013 Master Plan policies. The Master Plan can be reviewed on our website at:

http://www.ebparks.org/Assets/_Nav_Categories/Park_Planning/Master+Plan/Master+Plan+2013+Final+Public+Draft+06-18-2013.pdf

The District is co-owner and operator of McLaughlin Eastshore State Park. A General Plan was adopted in 2002 that sets forth land use policies for the Park, including designations for Emeryville Crescent that abuts the northern boundary of the project area. The General Plan can be reviewed on our website at:

http://www.ebparks.org/Assets/files/ebrpd_eastshore_state_park_general_plan_revised_10-2004.pdf

Thank you for considering our comments. Please call me at (510) 544-2622 if you have any questions.

Sincerely,

Brad Olson
Environmental Programs Manager

cc. EBRPD Board of Directors
Robert E. Doyle, General Manager
Bob Nisbet, Assistant General Manager
Mike Anderson, Assistant General Manager

EAST BAY
MUNICIPAL UTILITY DISTRICT

BENNETT K. HORENSTEIN
DIRECTOR OF WASTEWATER

December 5, 2013

RECEIVED
DEC 10 2013
BAY AREA TOLL AUTHORITY

Peter Lee
Project Manager
Bay Area Toll Authority
101 Eighth Street
Oakland, CA 94607

SUBJECT: Gateway Park Scoping Comments

Dear Mr. Lee:

The East Bay Municipal Utility District (EBMUD) appreciates the opportunity to review the Notice of Preparation (NOP) for the Gateway Park project. EBMUD has been a member of the Gateway Park Working Group meetings for the past five years.

Throughout the project development process, EBMUD has consistently emphasized the need to protect critical components of its wastewater infrastructure during construction and operation of the planned Gateway Park development. EBMUD recognizes that it will be some time before the details of a final design of the park are available. The purpose of this letter is to share EBMUD's concerns with the Bay Area Toll Authority (BATA) and CalTrans so that these issues can continue to be addressed during the project design and environmental review process. EBMUD looks forward to continuing to work with BATA and CalTrans on the development of a Gateway Park design that does not impact EBMUD's critical mission of protecting San Francisco Bay.

Background

EBMUD owns, operates, and maintains significant wastewater treatment infrastructure in the vicinity of the proposed Gateway Park area, including:

Main Wastewater Treatment Plant (MWWTP): The MWWTP is located on the eastern end of the proposed Gateway Park area. This facility provides wastewater treatment services for 650,000 residential, commercial, and industrial customers in the East Bay communities of Alameda, Albany, Berkeley, Emeryville, Piedmont, Oakland, and Stege Sanitary District (includes El Cerrito, Kensington, and part of Richmond) at an average rate of 62 million gallons per day.

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Final Effluent Outfall: The MWWTP final effluent outfall is an 108-inch diameter pipe that conveys treated flows from the MWWTP to San Francisco Bay, discharging immediately south of the San Francisco-Oakland Bay Bridge approximately one mile west of the East Bay shoreline. The outfall alignment runs west from the MWWTP to San Francisco Bay along the northern edge of Burma Road in Oakland. Because the outfall is very shallow and breaks ground in some stretches, it must be protected against heavy loads at grade at all times.

Two engineered "zero-load" bridge crossings are currently in place with a third currently being designed by Caltrans. EBMUD maintains a fence that runs along the length of the outfall to prevent unauthorized vehicular crossings. Six vent stacks are also located along the outfall alignment to guard against excessive pressure buildup in the outfall pipe during high flow and/or high tide conditions. These vents are a key safety feature and cannot be removed. In addition, EBMUD maintains approximately 13 access manholes along the outfall alignment to facilitate outfall inspections and any future repair and/or rehabilitation work.

Dechlorination Facility and Outfall Transition Structure: EBMUD adds liquid sodium bisulfite to flows in the effluent outfall to remove residual chlorine (i.e., "dechlorination") from the treated wastewater prior to discharge to San Francisco Bay. The Dechlorination Facility is located adjacent to the outfall (approximately 700 feet east of the East Bay shoreline) and includes 45,600 gallons of chemical storage capacity and associated feed and handling systems. Chemical delivery trucks (5,000 gallon) are received every 3 to 4 days during peak flow periods. The Outfall Transition Structure is located on the East Bay shoreline and connects the land portion of the outfall to the underwater portion of the outfall that runs into San Francisco Bay. The Dechlorination Facility and Outfall Transition Structure are critical final regulatory compliance sampling points for EBMUD—operators are required to collect and analyze grab samples and make necessary process adjustments on an hourly basis (24 hours per day, seven days per week).

EBMUD has a number of outfall property rights agreements that remain in effect in perpetuity. These agreements provide for continuous maintenance access along the length of the outfall with a 12.5-foot width to the north and south of the outfall alignment.

Comments on the NOP

EBMUD is prioritizing the comments below related to the Gateway Park project, which should be considered during project development and environmental review.

Outfall Protection

EBMUD's outfall is a critical wastewater infrastructure element that is vital to EBMUD's mission of treating wastewater from the eastern Bay Area and protecting San Francisco Bay. The following comments are intended to ensure that the Gateway Park project does not damage or adversely impact this critical piece of infrastructure:

1. The final effluent outfall described above is very shallow and must be protected against heavy loads at grade at all times. The park should be designed to minimize the number of outfall crossing points. Engineered crossings with H20 load handling capacity are required for vehicular traffic that crosses the outfall to prevent potential collapse. The design and installation of proposed outfall crossings should be closely coordinated with EBMUD.
2. Park maintenance vehicles may be allowed (without an engineered crossing) over landscaped areas, depending on the vehicle weight, if sufficient soil cover is provided over the outfall. The majority of EBMUD's outfall is either at grade (6,300 feet) or less than 3 feet below grade (1,400 feet). EBMUD's initial estimate is that if 4 feet of soil cover is placed above the outfall at selected locations with appropriate berming and slopes, then park maintenance-related vehicles can likely be accommodated. However, additional precautions will need to be taken to prevent unauthorized crossings by larger vehicles at these locations.
3. In cases where construction occurs in close proximity to the outfall, EBMUD will require pre- and post-construction video inspection of the outfall structure, vibration monitoring during construction, and potentially vibration-free foundation installation methods (depending on the proximity of construction to the outfall).
4. EBMUD maintains a fence that runs along the length of the outfall to prevent unauthorized vehicular crossings. EBMUD intends to retain the existing fence along the outfall alignment to guard against unauthorized vehicular crossings and associated damage to this critical infrastructure element. EBMUD may allow berms to be installed (in lieu of fencing) at some locations, but this issue needs to be studied more closely.
5. Six vent stacks are also located along the outfall alignment to guard against excessive pressure buildup in the outfall pipe during high flow and/or high tide conditions. These vents are a key safety feature and cannot be removed. In addition, EBMUD maintains approximately 13 access manholes along the outfall alignment to facilitate outfall inspections and any future repair and/or rehabilitation work.
6. EBMUD is concerned about the impact of tree planting (i.e., root damage) on the existing outfall structure. Specific tree types, root systems, and offset distances need to be coordinated with EBMUD to avoid future damage and costly repairs.
7. The outfall is expected to last another 100 years with proper maintenance and protection. There is a high degree of likelihood that EBMUD will need to conduct a significant rehabilitation and repair project within the next 30-40 years, which would include bypass pumping operations, excavation, and associated inspection and construction activities.
8. Major park infrastructure elements should be sited at distance from the outfall to minimize impacts during future repair and/or rehabilitation of the outfall by EBMUD.

Safety and Access at the Dechlorination Facility and Outfall Transition Structure

Given EBMUD's regulatory compliance obligations, continuous access must be provided to the Dechlorination Facility and Outfall Transition Structure at all times during construction and operation of Gateway Park. Specific points related to these facilities are provided below:

9. A paved path should be provided for travel between the Dechlorination Facility and the Outfall Transition Structure.
10. Adequate space for parking must be provided at both the Dechlorination Facility and the Outfall Transition Structure. Currently, parking at the Dechlorination Facility is located on the eastern side of the structure. EBMUD personnel park on the eastern side of the Outfall Transition Structure, but parking on the north or south side would also be acceptable.
11. Chemical delivery trucks currently back into the unloading station on the western side of the Dechlorination Facility and then make a U-turn to exit. Sufficient space must be provided at the western side of the Dechlorination Facility to allow chemical delivery trucks to maneuver, park, unload, and exit.
12. Public access and uses in the vicinity of the Dechlorination Facility and Outfall Transition Structure should be carefully considered to ensure public safety during chemical deliveries and routine facility maintenance and operation. The project team should consider provision of an access road to the Outfall Transition Structure, located to the south (incorporating an engineered outfall crossing) to reduce EBMUD's interaction with pedestrians and bikers.
13. Security at the Dechlorination Facility and Outfall Transition Structure also needs to be considered, so as to prevent intrusion and vandalism. The Dechlorination Facility is fenced off to the public, but the Outfall Transition Structure is not fenced off.
14. There are existing EBMUD below-grade utility lines in the general vicinity, including in the area between the Outfall Transition Structure and the Dechlorination Facility. These below-grade utilities should be taken into consideration for any developments (e.g., pavement, landscaping) that may impact them.

EBMUD staff is available to provide additional information on any of the issues discussed above. Please feel free to contact Alice Towey by phone at (510) 287-1986 or via email at atowey@ebmud.com if you have any questions or require additional information.

Sincerely,

VINCENT P. DE LANGE, P.E.
Manager of Wastewater Engineering

VPD:AET:bmy

cc: Laura Thompson, ABAG
Andrew Fremier, BATA
Brad McCrea, BCDC
Dina Noel, CTC
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December 3, 2013

Peter Lee
Bay Area Toll Authority
101 8th Street
Oakland, CA 94607

Re: Gateway Park Planning

Dear Mr. Lee:

The Sierra Club is very concerned about certain proposals for the Gateway Park. We are very concerned that the area North of the toll plaza, especially around the Radio Beach area is proposed for more active recreational uses and public access that would be detrimental to the Emeryville Crescent ecological area and its wildlife. The Sierra Club opposes any such active recreational uses in this area. This area has critical wildlife habitat values that the plan ignores. The area must be protected for the wildlife and to prevent further degradation of the habitat.

The Sierra Club also opposes any more electronic bill boards for any area of in or around the Gateway Park. These bill boards have adverse environmental impacts on wildlife and on the aesthetics of the area.

Sincerely yours,

Norman La Force

Norman La Force, Chair
East Bay Public Lands Committee

December 6, 2013

VIA ELECTRONIC MAIL

Peter Lee, Project Manager
Bay Area Toll Authority
101 Eighth Street
Oakland, CA 94607
Email: plee@mtc.ca.gov

Re: Scoping Comments Related to the Environmental Review of Gateway Park and Redevelopment of the former Oakland Army Base (SCH # 2013112003)

Dear Mr. Lee:

I. INTRODUCTION

I am writing on behalf of Sierra Club, West Oakland Environmental Indicators Project, and Communities for a Better Environment to ensure that the environmental review of the Bay Area Toll Authority's (~~"~~BATA") Gateway Park proposal complies with the basic mandates of the California Environmental Quality Act (~~"~~CEQA") and the National Environmental Policy Act (~~"~~NEPA"). Members of the undersigned groups live, work and recreate in and around the project area. Poorly planned and environmentally detrimental projects jeopardize the health and quality of life of these members.

It has come to our recent attention that one of the developers of the former Oakland Army Base seeks to export coal. *See* Exhibit A at Port 044 (~~"~~The company estimates it will handle 2 to 3 million tons of export coal annually… [T]he company would like to be able to fully load a Panamax ship to 75-80K tons. Rail access to the terminal is also important as it will result in additional congestion of approximately one additional train per day.") The prospect of exporting coal (or any other type of fossil fuel) out of the Oakland has never before been disclosed, analyzed or mitigated in the Oakland Army Base Redevelopment planning and permitting process. The significant traffic, safety, aesthetic, noise, recreational, and health, economic and environmental justice impacts of coal exports to park visitors and to the surrounding community are serious and undeniable. As Port staff itself acknowledges, the potential for coal exports out of the Oakland is a controversial issue that is likely to spark widespread concern in the Bay Area.[1] Given the public interest and serious environmental impacts associated with the export of coal, the undersigned groups look forward to the opportunity to comment on an environmental review document that fully addresses the issues discussed below.

[1] *See* Exhibit A at PORT 040 (where Port staff writes that coal exports ~~"~~could pose substantial risk to our operations, certainly when you have winner of the Nobel Peace Prize laying down in front of trains in British Columbia to protest coal experts through Canada.")

II. LEGAL BACKGROUND

A. CEQA

CEQA has two basic purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. 14 Cal. Code Regs. (~~"C~~EQA Guidelines") § 15002(a)(1). The EIR is the ~~"h~~eart" of this requirement. *See No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 84. The EIR has been described as ~~"a~~n environmental _alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return." *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.

Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures. *See* CEQA Guidelines § 15002(a)(2) and (3). *See also Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564; *Laurel Heights Improvement Ass'n v. Regents of the University of California* (1988) 47 Cal.3d 376, 400).)

B. NEPA

NEPA is our ~~"b~~asic national charter for the protection of the environment." 40 C.F.R. § 1500.1. NEPA's fundamental purposes are to guarantee that: (1) agencies take a ~~"h~~ard look" at the environmental impacts of their actions by ensuring that they ~~"w~~ill have available, and will carefully consider, detailed information concerning significant environmental impacts;" and (2) ~~"th~~e relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). NEPA ~~"e~~mphasizes the importance of coherent and comprehensive up-front environmental analysis to ensure informed decision-making to the end that the agency will not act on incomplete information, only to regret its decision after it is too late to correct." *Center for Biological Diversity v. United States Forest Serv.*, 349 F.3d 1157, 1166 (9th Cir. 2003) (citation omitted).

To accomplish these purposes, NEPA requires all agencies of the federal government to prepare a ~~"d~~etailed statement" that discusses the environmental impacts of, and reasonable alternatives to, all ~~"m~~ajor Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). This statement is commonly known as an environmental impact statement (~~"E~~IS"). *See* 40 C.F.R. Part 1502. An EIS must provide a ~~"f~~ull and fair discussion of significant environmental impacts" of a proposed action, ~~"s~~upported by evidence that the agency has made the necessary environmental analyses." *Id*. § 1502.1. As the Ninth Circuit has stated, this consideration ~~"m~~ust amount to a _hard look' at the environmental effects." *Idaho Sporting Cong. v. Rittenhouse*, 305 F.3d 957, 963 (9th Cir. 2002).

An EIS must include an analysis of "direct effects," which are "caused by the action and occur at the same time and place," as well as "indirect effects which . . . are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8. An EIS must also consider the cumulative impacts of the proposed federal agency action together with past, present, and reasonably foreseeable future actions, including all federal and non-federal activities. 40 C.F.R. § 1508.7. As the Ninth Circuit has repeatedly emphasized, a cumulative impacts analysis "must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects." *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt*., 387 F.3d 989, 994 (9th Cir. 2004). Moreover, a cumulative impacts analysis must be timely, and it is "not appropriate to defer consideration of cumulative impacts to a future date when meaningful consideration can be given now." *Kern v. United States Bureau of Land Mgmt.*, 284 F.3d 1062, 1075 (9th Cir. 2002).

Furthermore, an EIS must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed project. 40 C.F.R. § 1502.14(a). Consideration of alternatives is "the heart of the environmental impact statement," because it compels agencies to "present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." *Id*. Because the statement of purpose and need for an agency action will determine the reasonable range of alternatives to be analyzed, an agency may not define the purpose and need too narrowly. *See City of Carmel-by-the Sea v. U.S. Dept. of Transp*., 123 F.3d 1142, 1155 (9th Cir. 1997) (holding that because the purpose and need of a project defines the range of alternatives, an agency "cannot define its objectives in unreasonably narrow terms").

III. THE SCOPE OF THE PROJECT INCLUDES THE ENTIRE OAKLAND ARMY REDEVELOPMENT AREA

A. The Project Description Must Be Revised to Include the Entire Project

An accurate, stable and finite project description is the *sine qua non* of an informative and legally adequate EIR. *See County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 192 [139 Cal.Rptr. 396, 401]. Without it, CEQA's objective of fostering public disclosure and informed environmental decision-making is stymied. As one analyst has noted:

> The adequacy of an EIR's project description is closely linked to the adequacy of the EIR's analysis of the project's environmental effects. If the description is inadequate because it fails to discuss the complete project, the environmental analysis will probably reflect the same mistake. (Kostka and Zischke, "Practice Under the California Environmental Quality Act," p. 474 (8/99 update).)

Here, the NOP's Project description is incomplete and inaccurate. While the NOP seeks to focus exclusively on the piece of the former Army Base that will be redeveloped into a park, the true scope of the project includes redevelopment of the entire Oakland Army Base. In fact,

the City of Oakland's previous Oakland Army Base Redevelopment EIR specifically includes the Gateway Park as part of the Oakland Army Base Redevelopment project. *See* Exhibit B at p. 3-31to p.3-32. Yet, the current NOP inexplicably fails to similarly include the entire redevelopment area in its project description.

The artificially constrained project description is not a theoretical concern in this case. Just adjacent to the "park project" lies a rail yard for trains carrying potentially dangerous substances such as coal or other fossil fuels. The improperly narrow project description further ignores the environmental impacts of those trains, including the aesthetic, noise, recreational, traffic, safety, and health impacts to park visitors, when those trains are in motion nearby and are being unloaded. The potential for fossil fuel exports out of the adjacent Port of Oakland raises a host of separate potential issues. In fact, a 2010 study of Gateway Park, commissioned by the lead and responsible agencies for the project, made the following apt observation:

> Redevelopment of surrounding parcels for commercial, industrial, Port and transportation uses, if not well coordinated, could create safety challenges for pedestrians and bicyclists, could block visual access to the water or to the desired Park access pathways, and could create unattractive back-door uses along the Park access pathways.

Gateway Park Area: Existing and Future Conditions, prepared by Perkins and Will (March 3, 2010), attached as Exhibit C, at p. 12. The environmental review documents cannot simply ignore these impacts by artificially constraining the project description.

Furthermore, the former Oakland Army Base has a long history of serious contamination that is the process of being cleaned-up under the jurisdiction of the California Department of Toxic Substances Control. The status of those clean-up efforts, including any potential lingering impacts associated with soil disturbance and contaminated groundwater at the *entire* Oakland Army Base site, must be considered part of this project. As BATA's own consultants warn:

- Implementation of the Gateway Park project would require additional sampling, modeling studies and remediation for hazardous materials in the project area;

- Several known hazardous materials sites are still undergoing cleanup with[in] ¼ mile of the project area. This could pose a risk to human health if clean[up] is ongoing during construction activities;

- Two investigations showed a list of sixteen hazardous material sites, six of which have been remediated and closed, three of which remain open for remediation and seven of which have an unknown status;

- It was recommended ***as part of the Oakland Army Base EIR*** that further investigation be conducted.

Exhibit C at 53-54 (emphasis added). Finally, given the existing environmental burdens in the West Oakland area and the fact that the park would have specific elements (i.e. playgrounds and museums) that are likely to attract a concentration of children, the environmental review process must consider environmental justice impacts and impacts to sensitive receptors. A full project description that covers the Oakland Army Base redevelopment area, as a whole, would help ensure that these issues are adequately disclosed, analyzed and mitigated as required by CEQA.

B. The Project Cannot Have Two Lead Agencies

The NOP's unduly narrow project description is the root of a second flaw in the environmental review – that is, shifting the "lead agency" role from the City of Oakland to BATA. Because the City of Oakland served as the "lead agency" for the development of other aspects of the Oakland Army Base redevelopment, it should serve as the lead agency for this aspect of the project as well. *See* CEQA Guidelines § 15050(a) (stating that if two or more agencies are involved in implementing or approving a proposed project, only one agency can be the lead agency).

C. The Lead Agency Cannot "Piecemeal" Its Review of the Oakland Army Base Redevelopment Project

CEQA mandates "that environmental considerations do not become submerged by chopping a large project into many little ones -- each with a minimal potential impact on the environment - which cumulatively may have disastrous consequences." *Bozung v. LAFCO,* (1975) 13 Cal.3d 263, 283-84; *City of Santee v. County of San Diego*, (1989) 214 Cal.App.3d 1438, 1452. Before undertaking a project, the lead agency must assess the environmental impacts of all reasonably foreseeable phases of a project. *See Laurel Heights*, *supra,* pp. 396-97 (EIR held inadequate for failure to assess impacts of second phase of pharmacy school's occupancy of a new medical research facility). A public agency may not segment a large project into two or more smaller projects in order to mask serious environmental consequences. As the Second District stated:

> The CEQA process is intended to be a careful examination, fully open to the public, of the environmental consequences of a given project, covering the entire project, from start to finish. . . the purpose of CEQA is not to generate paper, but to compel government at all levels to make decision with environmental consequences in mind.

Natural Resources Defense Council v. City of Los Angeles ("*NRDC v. LA*") (2002) 103 Cal.App.4th 268 (emphasis added).

By failing to consider all aspects and phases of the Oakland Army Base redevelopment, the NOP risks masking the combined environmental impacts of the Project. CEQA prohibits such a "piecemeal" approach. *See Kings County Farm Bureau v. City of Hanford* (1990) 221

Cal.App.3d 692, 720. It was precisely such piecemealing that was rejected by the court in *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus*, (1994) 27 Cal.App.4th 713. *In San Joaquin Raptor*, the court found that the EIR for a residential development project was deficient because it treated the associated infrastructure improvements, including a new wastewater treatment plant, as a separate project studied in a different EIR. The *San Joaquin Raptor* court found that this separation of the "sewer expansion" from the residential project improperly curtailed the project description, resulting in the "fallacy of division." *Id.* at 729-730. Just like the wastewater treatment plant in *San Joaquin Raptor*, the Gateway Park constitutes an essential element of the Oakland Army Base redevelopment project. *See* Exhibit B at p. 3-31to p.3-32. In fact, as the NOP itself states, "the idea for a new park at this location was conceived in the 1990s during planning for . . . reuse of the Oakland Army Base." NOP at 2.

IV. THE ENVIRONMENTAL REVIEW DOCUMENT MUST CONSIDER THE CUMULATIVE IMPACTS OF THIS PROJECT COMBINED WITH THE BROADER ARMY BASE REDEVELOPMENT, INCLUDING RAIL TRANSPORT

Even if BATA and the City of Oakland claim that the Gateway Park is somehow separate from the Oakland Army Base Redevelopment Project, which would be incorrect, analysis of the impacts of the broader Army Base redevelopment activity would nonetheless remain necessary as part of the EIR's cumulative analysis. An EIR must discuss significant "cumulative impacts." CEQA Guidelines § 15130(a). This requirement flows from CEQA Section 21083, which requires a finding that a project may have a significant effect on the environment if,

> the possible effects of a project are individually limited but cumulatively considerable. . . . "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Public Resources Code § 21083. As the court stated in *Communities for a Better Environment v. Cal. Resources Agency*, ("*CBE v. CRA*") (2002) 103 Cal.App.4th 98, 114:

> Cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact.

Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental

impacts." CEQA Guidelines § 15355(a). "[I]ndividual effects may be changes resulting from a single project or a number of separate projects." *Id.*

As set forth by the court in *CBE v. CRA*, 103 Cal.App.4th at 117:

> The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

A legally adequate "cumulative impacts analysis" views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable probable future projects whose impacts might compound or interrelate with those of the project at hand. "Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." CEQA Guidelines § 15355(b).

Mere conclusory statements are not sufficient to satisfy the cumulative impacts analysis requirement. *See Mountain Lion Coalition v. Fish & Game Comm'n* (1989) 214 Cal.App.3d 1043, 1047. A proper cumulative impact analysis must be supported by references to specific evidence. *Id.* As the court in *Mountain Lion Coalition* explained, "it is vitally important that an EIR avoid minimizing the cumulative impacts. Rather, it must reflect a conscientious effort to provide public agencies and the general public with adequate and relevant detailed information about them." *Id.* at 1051. "A cumulative impacts analysis which understates information concerning the severity and significance of cumulative impacts impedes meaningful public discussion and skews the decisionmaker's perspective concerning the environmental consequences of the project, the necessity for mitigation measures, and the appropriateness of project approval." *Id.*

To comply with CEQA, an EIR must contain either "a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency," or "a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact." CEQA Guidelines § 15130(b)(1); *San Joaquin Raptor/Wildlife Rescue Ctr. v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 740.

Similarly, under NEPA, an EIS must consider direct effects, indirect effects, and cumulative effects. "Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative." 40 C.F.R. § 1508.8.

V. THE OUTDATED AND INACCURATE EIR FOR THE OAKLAND ARMY BASE REDEVELOPMENT PROJECT MUST BE UPDATED TO ANALYZE, AMONG OTHER IMPACTS, RAIL TRAFFIC AND FOSSIL FUEL EXPORTS

As explained above, there are a number of legal requirements that mandate environmental review of the *entire* Oakland Army Base redevelopment project, rather than Gateway Park alone. The City of Oakland engaged in a previous environmental review of the Oakland Army Base redevelopment project in 2002, followed by an addendum in 2012. (SCH # 2001082058). However, new and significant information has emerged since those previous environmental reviews, rendering those documents outdated and inaccurate. Specifically, correspondence from the Port of Oakland documents plans to export coal from the Oakland Army Base Redevelopment project. (*See* Exhibit A.) The new proposal for overseas coal exports, including the impacts of transporting coal to California by rail from out-of-state, must be disclosed, analyzed and mitigated in this environmental process. In addition, given the recent and growing interest in exporting petroleum products from California,[2] the potential for fossil fuel exports, more generally, must be analyzed in the environmental review document for the project.

The lead agency in this case should not be tempted to rely on any of the outdated analysis in the Oakland Army Base Redevelopment EIR. This is because, as explained above, substantial changes to the project and new information (including the export of fossil fuels) require a fresh analysis of the project. Cal. Pub. Res. Code § 21166; CEQA Guidelines § 15162(c). This holds equally true of the outdated cumulative impact analysis in the 2002 Oakland Army Base Reuse EIR and its Addendum. *See Bakersfield Citizens v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1217.)

VI. A FULL EIS, RATHER THAN AN EA, IS REQUIRED FOR THE PROJECT UNDER NEPA

The NOP states, without any explanation, that an Environmental Assessment ("~~E~~EA"), rather than an EIS, will be prepared for the proposed action. An EIS is required for the proposed action for at least two reasons. First, as explained above, significant changes to the Oakland Army Base Reuse and new information related to fossil fuel exports, render the previous environmental review of the reuse outdated, inaccurate, and unreliable. Similar to a lead agency's CEQA obligations, NEPA requires an agency to prepare a supplement to either a Draft or Final EIS if it makes substantial changes in the proposed action that is relevant to environmental concerns, or if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action of its impacts. 40 C.F.R. § 1502.9(c).

[2] *See, e.g.*, Exhibit D (http://www.nationaljournal.com/new-energy-paradigm/amid-oil-boom-petroleum-exports-surge-20131017 (last visited on December 3, 2013)).

The December 2001 NEPA document for the Oakland Army Base Reuse project contains the following description of the proposed action: "The proposed action is the disposal of OARB land and facilities made available by its mandated closure. Reuse is treated as a secondary action, resulting from disposal." *Environmental Impact Statement for the Disposal and Reuse of the Oakland Army Base*, Prepared for the Military Traffic Management Command by the U.S. Army Corps of Engineers (December 2001) at ES-1.[3] This 2001 EIS nowhere mentions the potential for fossil fuel exports, which constitutes a fundamental change in the project.

Second, the specific impacts related to coal exports are significant and warrant a full EIS, as discussed more fully below. Finally, to the extent the Port of Oakland will be used to export any other type of fossil fuel, those impacts must also be addressed, as explained below. In short, the proposed action, and its related impacts, demand a supplemental EIS, rather than an EA.

VII. SPECIFIC POTENTIAL IMPACTS RELATED TO COAL EXPORTS

A. Climate Change Impacts

Very recently, United Nations' Intergovernmental Panel on Climate Change ("IPCC") released the fifth version of its frequently cited report reflecting the scientific consensus that unrestrained greenhouse gas emissions cause global warming. The fifth IPCC report confirms yet again that climate change is being caused by unrestrained carbon pollution from industrial activities. As summarized by the IPCC in an accompanying press release:

> **Warming in the climate system is unequivocal** and since 1950 many changes have been observed throughout the climate system that are unprecedented over decades to millennia. Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850… Thomas Stocker, the other Co-Chair of Working Group I said: "Continued emissions of greenhouse gases will cause further warming and changes in all components of the climate system. Limiting climate change will require **substantial and sustained reductions** of greenhouse gas emissions."[4]

Reacting to the reality of climate change, in 2006, Governor Schwarzenegger signed AB 32, a landmark law to control and reduce the emission of global warming gases in California along with the companion statute SB 1368, which prohibits California utilities from making long term investments in coal-based electricity generation. AB 32 requires both reporting of greenhouse gas emissions and their reduction on an ambitious time line, including a reduction of

[3] Available at: http://gate1.baaqmd.gov/pdf/0267_Part1_Environmental_Impact_Statement_Oakland_Army_Base_2001.pdf (last visited on December 4, 2013).

[4] Available at: http://www.ipcc.ch/news_and_events/docs/ar5/press_release_ar5_wgi_en.pdf (last visited on December 6, 2013)(emphasis in original).

CO2 emissions to 1990 levels by 2020. Looking beyond 2020, Executive Order S-3-05 sets an emissions reduction target of 80 percent below 1990 levels by 2050. Exec. Order S-3-05. In adopting AB 32, the Legislature made the following specific findings:

> (a) Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.
>
> (b) Global warming will have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry. It will also increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state.
>
> (c) ***California has long been a national and international leader on energy conservation and environmental stewardship efforts***, including the areas of air quality protections, energy efficiency requirements, renewable energy standards, natural resource conservation, and greenhouse gas emission standards for passenger vehicles. ***The program established by this division will continue this tradition of environmental leadership by placing California at the forefront of national and international efforts to reduce emissions of greenhouse gases.***
>
> (d) ***National and international actions are necessary to fully address the issue of global warming. However, action taken by California to reduce emissions of greenhouse gases will have far-reaching effects by encouraging other states, the federal government, and other countries to act.***
>
> (e) ***By exercising a global leadership role,*** California will also position its economy, technology centers, financial institutions, and businesses to benefit from national and international efforts to reduce emissions of greenhouse gases. More importantly, investing in the development of innovative and pioneering technologies will assist California in achieving the 2020 statewide limit on emissions of greenhouse gases established by this division and will provide an opportunity for the state to take a global economic and technological leadership role in reducing emissions of greenhouse gases.

Cal. Health and Saf. Code § 38501 (a) – (e) (emphasis added). The extent of future warming depends on whether and how rapidly California and the rest of the world reduce greenhouse gas

emissions. Even under a low emissions scenario, which assumes rapid reductions in greenhouse gas pollution, California is projected to experience a host of impacts by the end of this century, including 30 – 60% loss of the Sierra snowpack, a 10 – 35% increase is the risk of wildfire, 1.5 times more critically dry years, and increases in ozone formation, smog, and air quality-related fatalities in the South Coast Air Basin. *California Climate Change Center, Our Changing Climate: Assessing the Risks to California* (2006)[5] at 15 (hereinafter ~~"O~~*ur Changing Climate 2006*"). Under a higher emissions scenario, projected impacts to California are staggering and include a 90% loss of the Sierra snowpack and 4 – 6 times as many heat-related deaths. *Id.*

Even more alarming, recent assessments have concluded earlier analyses understate future climate impacts. In its 2012 update to its assessment of climate change impacts to California, the California Climate Change Center, a collaboration of researchers assembled by the California Energy Commission, determined that sea level along the California coast could increase by 31-55 inches by the end of the century, 9-25 inches more than its 2006 estimate. Compare *California Climate Change Center, Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California* (2012)[6] at 9, , (hereinafter ~~"O~~*ur Changing Climate 2012*) *with Our Changing Climate 2006* at 15 (estimating 22-30 inches of sea level rise by the end of the century). The 2012 Assessment also concluded that as early as 2050, today's ~~"1~~00-year storm event" could strike annually as result of sea level rise. *Our Changing Climate 2012* at 9. Because the severity of these impacts will depend on society's ability to reduce greenhouse gas pollution, ~~"~~the choices we make today greatly influence the climate our children and grandchildren inherit." *Our Changing Climate 2006* at 2. The export of coal from California is not only antithetical to the spirit and purpose of California's Global Warming Solutions Act, but would exacerbate the serious climate change impacts described above. *Id.* at § 38501 (a), (b).

Concentrations of CO2 in the atmosphere ~~"a~~re projected to continue increasing unless the major emitters take action to reduce emissions." *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 66,496, 66,539 (Dec. 15, 2009). The U.S. Environmental Protection Agency (~~"E~~PA") recognized the cumulative nature of both the climate change problem and the strategies needed to combat it:

> [N]o single greenhouse gas source category dominates on the global scale, and many (if not all) individual greenhouse gas source categories could appear small in comparison to the total, when, in fact, they could be very important contributors in terms of both absolute emissions or in comparison to other source categories, globally or within the United States. If the United States and the rest

[5] http://www.energy.ca.gov/2006publications/CEC- 500-2006-077/CEC-500-2006-077.PDF (last visited on December 5, 2013).

[6] http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC- 500-2012-007.pdf (last visited on December 5, 2013).

> of the world are to combat the risks associated with global climate change, contributors must do their part even if their contributions to the global problem, measured in terms of percentage, are smaller than typically encountered when tackling solely regional or local environmental issues.

Id. at 66,543. Consistent with this finding, the Ninth Circuit has rejected the argument that individual actions represent too minor of a contribution to the global problem to merit consideration under NEPA: "The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct. Any given rule setting a [vehicle fuel-efficiency] standard might have an 'individually minor' effect on the environment, but these rules are 'collectively significant actions taking place over a period of time.'" *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin*., 538 F.3d 1172, 1217 (9th Cir. 2008) (internal citations omitted). CEQA also calls for a careful review of impacts related to greenhouse gas emissions. CEQA Guidelines § 15064.4.

Both the United States and California have sought to meet the challenge of climate change with a variety of statutory and regulatory actions to reduce our reliance on fossil fuels and promote conservation and alternatives. At the federal level, EPA has responded with a formal finding that greenhouse gases endanger the public health and welfare, 74 Fed. Reg. 66,496 (Dec. 15, 2009), the first step in comprehensively regulating greenhouse gases under the federal Clean Air Act. EPA has already issued some regulations relating to reducing emissions from both mobile and stationary sources, including the June 2010 "tailoring rule" governing federal Clean Air Act requirements for greenhouse gas emissions from stationary sources, 75 Fed. Reg. 31,514 (June 3, 2010), passenger vehicle rules, *see, e.g*., *2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards*, 77 Fed. Reg. 62,624 (Oct. 15, 2012), and proposed rules for power plants, see *Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources* 77 Fed. Reg. 22,392 (April 13, 2012).

In short, both the United States and California have made firm and clear commitments to address the causes of climate change and have committed to promote alternatives to projects that generate greenhouse gas emissions and mitigate those that cannot be avoided. The proposal to construct a coal export terminal with massive direct and indirect greenhouse gas emissions needs to be evaluated in light of those statutory and regulatory commitments.

1. An EIR/EIS for the Project Must Evaluate Direct, Indirect and Cumulative Climate Impacts

In a landmark 2008 case, the Ninth Circuit Court of Appeals found that a federal agency violated NEPA when it failed to prepare a full EIS on proposed corporate average fuel economy ("CAFÉ") standards for light trucks. *See Ctr. for Biological Diversity*, 538 F.3d 1172. There, the Ninth Circuit rejected the argument that individual actions represent too minor of a contribution to the global problem to merit consideration. Even more recently, the Ninth Circuit

again emphasized that "reasonably foreseeable future actions need to be considered [under NEPA] even if they are not specific proposals.'" *N. Plains Res. Council v. Surface Transp. Bd*., 668 F.3d 1067, 1079 (9th Cir. 2011) (quoting EPA guidance document).

Several cases confirm that NEPA requires evaluation of indirect impacts of projects that facilitate movement of fossil fuels, including GHG emissions. For example, in *Mid-States Coal. for Progress v. Surface Transp. Bd*., 345 F.3d 520 (8th Cir. 2003), the Eighth Circuit Court of Appeals invalidated an EIS for a rail construction project intended to supply coal from the Powder River Basin to power plants because it failed to analyze the emissions of burning the coal that would be transported by the rail line. The Court found that the project was likely to affect the country's long-term demand for coal and hence the impacts of coal burning should have been considered in the EIS. Similarly, in *Border Plant Working Grp. v. Dep't of Energy*, 260 F. Supp. 2d 997 (S.D. Cal. 2003), a federal district court invalidated a decision to approve transmission lines that would connect proposed power plants in Mexico to the U.S. power grid because indirect effects were not considered. The Court found that the decision violated NEPA because decision-makers failed to consider the impacts of the operation of the Mexican power plants—including impacts on air quality and climate—that were closely linked to the transmission lines. The Court found that the operation of the power plants were an "indirect effect" of the transmission line project because the two were causally linked. The Court specifically struck down the agency's decision that the project's impacts were too minimal to require preparation of an EIS. *Id*.

Similarly, CEQA defines a "project" as "an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and…that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies." (Cal. Pub. Res. Code § 21065 9(c).) The Guidelines augment this definition by providing that a "project" is "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment" and which is undertaken, supported, or approved by a public agency. (Guidelines, § 15378(a) [emphasis added].) The California Supreme Court has determined that "project" is "to be interpreted in such manner as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." *Friends of Mammoth v. Board of Supervisors of Mono County* (1972) 8 Cal. 3d 247, 259; *see also McQueen v. Board of Directors of the Mid-Peninsula Reg.'l Open Space Dist.* ("*McQueen*") (1988) 202 Cal. App. 3d 1136, 1143 ["Project' is given a broad interpretation in order to maximize protection of the environment"].

ARB has recognized the need for specific analysis of greenhouse gases under CEQA:

> There is a strong need [] to aggressively address GHG emissions right now. The pollution we contribute to the atmosphere today will continue to have climate impacts for years, decades, and in some cases, millennia to come. And the longer we delay in addressing the problem, the more we risk being unable to meet our

> climate objective. CEQA provides a mechanism that is independent of AB 32 through which lead agencies can begin immediately to reduce the climate change-related impacts of the projects that come before them.

California Air Resources Board, *Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act* (Oct. 2008)[7] at 4.

The impacts of exporting coal are not limited to the climate impacts of its use in overseas power plants. A valid CEQA/NEPA analysis must also consider the climate and other air emissions of transporting these huge volumes of coal. For example, by one estimate, each trip of a fully loaded Panamax container ship to China, burns over 1100 tons of bunker fuel. Bunker fuel generates significant CO2 emissions and other much more potent greenhouse gases like nitrous oxides (N2O), methane, and black carbon. It also causes a variety of other toxic and harmful air emissions, including diesel particulates that are highly damaging to human health. These kinds of impacts are ~~"in~~direct effects" of the decision to authorize the coal export facility and should be evaluated in an EIR/EIS, along with any appropriate mitigation.

The EIR/EIS must also include discussion of the impacts of mercury deposition that will be caused by the burning of this increased volume of coal. Coal burned in Asia is a major source of local mercury contamination. Mercury is a highly toxic pollutant that bioaccumulates and poses severe health hazards, especially to pregnant mothers and small children.

Transportation of coal over long distances via rail also has significant environmental impacts, including the fossil fuel consumption of moving large volumes of material hundreds or thousands of miles. Data also shows that open coal trains lose huge volumes of coal dust during transportation. Such discharges would add to air quality problems along the rail route. According to BNSF studies, 500 to 2,000 lbs. of coal can be lost in the form of dust for each rail car; coal trains are typically composed of at least 120 cars per train. In other studies, again according to BNSF, as much as three percent of the coal in each car (around 3,600 lbs. per car) can be lost in the form of dust. Hearing Transcript, July 29, 2010, *Ar. Elec. Coop. Ass'n – Petition for Declaratory Order*, Surface Transportation Board, Docket No. FD 35305, at 42:5 13. This is a huge volume of coal that could escape into the air and water. Moreover, as with the greenhouse gas impacts, this analysis must be viewed in the context of all existing and reasonably foreseeable similar impacts.

B. The EIR/EIS Must Consider All Impacts Caused By Construction and Operation Of the Project

[7] http://www.arb.ca.gov/cc/localgov/ceqa/meetings/102708/prelimdraftproposal102408.pdf (last visited on December 5, 2013).

Coal exports from the Oakland will affect people and places far beyond the immediate construction zone. Every community located along the rail line between the coal mines and the Port will be harmed, and people outside California will be affected by the climate impacts of mining, transporting, and ultimately burning this coal.
Affected rail communities might include Richmond, Sacramento, Bakersfield, Fresno, Merced, Modesto, Richmond, Stockton and Pittsburgh.[8] The EIR/EIS must, of course, analyze the impacts of construction and operations at and near the former Oakland Army Base, but it also must analyze the impacts of coal trains and coal use on a much broader scale. This includes the direct, indirect, and cumulative impacts of coal export on public health, public safety, economics, marine health, public investment, and climate change.

To be clear, EIR/EIS must examine the full direct, indirect, and cumulative impacts of the proposed project— from the mining of the coal in the Powder River Basin or Utah or Colorado, the transport of coal by rail through several states and hundreds of communities, the loading and shipping of coal via large ocean vessels, to the burning of the coal in Asia.

1. The Public Health Issues Raised by This Project Are Significant and Harmful.

The public health issues raised by a project of this size and extent include increased air pollution from coal dust (mercury, arsenic, lead and uranium), diesel pollution over different operational lifetime projections for the terminal, soil contamination by coal dust, and increased noise. The EIR/EIS should include a specific focus on children, the elderly, and other vulnerable members of the community. It should also consider cumulative and disproportionate impacts on communities already exposed to high levels of air and water pollution, particularly low income communities and communities of color. Any health impact analysis should take into account both the needs of communities potentially affected by the en-route trains and the site, as well as workers onsite who will be exposed at much higher levels.

a. The Project, Alone Or In Combination With Other Existing and Future Development, Will Cause Harmful Air Impacts

West Oakland already suffers from some of the unhealthiest air in the region. Air quality impacts and pollution from nitrogen dioxide (~~N~~NO2"), particulate matter, sulfur dioxide, sulfuric acid mist, heavy metals and coal dust must be analyzed. NO2 exposure can have a wide range of health impacts depending on the length of exposure and various other factors. Epidemiologic research establishes a plausible relationship between NO2 exposures and adverse health effects ranging from the onset of respiratory symptoms to hospital admission. 76 Fed. Reg. 57105 at 57304; Environmental Protection Agency, Integrated Science Assessment for Oxides of Nitrogen—Health Criteria (EPA/600/R-08/071), 5 -15.

[8] *See, e.g,* Burlington Northern Santa Fe Rail Map, October 29, 2013, http://www.bnsf.com/customers/pdf/maps/coal_energy.pdf

Particulate matter ("PM") refers to a broad class of diverse substances that exist as discrete particles of varying size. 76 Fed. Reg. 57105 at 57302. Recent studies have found an increase in such particles that is higher from coal trains than other types of rail. Such particles are produced by a variety of anthropogenic and natural sources, though most fine particles are produced by anthropogenic combustion and transformations of gas emissions, like NOx, in the atmosphere. The composition of the particles can vary greatly and can remain in the atmosphere for weeks and disperse over thousands of miles. Depending on the size, these particles can be inhaled and penetrate the respiratory tract to cause significant adverse health effects. Coal dust contains many harmful components and causes health problems as people are exposed to fugitive coal dust from coal trains, coal storage piles, loading and unloading practices, emissions from dust control systems, and risk of explosion and fire from coal dust. *See The Fire Below: Spontaneous Combustion in Coal*, U.S. Dep't of Energy (May 1993). Coal is a volatile and easily combustible material—other coal terminals have faced huge fires that pollute the air and put emergency responders and terminal staff at risk. A recent study concluded that the spontaneous combustion of coal stocks, in addition to the "obvious safety hazard and the potential loss of valuable assets" constituted substantial sources of GHGs.[9] Although difficult to quantify, the study estimated that GHG emissions from spontaneous combustion of coal were likely below 3%.[10]

Neighborhoods living near existing coal export and barging terminals on the East Coast and Alaska document significant localized pollution, nuisance, and economic loss from coal dust. There is a considerable body of literature surrounding the risks of coal dust from facilities like this one that should be scrutinized carefully in the EIS. Ironically, much of this evidence was developed by BNSF in an effort to prevail in litigation against its efforts to require coal shippers to take additional measures to reduce dust losses.

Besides analyzing the potential detrimental effects on air quality that will arise from the export terminal itself, a valid NEPA analysis must also consider the negative impacts that will arise from the mining of the coal, the required transport of coal from its source in the Powder River Basin, or Utah or Colorado, to Oakland, the burning of the coal and the disposal of coal combustion waste. This process will affect air quality through a variety of manners. Mining of the coal and loading it onto trains creates significant particulate matter and NOx emissions from the explosives. The NOx emissions from the blasting is so significant that it creates visible clouds of pollution and forces warning signs to be placed near the mines. Transportation creates both the emissions from the diesel locomotives required to carry the coal, as well as the fugitive coal dust that will escape the freight cars along the way, as well as during loading and unloading on both ends of transport. These effects will have a significant impact on the ability of air

[9] http://www.worldcoal.com/news/coal/articles/Quantifying_emissions_from_spontaneous_combustion_227.aspx#.UoFxFWXTnct (last visited on December 6, 2013).

[10] *Id*.

quality control regions through which the trains will pass to meet the National Ambient Air Quality Standards, which are set in order to protect public health. In fact, no matter which route the trains take from the Powder River Basin (or Utah or Colorado) to the export facility, they will pass through numerous non-attainment and maintenance areas for the criteria pollutants they will be emitting.

Further, a valid NEPA analysis must consider air pollution impacts that specifically accompany transporting and burning coal overseas. Each trip of a fully loaded Panamax container ship to China, for example, uses around 500 tons of bunker fuel per trip, generating both significant CO2 emissions in its own right as well as a N2O, NOx, SO2, sulfuric acid mist and a variety of other toxic and harmful air emissions, including diesel particulates that are highly damaging to human health, as well as black carbon, one of the most potent greenhouse pollutants in existence. T.C. Bond et al., *Bounding the role of black carbon in the climate system: A scientific assessment*, Journal of Geophysical Research: Atmospheres (online version Jan. 15, 2013). The climate impact of the coal dust must also be analyzed in-depth in the EIS, including the potential local and regional albedo change and warming impacts. Relatedly, the EIS must consider idling ship emissions of cargo vessels at the terminal; such emissions have been a significant source of toxic air pollution in other ports.

Exporting coal may also increase the air-quality impacts associated with its combustion. When coal is burned domestically, we can be reasonably certain of the pollution-control regulations to which it will be subject. However, there is no guarantee that equivalent regulations will be in place in the Asian countries where the exported coal will be sold and burned. As a result, the air pollution impacts of exporting American coal may be greater than if the coal were to be burned domestically. Yet these impacts will not stay in Asia. Airborne transport of soot, sulfur compounds, mercury, ozone, and other byproducts of coal combustion can travel across the Pacific Ocean and affect the health of western states‘ ecosystems and residents. *See* Eric de Place, *Northwest Coal Exports: Some common questions about economics, health, and pollution* (Nov. 2011) at 7. These kinds of impacts are ~~–in~~direct effects" of the shipment of coal and should be evaluated in an EIS along with any appropriate mitigation. To complete the lifecycle analysis, the impacts from fugitive particular matter and heavy metals from the transport and disposal of coal combustion waste must also be considered.

In doing an analysis of air pollution impacts, the agencies should not be tempted to rely on the attainment status of the area alone. First, attainment designations do not tell us anything about air impacts that will happen in the future when a new source of pollution is added. In addition, at present, it is unclear that any part of this project‘s lifecycle will be subject to New Source Review permitting. Should this be the unfortunate case, a full analysis of the air impacts in the NEPA/CEQA process is all the more important.

Tools such as AERMOD are available and should be used to perform objective, qualitative analysis of air impacts. It is also critical in conducting modeling analysis to use reasonably conservative but realistic inputs into the model. For example, it would be easy, but

inaccurate, to assume the coal train travels at an average speed for its entire journey from the Powder River Basin (or Colorado or Utah) to Oakland. However, the reality, which should be reflected in the analysis, is that coal trains travel very slowly at certain points of their journey because of elevation increases or safety restrictions. In addition, additional locomotive engines are needed at certain points of the journey to make it over hills and the engines have to work harder, and thus produce more emissions, at those points. In addition, trains idle along the way for various reasons like crew changes and train re-configurations. Similarly, it would be easy, but inaccurate, to assume that by the time the coal terminal is operating, only ultra-low sulfur diesel will be used in the trains and ships. However, there are exceptions to the diesel regulations such as the provisions for using transmix diesel that has much higher sulfur content. Realistic assumptions of these factors need to be included in the analysis. Modeling must take these inputs into account to be realistic. For example, expert reports and modeling on air quality impacts from a proposed 8.8 million ton coal export facility in Oregon found that the proposed project "will cause very adverse air quality impacts in both Washington and Oregon." *See* AMI Environmental AERMOD Modeling of Air Quality Impacts of Proposed Morrow Project, Final Report, Oct. 2012 (attached as Exhibit E).

b. The Project Will Harm Water Resources

The EIS must consider effects to all surface and ground water resources within the project area. The EIS must consider all potential water quality impacts (e.g., increased sediment loads, possible spills, coal dust impacts, mercury deposition, changes to alluvial groundwater quality, degradation of drinking well water), and water quantity impacts (e.g., drawdown of aquifers, diversions or diminutions of surface flow, hydrologic changes affecting seeps and springs, drinking water impacts) of the project's construction and operation. The agencies should ensure that the EIR/EIS describes, in detail, the possible sources of all water needed for the railroad and associated mining activities, including water originating in any over-allocated water source. It should also look closely at the experience of water pollution at other coal terminals, the reality of which is generally far from the promises made by its proponents.

The agencies also must consider cumulative water resource impacts flowing from reasonably foreseeable coal mines in the Powder River Basin or in Utah or Colorado (e.g., disruption of hydrologic systems, pollution impacts), as well as impacts to water resources that would be expected from burning the coal and disposal of coal combustion waste, whether domestically or overseas. In addition to water availability considerations, the EIS must examine the project's potential impacts to water quality. Contamination of river and drinking water supplies can occur with diesel emissions and diesel spills both during project construction and during the ongoing operation of the project, which relies on continuous activity of trains. The TVA Kinston coal ash spill disaster is just one of many examples of coal combustion waste contaminating water. There are dozens and dozens of less dramatic water contamination examples from coal combustion waste pollution. In addition, drinking water supplies can become contaminated from coal dust and coal spills. Coal will be delivered in open top rail cars to the site. Regular movement of uncovered rail cars and the loading and unloading of these cars

cause the release of fugitive coal dust, which can further contaminate the water supplies. Construction and operation of the railroad may also result in water quality impacts in the way of increased sedimentation and other changes. In addition, the possibility of spills of coal and heavy bunker oil in the Bay after loading the coal onto ocean-going vessels must be analyzed. The EIS must assess these impacts and detail how federal, state, and local water quality standards will be met, monitored, and maintained.

c. Public Safety Will Be Jeopardized by Construction and Operation of the Project.

The impacts to public safety run the gamut from increased train traffic and vehicle accidents, increased derailments and concomitant emergency response, travel time delays at specific intersections (including the economic impacts of those delays, and impacts to/delay of emergency services (fire, police, EMT).

Threats from frequent long trains at rail crossings all along the route from the source of the coal to the export terminal in Oakland will mean delayed emergency medical service response times; and increased accidents, traumatic injury and death. Each fully loaded train is over a mile long, and this proposal would significantly increase the daily number of trains along the rail route. These trains will bisect multiple communities along the route, leading to significant traffic delays and potential safety issues at grade-crossings. The delay of only a few minutes for an emergency response vehicle can mean the difference between life and death for citizens in these rural communities. In addition, increased rail traffic will lead to increased collisions between passenger vehicles, pedestrians, and trains; there are approximately 3,000 vehicle collisions with coal trains each year already, and 900 pedestrian accidents. Daniel A. Lashof, et al., Natural Resources Defense Council, *Coal in a Changing Climate* (Feb. 2007).

In addition to the threat of delay, the EIS must review the threats associated with coal train derailments. There were over 18 derailments of coal trains in the United States in the summer of 2012. In 2013 alone, there have been over 90 coal train-related incidents in the U.S. that include derailments, spills and other dumping, 36 of which were derailments. There is a serious risk to human health from a huge increase in coal train traffic along the route to and from the source of the coal and near the Oakland export terminal.

Coal dust has also been shown to be a cause of rail bed instability and derailments, which can pose a significant public safety hazard. The Surface Transportation Board (~~"S~~STB") found coal dust to be ~~"a~~ pernicious ballast foulant." Surface Transportation Board Decision, Arkansas Electric Cooperative Corporation – Petition for Declaratory Order, Docket No. FD 35305 (Mar. 3, 2011). The STB further acknowledged in its coal dust proceeding that the quantity of coal emitted by a train into the air, water and onto tracks is not insignificant. An average of 500 pounds of coal dust per rail car is lost during each trip. BNSF Railway, *Coal Dust Frequently Asked Questions* (2011). Each train is composed of 120 cars or more. *See* Hearing, July 29, 2010, Arkansas Electric Cooperative Association—Petition for Declaratory Order, Surface

Transportation Board, Docket No. FD 35305 at 42:5-13. "Coal dust, even in small amounts, poses a real threat to the integrity of the ballast section and track stability." *Id*. at 46:18-20. Surface Transportation Board Hearing Transcript (STB Hearing Transcript), Re: Arkansas Electric Cooperative Corporation – Petition for Declaratory Order, Docket No. FD 35305 (July 29, 2010).

The EIS's analysis of coal dust should include a discussion of the efficacy of surfactants to control coal dust, potential impacts of the use of surfactants to control dust emissions, as well as consequences from not using surfactants. First, although use of surfactants in some contexts is common, their efficacy and safety for use on coal-carrying trains is unproven. The oft-claimed 85% control efficiency has been called "junk science" by coal shippers. Topping agents wear off along the route, are themselves pollutants, and can even possibly increase the amount of coal lost due to saltation. Phyllis Fox, *Fugitive Particulate Matter Emissions from Coal Train Staging at the Proposed Coyote Island Terminal*, July 19, 2013. Second, surfactants contain myriad undisclosed chemicals, many of whose biological and ecological effects have not yet been adequately studied. Surfactants could cause a number of potential harms, including: danger to human health during and after application; surface, groundwater, and soil contamination; air pollution; changes in hydrologic characteristics of the soils; and impacts on native flora and fauna populations. *See* Environmental Protection Agency, *Potential Environmental Impacts of Dust Suppressants: Avoiding Another Times Beach* § 3 (May 30-31, 2002). Third, while BNSF has a voluntary tariff encouraging the use of surfactants, STB proceedings evaluating that practice are ongoing. In the absence of binding regulation, many coal companies are electing not to apply any sort of topping agent. *See* Some shippers not complying with industry's coal dust tariff, *Platts Energy Week*, Nov. 3, 2011. As a result, the use of surfactants is not certain, and so the analysis of the impact of coal dust must consider scenarios both without and with any sort of surfactant use.

2. The Overall Economic Impacts of Coal Exports Are Likely Negative.

The EIS must further review the economic impacts of this project. Issues here include the impact of dramatic increases in coal train traffic on real estate values and damage to property from coal dust, diesel emissions, vibration, and noise. There are also serious concerns relating to the impact of an increase in coal rail traffic on other non-coal shippers of freight by rail, including ports and shippers of agricultural products. These same issues may dramatically affect passenger rail interests. These significant rail traffic increases are likely to create major impacts on communities affected by vehicle traffic problems related to delays at non-grade separated railway crossings, which will affect non-rail freight mobility, access to ports, retailers, tourist centers, and employers. On the marine side, there are likely to be significant economic impacts on marine dependent industries, such as commercial fisheries and shellfish growers, tourism, and other businesses.

a. The Project, Individually And In Combination With Other Proposed Coal Export Projects, Threaten Increases In Rail Traffic For A Single Commodity, With Major Impacts On Other Rail Users And Affected Communities..

The increased rail traffic associated with shipping unknown quantities of coal per year from Oakland could represent a huge increase in freight rail usage and would likely present significant conflicts with other users of the rail line, including freight and passenger shippers. It is critical that the EIS include a full analysis of the cumulative impacts from this proposal combined with other coal and fossil fuel export proposals in the region, including the capacity of the rail system to handle these increases without significant adverse impacts on other shippers, passenger rail users, and communities.

Unless mitigated with significant capacity additions, increases of coal train traffic is likely to present significant adverse impacts on other users of the rail line, including grain and fruit shippers, intermodal users, ports, industries, aircraft manufacturers and passenger rail—all of whom are critically dependent on timely and affordable access to the rail system. Existing state studies from the Northwest indicate that coal rail traffic is already having a significant negative impact on the ability of Washington State shippers to access markets where coal traffic from the Powder River Basin is dominating the rail lines; experts working for that State have concluded that "the high volume of coal trains moving east out of the Powder River Basin has made it virtually impossible to route time-sensitive intermodal trains moving from Pacific Northwest ports to central and southeast gateways such as Kansas City and Memphis through the near continuous flow of slow-moving coal trains. Adjusting to this, BNSF has shifted most intermodal traffic destined to locations south of Chicago to the Ports of Los Angeles and Long Beach." These reports also confirm that the railroad prioritizes unit trains, such as coal trains, over other shippers. The EIS should fully analyze the impacts on other types of shippers if inbound and outbound freight or passenger rail traffic is diverted or eliminated due to the competition with coal trains, such as agricultural products. Further, the EIS should look at impacts related to diversion of this freight rail traffic to other modes, including trucks and barges.

The EIS must also analyze impacts, mitigation measures and potential funding relating to the use of passenger rail on these same lines. The EIS must analyze how existing and expanded passenger rail uses will be impacted if freight traffic increases. The EIS should further consider existing and prospective public funding for rail capacity to purchase passenger rail service. The EIS should include all needed capacity improvements that will be required to address at least those areas where the planned coal train traffic will exceed the capacity of the existing system.

b. The Project Is Likely To Create Very Significant Impacts Relating to Rail Traffic In Dozens of Impacted Communities

Increases in freight rail traffic for coal export could result in significant adverse impacts on other traffic and freight mobility within affected communities. These traffic impacts cause direct economic losses to affected communities and businesses through interruptions of freight mobility, challenges for customers reaching businesses, and lost employee time. Air pollution impacts related to increased idling and congestion may also directly impact growth in affected communities. It is imperative that the EIS fully analyze these issues in all communities that are likely to be similarly affected along the entire corridor from the source of the coal to the Oakland export terminal.

The EIS must also look at necessary mitigation for these traffic and mobility concerns and the question of who will bear the costs of this mitigation. Under federal law, railroads are generally limited to paying no more than 5% of the costs of grade separated crossings. Typically, the railroad pays far less than that amount. Given that the costs of grade separated crossings to address these traffic issues are in the tens and hundreds of million dollars, the EIS must analyze any mitigation that is needed in response to the huge increases in coal train traffic associated with this project to ensure that the public does not pay for private benefits.

Right of way fires on the land of property owners along rail lines with coal trains are also a known safety and economic risk that must be analyzed. Last year, several coal-related fires occurred along a railway in North Dakota. Coal dust lodged in the ballast, and from constantly passing coal trains, kept the track fires smoldering for several days. As South Heart Fire Chief said, "When there is that much coal dust, there is not a lot we can do…you think you have it out…and then half-a-day later, it flares up once again."

Finally, it is particularly critical that the evaluation of rail impacts be placed in the context of cumulative effects from multiple projects, currently under consideration, that will dramatically raise the amount of train traffic in California. In addition to the other coal export terminals that will in part use the same lines as this one, there are numerous proposals to increase the amount of crude oil travelling by rail in California.[11] Together, these projects will add toxic and dangerous crude oil shipments to the already overcrowded rail lines. The EIS should evaluate the direct, indirect, and cumulative impacts of reasonably foreseeable projects, including crude oil, coal export, and liquefied natural gas terminals in California. This includes the cumulative impacts associated with rail traffic, vessel traffic, and associate pollution and public health impacts.

[11] *See*, *e.g.*, http://www.reuters.com/article/2013/11/07/tesoro-rail-crude-idUSL2N0IS13N20131107 ("U.S. refiner Tesoro Corp has tripled the amount of North Dakota Bakken oil delivered by crude-only trains to its northern California refinery since the first such shipment in September") (last visited on December 6, 2013); http://www.mysanantonio.com/business/article/Moving-crude-by-rail-works-for-refiners-4547720.php ("Valero hopes to have approval soon from local officials to ship North American crude by rail to its Benicia plant in Northern California and complete the project by year's end.") (last visited on December 6, 2013)

c. Coal Exports Threaten Nearby Property Valuations

Recent studies have indicated that the massive increases in coal train traffic induced by the proposed terminal may directly result in significant reductions in property values, affecting owners, other taxpayers, and affected communities. *See Increased Coal Train Traffic and Real Estate Values*, The Eastman Company (Oct. 30, 2012). The effect of freight railroad tracks and train activity on residential property values, Robert A. Simons, A. El Jaouhari (Summer 2004); *Examining the Spatial Distribution of Externalities: Freight Rail Traffic and Home Values in Los Angeles*, Futch, M. (Nov. 11, 2011). Given these findings elsewhere, it is clear that a substantial increase in rail traffic has important impacts that need to be assessed. The EIS should look at these issues along the entire rail corridor, using specific estimates of rail traffic associated with the project, as well as the cumulative impacts of other coal export facilities, oil and gas exports, and proposed crude-by-rail projects.

d. Impacts On Economies Dependent On the Marine Environment

There are likely to be significant adverse impacts and major risks posed to the San Francisco Bay aquatic ecosystem from this project. In addition to the impacts on ecosystems and to those who fish in the Bay for sport and food, these issues must be evaluated for the impacts and risks that they pose for marine related businesses and economies, including tourism and other related businesses. These businesses cumulatively provide significant amounts of revenue in positive economic impacts to the state and region. Impacts to other forms of recreation, e.g., boating, hiking, birding, should be closely analyzed.

e. Economic Uncertainty and Market Volatility Surrounding Coal Exports Must Be Considered In The EIS

Coal export facilities are speculative financial ventures. *See, e.g., Coal Export: A History of Failure for Western Ports*, VandenHeuvel, B. & E. de Place (Aug. 2011). Coal export terminals in Portland and Los Angeles were both shut down at significant taxpayer expense. One of the few terminals shipping thermal coal from the West Coast of the United States—located in Seward, Alaska—recently cutback operations and laid off workers citing adverse international market conditions.

Moreover, the EIS should examine the market uncertainty and volatility surrounding coal. Domestic demand for coal has fallen substantially since 2008, as U.S. electricity generators have turned to cleaner burning natural gas, renewable energy, and increased energy efficiency. The reasons for this change undoubtedly include the increasing environmental control costs for burning coal, as well as a growing recognition among companies and financial analysts that mining and burning coal to produce electricity is no longer a viable strategy to produce an acceptable return on investment. The EIS should analyze the extent to which these trends are being followed in the proposed export markets, including the trends to replace coal with renewables, efficiency, and natural gas for energy generation and the impacts on the long-term

prospects for this project. Potential domestic electricity pricing impacts to U.S. consumers from exporting coal should also be examined.

Simply put, since 2010, the global price for coal has collapsed and the putative justification for exporting to U.S. coal—a presumed insatiable demand for coal in China—has fallen apart. In fact, a June 2013 independent analysis, entitled *Asian Coal & Power: Less, Less, Less…The Beginning of the End of Coal* (Bernstein Research, 2013), flatly declared that China will cease importing coal in 2015 and may indeed become a net exporter once again. China's installation of clean, renewable energy, such as wind and solar, is booming.

The EIS should evaluate the risk that Oakland coal exports may join the other projects that have experienced economic failure, sometimes leaving significant clean-up liabilities, public expenditures, and unfulfilled expectations for local communities. The EIS should consider potential mitigation measures relating to these risks, including the need for the project proponents to post a bond or provide other security to ensure that communities and local governments are not left with the responsibility for site clean-up and other costs in the event of project failure.

3. The EIS Must Analyze Harm to Wildlife, Marine, and Aquatic Health.

The EIS must include an analysis of coal export-related impacts to biological, marine, and aquatic resources on both public and private lands and waters in the affected area, that is, in the area from the mining of the coal in the Powder River Basin (or Utah or Colorado), through the rail corridor to the project, through the loading and shipping of the coal through the San Francisco Bay and surrounding waters, to its final destination and combustion in Asia. Such resources include marine and terrestrial mammals, game and non-game resident and migratory bird species, raptors, songbirds, amphibians, reptiles, fisheries, aquatic invertebrates, wetlands, and vegetative communities. The agencies must ensure that up-to-date information on all potentially impacted flora and fauna is made available, so that adequate impact analyses can be completed. Habitat degradation, fragmentation, and loss must all be assessed, along with any resulting impacts to wildlife and marine species.

Stormwater is another critical concern, given the toxicity of the material being shipped, and the historic contamination of this brownfields site. The San Francisco Bay is already listed as impaired under the state's § 303(d) list, and under Ninth Circuit precedent, any additional discharge to such impaired water bodies is prohibited. Increased wildlife mortality from railroad and mining related activity (including, but not limited to, increased human conflicts, habitat loss, and increased hunting pressure) must also be discussed. Impacts to wildlife migration corridors must be evaluated.

Increased shipping traffic brings with it an increased risk of collisions, groundings, spills, discharges, and accidents during vessel fueling. For instance, the devastating Cosco Busan spill

in the Bay just a few years ago could become a more common occurrence.[12] Similarly, the potential for introduction of invasive species, including through ballast water, must be assessed, as tens of thousands of cubic meters of ballast water per visit will be discharged by the shipping vessels. Hull fouling presents a similar danger of invasive species introduction. All of these risks and impacts must be carefully scrutinized. And, it is particularly important for the agencies to evaluate increases in vessel traffic in the context of the cumulative impacts from multiple current and reasonably foreseeable fossil fuel-related projects.

VIII. THE EIS MUST ANALYZE A REASONABLE RANGE OF ALTERNATIVES, INCLUDING NO FOSSIL FUEL EXPORTS.

The range of alternatives ~~is~~ the heart of the environmental impact statement." 40 C.F.R. § 1502.14. It is well understood that ~~N~~NEPA requires that an agency _rigorously explore and objectively evaluate all reasonable alternatives.'" *Utahns for Better Transp. v. Dep't of Transp*., 305 F.3d 1152,1168 (10th Cir. 2002) *quoting* 40 C.F.R. § 1502.14(a), modified on rehearing *Utahns for Better Transp. v. Dep't of Transp*., 319 F.3d 1207 (2003). The alternatives discussed should provide different choices from which decisionmakers and the public can make an informed choice after considering the environmental effects of the alternatives. *See Westlands Water Dist. v. U.S. Dep't of Interior*, 376 F.3d 853 (9th Cir. 2004). The range of alternatives should also ~~—~~include reasonable alternatives not within the jurisdiction of the lead agency," and ~~-~~include appropriate mitigation measures not already included in the proposed action or alternatives." 40 CFR § 1502.14. In addition to the need for thorough consideration of the impacts of permitting fossil fuel exports, the EIS must consider the option of not including fossil fuel exports out of Oakland.

XI. THE EIS MUST CONSIDER THE ENVIRONMENTAL JUSTICE IMPACTS OF FOSSIL FUEL EXPORTS

All federal agencies are encouraged to consider environmental justice in their NEPA analysis, evaluate disproportionate impacts, and identify alternative proposals that may mitigate these impacts. The fundamental policy of NEPA is to ~~-~~encourage productive and enjoyable harmony between man and his environment." In considering how to evaluate progress in reaching these aspirational goals, the Council on Environmental Quality (CEQ) defined effects or impacts to include ~~-~~ecological...aesthetic, historic, cultural, economic, social or health impacts, whether direct, indirect or cumulative."[13] Recognizing that these types of impacts

[12] *See, e.g.,* http://www.fws.gov/contaminants/documents/coscobusan.pdf. The Cosco Busan cargo ship hit the Bay Bridge in heavy fog in 2007, resulting in the worst spill in the San Francisco Bay for 20 years, and significant fish and bird kills.

[13] CEQ, Environmental Justice: Guidance Under the National Environmental Policy Act, December 10, 1997, *available at* http://ceq.hss.doe.gov/nepa/regs/ej/justice.pdf.

might disproportionately affect different communities or groups of people, President Clinton issued Executive Order 12898 in 1994,[14] directing each federal agency to, among other things:

- "Make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations,"

- "Identify differential patterns of consumption of natural resources among minority populations and low-income populations,"

- Evaluate differential consumption patterns by identifying "populations with differential patterns of subsistence consumption of fish and wildlife," and

- "Collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence."

CEQ's Guidance for Environmental Justice under NEPA[15] called for agencies to consider specific elements when considering environmental justice issues:

- Agencies should consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed action, and if so whether there may be disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, or Indian tribes.

- Agencies should consider the potential for multiple or cumulative exposure to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards. Agencies should consider these multiple, or cumulative effects, even if certain effects are not within the control or subject to the discretion of the agency proposing the action.

[14] "Federal actions to address environmental justice in minority populations and low-income populations," 59 Fed. Reg. 7629 (Executive Order 12898; February 11, 1994).

[15] CEQ, Environmental Justice: Guidance Under the National Environmental Policy Act, December 10, 1997, available at http://ceq.hss.doe.gov/nepa/regs/ej/justice.pdf.

- Agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action. These factors should include the physical sensitivity of the community or population to particular impacts; the effect of any disruption on the community structure associated with the proposed action; and the nature and degree of impact on the physical and social structure of the community.

- Agencies should be aware of the diverse constituencies within any particular community. Agencies should seek tribal representation in the process in a manner that is consistent with the government-to-government relationship between the United States and tribal governments, the federal government's trust responsibility to federally-recognized tribes, and any treaty rights.

The EIS must examine the environmental justice impacts flowing from this project. The local community in West Oakland has suffered a long history of disproportionate impacts from pollution. The potential export of fossil fuel will only serve to exacerbate the existing environmental justice concerns in the area. The EIS must also study the rail transportation of coal from its source, and the mining of the coal. Tribes along the rail route and in the area of increased mining may also be impacted by the proposed railroad and the increased mining associated with this project.

The EIS must include demographic information for West Oakland and along the rail lines that would ship coal to the terminal, as well as at the mine sites. These environmental justice issues further underscore the need for a full EIS that includes a health impact assessment of the project.

* * *

Peter Lee
December 6, 2013

Thank you for your consideration of these scoping comments. As you are no doubt aware, there is likely to be an extraordinary level of public interest in the potential for fossil fuel exports out of the Oakland Army Base project and the Port of Oakland; the harmful impacts caused by the proposed coal exports will occur at the local, regional, and global scale; and the relevant federal and state laws emphasize a thorough, up-front review of all the environmental effects of proposed actions. We reiterate our request for a full EIS for the action under NEPA and that the project description be updated to reflect the whole of project, including the reuse of the entire Oakland Army base and that the impacts of fossil fuel exports to future Gateway Park visitors be fully disclosed analyzed and mitigated. We look forward to a Draft EIR/EIS that the full direct, indirect, and cumulative impacts of the proposed project from the mining of the coal at its source, the transport of coal by rail through several states and hundreds of communities, the loading and shipping of coal via large ocean vessels, to the combustion of the coal in Asia.

Sincerely,



Suma Peesapati, Staff Attorney
Earthjustice

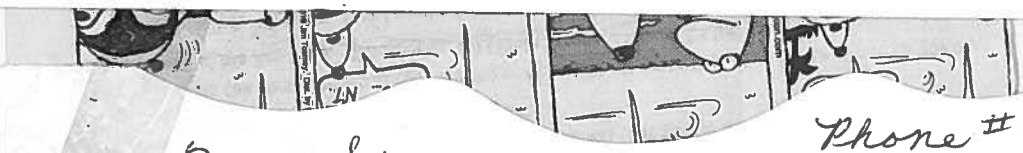
On behalf of:

Sierra Club
West Oakland Environmental Indicators Project
Communities For A Better Environment

Cc: City of Oakland
Port of Oakland

Mrs. N. Moss,
[redacted]

Bay Area Toll Authority
101 Eighth St.
Oakland, CA.
94607

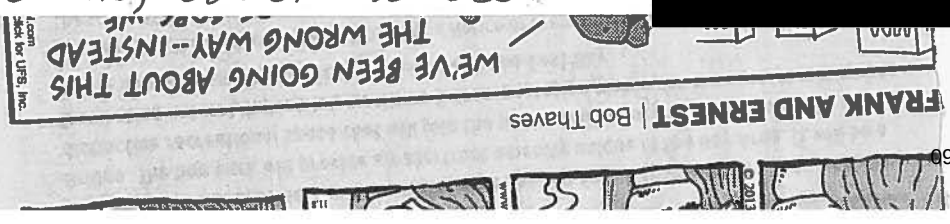


Phone # 792-8902

Dear Sirs:
Gateway Park sounds like it will be a great place in the city of Oakland!!. I worked at the Oakland Army Base for many years. Bldg # 465 was the office for the Motor Pool. I'll be interested in reading about it.

Mrs. Nicky Moss
Merrill Gardens
Apt. # 104
Fremont, CA
[redacted]

P.S. I have in my apt. a Certificate from the Army for my work there.



gatewaypark

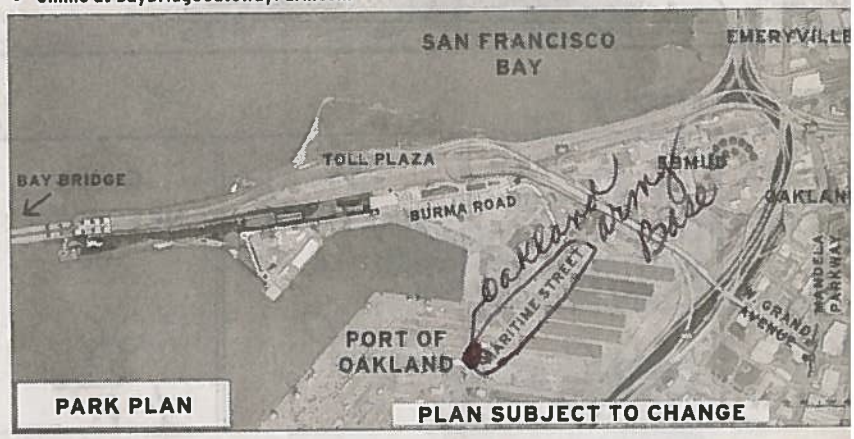
JOIN US FOR A PUBLIC MEETING NOVEMBER 14, 2013

TO PROVIDE INPUT ON THE GATEWAY PARK ENVIRONMENTAL ANALYSIS

Gateway Park will provide a new recreation area at the East Bay touchdown of the new Bay Bridge. The new park will provide a waterfront amenity unique in the Bay Area. It will be a distinctive recreational space that will join the power and beauty of the new span to the fascinating natural, industrial, maritime & transportation history of the area. It will create a bold new gateway to the City of Oakland and the East Bay.

The Bay Area Toll Authority (BATA) is issuing a Notice of Preparation (NOP) to solicit comments on the scope of the Environmental Impact Report/Environmental Assessment (EIR/EA) for Gateway Park. The NOP will be available from November 1 to December 6 at:

- MTC-ABAG Library, 1st floor of the Joseph P. Bort MetroCenter, 101 Eighth Street in Oakland
- West Oakland Library, 1801 Adeline Street
- Online at BayBridgeGatewayPark.com



The project team is hosting a public scoping meeting on Thursday, November 14, 2013 to begin the environmental review process for the project. This meeting will be an open house with informational exhibits around the room. Members of the project team will be available to answer questions. We invite you to attend to receive information on the current project design and provide your comments on the scope of the environmental review, including potential impacts that should be analyzed in the environmental document, alternatives that should be considered, and input on mitigation measures that might address impacts.

Comments can be submitted at the meeting or by sending them to Peter Lee at PLee@mtc.ca.gov o via mail at the Bay Area Toll Authority, 101 Eighth Street, Oakland, CA 94607.

Please include "Gateway Park Scoping Comments" in the subject line.

Comments are to be received by December 6, 2013.

MEETING DETAILS:
Thursday, November 14, 2013 | 3:30-7:30pm | Open House Format
West Oakland Senior Center, 1724 Adeline Street, Oakland, CA
This meeting is ADA accessible. For special needs requests or questions regarding the meeting, please contact Karin Betts at kbetts@mtc.ca.gov or (510) 817-5725.

Si desea esta información en español, visite baybridgegatewaypark.com

如果您想查看此資料的中文版，請瀏覽 baybridgegatewaypark.com

Gateway Park Working Group:

gatewaypar

To learn more about the project please visit: BayBridgeGatewayPark.com

To: EIR Committee: Peter Lee at PLee@mtc.ca.gov

Cc: Denis Cuff, Bay Area News Group

From: Joe Moran sr."[redacted]

Date: December 6, 2013 3:48 PM

Attachments:
exh. 1 proposal mtc
7:9:13 https://docs.google.com/file/d/0B6FzITBRccz1V1lwTTJhTXR0UFk/edit?usp=drive_web
exh. 2-ltr MTC
8:20:13 https://docs.google.com/file/d/0B6FzITBRccz1OEZaLTlNX2FXYjA/edit?usp=drive_web
exh. 3 update
11:12:13 https://docs.google.com/file/d/0B6FzITBRccz1WVZtZmxXckFEV28/edit?usp=drive_web

Subject: Proposed EIR for Gateway Park

My EIR recommendation covers both the *physical* environmental impacts, e.g., water pollution, air quality, and toxic materials, plus the, perhaps more important, *human* environmental impacts on the surrounding communities and the Bay Area.

Attached are copies of proposals and comments I have made to the MTC Commissioners and the MTC management over the last seven months. Together they explain in detail the concept proposal to repurpose the east span to meet socially-desirable community non-traffic needs, as other cities have done, e.g., Paris, NYC, Chicago, Seattle, St Louis, instead of demolishing it - as is currently being done by Caltrans.

As a very quick review:

I met for several hours with Mayor Amy Worth (Orinda), the MTC Commission Chair, in June, 2013 to discuss my repurposing concept for the east span vs. demolition.

Immediately after what I perceived a very productive meeting, she arranged for me to meet with MTC Deputy Executive Director - Operations, Andrew Fremier, and Ms. Karen Betts from the MTC Legislation and Public Affairs Department. At that meeting they both listened courteously, ventured very few questions, and did not address proposal content or rationale. Mr.
Fremier, soon after the meeting began, flatly stated that repurposing simply would not be considered by MTC or Caltrans and that demolition plans could not be stopped. He said a small platform, perhaps 30 feet high, on YBI east shoreline might be erected so visitors could visualize what the original span was like. That idea was not thrilling.

Since the MTC senior operations management had already summarily dismissed any repurposing consideration, I am a bit concerned my EIR suggestions might not reach the full EIR committee, especially the Gateway-Park East Bay Regional Park management whose interests dwell on preservation, recreation, community open-space, safe hiking, biking, strolling, and other non-traffic societal needs.

My EIR proposal:

*Halt the east span demolition, at least for the Skyway portion that is not currently being demolished by Caltrans to seriously review alternatives.

It can just sit there awaiting study for non-traffic usage by others than Caltrans, whose mission is only traffic related.*

*The span can be realistically reconfigured to host: *

Music/food/arts festivals, concerts, urban markets/farms, museums, galleries, restaurants, coffee shops, sports events, retail booths, re-configurable and unique work-lofts, start-up incubator centers, bike/strolling/jogging paths, chess tables, food-truck areas, movie/TV sets, community events, view-sites, skills learning center, beer/wine/spirits tastings, safe play-areas for city kids (no drive-bys), ready access for disabled and older folk who have difficulty visiting our hilly parks, a culinary school, solar/wind testing site, boutique hotels, and on and on. With plenty of parking and space for electric transport vehicles for site treks, e.g., segways.

Demolition precludes such community use of this existing State-owned asset.

Suggestion to EIR committee:

*Call a concept discussion meeting-group composed of the parties having the greatest economic and community interest. They would have the task of weighing the advisability of repurposing this iconic structure vs. Caltrans normal policy of demolishing unneeded roadway assets. *

Suggested attendees (partial): Mayors of bridge adjacent cities, MTC management and MTC Commission representatives, community leaders, recreation groups (bike, hike, festival, concert, etc.), plus our unmatched trove of world-leading Bay Area business visionaries, e.g., of the caliber of an Elon Musk, Larry Ellison, George Lucas, Jed York, (the list can go on and on)

*Make it world-class destination venue all by itself. It has 1,500,000 sq. ft. of flat space awaiting. Once traffic transfers to the new bridge there would be no traffic vibration/weight stress on the original span. *

To destroy this true icon would truly be a tragedy - an unnecessary one at that. The span can be readily repurposed as a world-class, completely non-traffic linear park, economic and business venue, permanent job creator of thousands of jobs, recurring revenue producer for local and State government, safe areas (no traffic, great parking, no drive-bys, protected night-time walking/visiting area) to bike (circular route connecting the new park, the new bridge bike/pedestrian path and the original east span), picnic, stroll, play, exercise, educate, job-train, attend street-fairs, etc.

While the complete east span from the Oakland landfall to Yerba Buena Island would be a most feasible park, the original Skyway portion,from Oakland to the original cantilevered section (now being demolished), - south of the new Self-Anchored-Suspension section - would still be a world tourist attraction and economic hub, especially for the East Bay adjacent communities, many in need of revitalization - and jobs, and without many apparent ways to insure economic growth.

Physical environmental effect: The bridge, like any large public structure built prior to the 1980s, used an enormous amount of asbestos, lead, petroleum-based asphalt, and other toxics. There is not much risk as long as it not disturbed. Normally when a building is demolished that contains asbestos, etc., tarpaulins and other protective coverings contain the microscopic fibers. The east span will be demolished over our windy bay over a period of 3-7 years, according to Caltrans. There is no feasible way to insure fiber-containment on such a large scale demolition. There has also been much spillage of paint, brushes, buckets, asphalt, etc. over 76 years of constant 24/7 painting. The buried toxic items are safe unless disturbed - the bay floor is to be dug up under the bridge to remove the massive bases and things that have fallen from the bridge. Asbestos micro-fibers float a long way and are easily ingested by large segments of our crowded Bay community population.

Should there be a major quake during the 3-7 year demolition timeframe while the structure is being (purposely) structurally weakened there is risk of collapse. Then what do we do with the remaining structure at the bottom of the Bay with asbestos, lead, etc?

Consider also what is to be done with the toxic-filled roadbed and asbestos/lead-paint covered steel. It will be buried. Consider the amount of steel in just the east span equaled 6% of the entire steel output of the country in 1933. That's one big toxic landfill, risking our aquifers.

Human Environmental effects: Any EIR should have a priority for its effect on the quality of life, especially of the communities on the East Bay shore area. Lord knows West Oakland, the surrounding neighborhoods of Oakland downtown, and rest of Oakland - and Alameda - need economic revitalization, realistic chances at thousands of new and permanent jobs (demolition jobs are temporary by definition).

Repurposing the Skyway can be the catalyst to attract new jobs, safe play areas, urban farms, festivals to rival anything in the World, a classic walking and biking-venue safe from cars, an educational environment, a place for wind, solar, and other sustainable experimentation, a start-up business climate to outmatch Silicon Valley for talent-draw.

Demolition will provide temporary jobs for a few workers. The demolition budget is $250,000,000 (based on the past bridge estimates, this could easily reach $1billion). This money could be used, combined with major funding from some of our Bay Area business builders and investors, to further strengthen the structure - it has been greatly strengthened since Loma Prieta - and have this economic hub ready by Super Bowl 2016. As a bonus, the revenue stream continues yearly. The economic effects of demolition end after teardown.

The critical factor in my repurposing concept is seismic safety, i.e., is the span physically safe enough to retrofit for non-traffic community social and economic purposes. The short answer is yes it is. That is not simply an opinion. My proposal makes extensive use of Caltrans publicly-available records and commentary to make the sound argument that it is safe and can be made even safer through a public/private/community financial and management arrangement. Consider that Loma Prieta quake
(7.1 in magnitude) happened in 1989, injured or killed no one on the bridge, and only one 50 ft. section of the upper deck slipped off its holding shelf on one side (.2% of the east span roadbed) and was back in full daily traffic operation until formally closed in Sept. 2013 when the new span opened. Consider also the sudden move of all traffic to the new span removed 800,000 to 1-million tons of weight, plus traffic vibration per day from the old span.

As a final comment, perhaps the East Bay Regional Park District might be appointed to take the EIR lead in considering the fate of the original east span as an extension of the Gateway Park. Its mission is not traffic oriented as is Caltrans and MTC. The old east span future should involve a decision between demolition and repurposing as is suggested here. Much of the retrofitting has already been done.

From: "Paul Shain [redacted]

Date: December 3, 2013 at 6:12:42 PM PST

To: "Peter Lee" <PLee@mtc.ca.gov>

Subject: Gateway Park Scoping Comments

Dear Project Team,

Thank you for opportunity to provide imput into the design decisions concerning this important gateway to the bridge.

My desires are:

- To encourage public access to the shoreline
- To protect habitat on the north side of the Bay Bridge at Little Radio Beach
- TO PREVENT ELECTRONIC BILLBOARDS FROM BEING INSTALLED ADJACENT TO THE PARK.

Thank you for your consideration.

Paul Shain
[redacted]

From: Alan Carlton [redacted]

Date: December 4, 2013 at 2:00:29 AM PST

To: Peter Lee PLee@mtc.ca.gov

Subject: Gateway Park

Reply-To: [redacted]

I live in Alameda and support Gateway Park. The park should encourage public access, protect the shoreline, especially at Radio Beach, and not allow electronic billboards. Our remaining shoreline must be protected and preserved for all to enjoy.

Alan Carlton
Attorney at Law

Alan Carlton
[redacted]

From: [redacted]

Date: December 4, 2013 at 1:01:45 AM PST

To: Peter Lee PLee@mtc.ca.gov

Subject: Gateway Park

I heartily endorse the proposed Gateway Park plan.

As one who is accustomed to commuting to San Francisco from Berkeley amid the jumble of traffic, a park area would be soothing to look at and hopefully accessible to walk.

Whatever happens, please KEEP THIS AREA FREE OF BILLBOARDS.
KEEP THE AREA FREE OF METAL FENCING.

I think of a parkway outside of New York City as the ideal way of dealing with a park and nearby cars. The commuter needs a visual break and a landscape to calm their jangled nerves.

Please help make this happen.

Best,

Joan Ominsky
Berkeley, CA

From: "Jean [redacted]

Date: November 14, 2013 at 5:36:16 PM PST

To: "Peter Lee" <PLee@mtc.ca.gov>

Subject: Gateway Park alternatives public comment

Gateway Park looks wonderful: just please make clear on the maps ALL the routes to walk, bike, and bus there, as access appears to be through no-mans-land freeway terrain and I have seen nothing to indicate where I could come by transit nor by parking a car to enjoy this lovely park idea.

Yes please do whatever possible with green growing plants to suck up polluted air: I live near a freeway intersection in Greenbrae and for this park to be lovely it MUST be buffered from SOUND as well as BAD AIR from freeways.

Yes to kayak launch but show where you can bring a vehicle to offload the kayaks if possible. Or do you just get there by sea? High wind area on the water, so please pay close attention in design of the takeout to shelter from prevailing winds fetch which produce dangerous waves. Have you connected with the Water Trail group to get their awesome expertise as input on the proposed kayak facilities?

Best wishes,
Jean Severinghaus

From: Sarah Picker [redacted]

Date: November 20, 2013 at 11:16:40 AM PST

To: Peter Lee PLee@mtc.ca.gov

Subject: Gateway Park

Good morning Peter,

My concern about the park is that shuttles to and from Bart and/or at the park are not necessary. An alternative would be an AC Transit line to the park being funded and maintained into perpetuity. Why create a shuttle service/organization when AC Transit already exists?

Please use existing institutions for this park. I am an Oakland resident and rental housing provider for over 20 years. Thank you for the opportunity to comment.

Sarah Picker

Bradley Cleveland
[redacted]

20 November, 2013

Peter Lee, Project Manager
Bay Area Toll Authority
plee@mtc.ca.gov

Re Gate Park Scoping Comments

I attended the 14 November open house, and took a bike tour of the area last weekend to get a sense of the site. My comments address two major concerns:

I. Access to the site, and
II. The park itself.

I. Park Access

The new park promises to be popular, as demonstrated by the number of people who make the trek through the undeveloped site in order to walk the new bridge. A major challenge will be to offer safe, easy access for pedestrians and bicyclers. I support:

1. Connect the new park not just to West Oakland, but existing parks in Oakland and Emeryville, to the existing and future sections of the SF Bay Trail and "water trail," and to Oakland's bike network.
2. Development of off-road bike/ped path, and elevated stretches over key intersections. This can be accomplished by paving parts of the unpaved shoulders along streets in the port area, including, but not limited to Maritime Street between the current Middle Harbor Shoreline Park and the Gateway Park.
3. Elevated paths over busy intersections. This would not only insure safe passage for pedestrians and bikers, but could offer stunning views of the working port. As the old bridge is dismantled, it would be great to salvage sections of the old bridge for these elevated overpasses.

II. Gateway Park

Given the constraints of the site, related to its location between one of the west coast's busiest ports and heavy-trafficked Bay Bridge, it is likely to become more of a "way-station" for people walking the bridge, rather than destination in and of itself. I suggest that features of the site address the site's noise and pollution, while educating visitors about the bay, the port and the site's history.

1. Use green infrastructure, such as bioswales, rain gardens, and permeable pavement to manage and cleanse stormwater; this water can also be used to irrigate the landscaping.
2. Minimize the use of shoreline "armoring," in order to restore natural functioning of tidal flats. Where it is required, enhance its effectiveness and extend its life with green infrastructure such as tidal wetlands and oyster reefs.
3. Mitigate noise and pollution, and create wind breaks by installing trees south of the bridge entrance.
4. Minimize the use of lawns, and maximize the use of native plants appropriate for the site.

5. Use active and passive solar solutions to meet the site's reduced power needs.
6. Use the site's historic buildings to create an attractive "rest stop" for visitors. The "warming hut" in the Presidio, between Crissy Field and the Golden Gate Bridge offer a model for the park.
7. Concentrate site "programming" to the south side of the park, but locate the boat landing on the north side. Work to re-naturalize the north section north of the park, which will enhance the experience of those boating the bay.
8. Enhance shoreline access and view lines looking south, west and north.
9. Eliminate all the billboards in this area to remove this visual blight.

Finally, I have one question. What are the plans for the buildings at the southwest point of the site?

I look forward to learning more about the park. Thanks for your time.

Sincerely yours,

Bradley Cleveland

Karl [redacted] wrote:

> I would really like to see an adult playground with various artistic metal climbing junglegym/ sculptures.
> Like Burning man, but specifically designed for a good workout and playful exploration. I have always been a climber, from trees to rocks to mountains. I've stayed youthful and strong through continually exploring and climbing whatever I can, and am always depressed in cities as there is little to readily climb, except kid's playgrounds which make me look silly and scare parents. And climbing architecture has gotten me in trouble.
>
> Big Burning man art showed me what's possible in a new world.
>
> I don't believe we stop playing because we get old, rather we get old because we stop playing.
>
> Thank you
>
> --
> PeaceLoveanDragonsblood~
> (livegivereceiveconceive
> inspirengageinvoke.
> respectconfessaddressyourmess
> anbeyourbadassbeautifulself)
> **ZOR~**
> [redacted]

From: "Donald, Patricia" [redacted]

Date: November 26, 2013 at 3:36:07 PM PST

To: "Peter Lee" <PLee@mtc.ca.gov>

Subject: Gateway Park scoping comments

Reading through these reports shows me that there are a couple of areas you might want to look into.
I work for the City of Berkeley and run the Adventure Playground and the environmental education center and international shoreline clean-up at the Berkeley marina. I created these programs 35 years ago. My suggestions to you come from experience.

Please think about all the shoreline locations in reference to trash that blows across the bay and ends up on your shorelines.
Along with global warming and sea level rise, until we stop using plastic and people stop littering, you will need to deal with this visual blight.

In 29 years of running shoreline clean-ups along the east shore, I have learned that the location that trash collects (according to size and weight) and season – Winter storms usually come from the south and summer and fall winds are usually from the south west.

I have also learned that there are literally thousands of people who, if asked will come and pick it up for free! Students need community service credit. People just want to be needed. So to help this happen:

1. Where there are already areas where trash collects, “pockets “, please provide access to be able to clean it up.

2. If you have to redesign the shoreline, create pockets where trash can collect and access point where it can be removed.

3. Have covered trash cans nearby.

I am trying to have my do it yourself clean-up stations built. I have a design, just waiting for grants.

Another misconception I might share with you:

1. There are no tide pools on the east shore. This is a mudflat and wetland area. If you put rip rap rocks around, animals will attach to the rocks and inside harbors and attached to pilings you will find invertebrates but your tide pools will fill with mud. Come see ours at the Berkeley Marina they filled with mud.
Teaching marine science is what we do and can give you some ideas Studying mudflat animals and wetland animals is just as exciting and more important to teach about location we are an estuary Not a Bay inside the golden gate.

I run the Adventure playground and deal with massive groups each weekend, so if you want information with
Not sure if this helps. Call me if I can help.

Patty Donald, Coordinator
[redacted]

gatewaypark

COMMENT FORM

Please leave your comments with staff during the meeting or mail it to:

Peter Lee, Project Manager
Bay Area Toll Authority
101 Eighth Street
Oakland, CA 94607

RE: Gateway Park Public Scoping Meeting Comments

You can also email your comments to plee@mtc.ca.gov. Please include the words "Gateway Park Scoping Comments" in the subject line.

Name: Robert Prinz Date: 11/14/2013

Affiliation (if applicable): East Bay Bicycle Coalition

Address:

Email: [redacted]

Comment: - coordinate with EBOT (E'ville/Berkeley/Oakland Transit) study people on potential shuttle/transit access to park, or with planned Emery-Go-Round extension to W. Oakland BART
- provide Dero bicycle Fix-it station in park area for simple repairs, filling tires
- reclaimed materials art installations could be built by folks from the Crucible in W Oakland, or by artist responsible for driftwood sculptures @ Albany Bulb

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

gatewaypark

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RE: Gateway Park Public Scoping Meeting Comments

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Name: Amelia Lopez Date: 11/14/13

Affiliation (if applicable): AD15, office of Assemblymember Skinner

Address: [redacted]

Email: [redacted]

Comment:
along w/ the other questions I asked earlier... what are the interim plans to make the trails / bike path more people friendly (ie. water fountains / restrooms)? and how is public outreach occuring for advertising usage / parking for the space? ppl are often using Emeryville store parking, due to unknown alternative options. The path is 2+ miles w/o water access + only one restroom station... is this considered adequate?

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(Please continue on back if necessary)

gatewaypark

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RE: Gateway Park Public Scoping Meeting Comments

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Name: SANDY THRELFALL Date: NOV 14, 2013

Affiliation (if applicable): WATERFRONT ACTION

Address: [redacted]

Email: [redacted]

Comment: WATER TAXIS TO GET PEOPLE OUT TO THE TIP of the PARK

CLEAR EDUCATIONAL SIGNAGE - ESPECIALLY AT ENTRANCE TO RADIO BEACH

HISTORIC SIGNS WITH OLD PHOTOS -

Go to: www.waterfrontaction.org and check out Historic Map & photos.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

gatewaypark

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RE: Gateway Park Public Scoping Meeting Comments

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Name: David Grieshaber Date: 11/14/13

Affiliation (if applicable): Bay Bridge house

Address: [redacted]

Email: [redacted]

Comment: Please talk to our organization about incorporating in our project.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

East Bay Regional Park District PORT OF OAKLAND EBMUD

gatewaypark

COMMENT FORM

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Peter Lee, Project Manager
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Oakland, CA 94607

RE: Gateway Park Public Scoping Meeting Comments

You can also email your comments to plee@mtc.ca.gov. Please include the words "Gateway Park Scoping Comments" in the subject line.

Name: Glenda Bamhart Date: 11/14/13

Affiliation (if applicable): East Bay Bicycle Coalition + Bay Area Bikes

Address: [redacted]

Email: [redacted]

Comment: I would like to see various proposals presented to connect to the bike pathway from the W Grand Ave / Mandela Parkway area.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

East Bay Regional Park District PORT OF OAKLAND EBMUD

gatewaypark

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Oakland, CA 94607

RE: Gateway Park Public Scoping Meeting Comments

You can also email your comments to plee@mtc.ca.gov. Please include the words "Gateway Park Scoping Comments" in the subject line.

Name: Glenda Barnhart Date: 11/14/13

Affiliation (if applicable): EBBC (East Bay Bicycle Coalition) + Bay Area Bikes

Address: [redacted]

Email: [redacted]

Comment: It would be great to see a bicycle "pump track" built under one of the overpasses. This gives a creative use to dead, ugly, illegally-utilized areas.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

East Bay Regional Park District PORT OF OAKLAND EBMUD

gatewaypark

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Oakland, CA 94607

RE: Gateway Park Public Scoping Meeting Comments

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Name: JEAN ROBERSON Date: 11-14-13

Affiliation (if applicable): E.B. CNPS

Address: [redacted]

Email: [redacted]

Comment: main concern is to protect + preserve the integrity of the eel grass beds + the marsh. This supports bird, etc life as well as the ~~natural~~ native plants. Definitely in favor of NO dogs on N. side of peninsula + V.V. limited 'launching' of crafts on N. side (how to limit access, ~~to~~ rather than increase it - to more people, dogs, windsurfers, feral cats, etc.).

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary) Thank you

gatewaypark

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101 Eighth Street
Oakland, CA 94607

RE: Gateway Park Public Scoping Meeting Comments

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Name: B. Fong Date: 11-14-13

Affiliation (if applicable): Resident

Address:

Email: [redacted]

Comment: Great plan but there should definitely be a separate, safe bike path on grand ave or the streets leading to the park and access to Bay Bridge, especially when bike people use bikes to commute to S.F.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

gatewaypark

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RE: Gateway Park Public Scoping Meeting Comments

You can also email your comments to plee@mtc.ca.gov. Please include the words "Gateway Park Scoping Comments" in the subject line.

Name: Glenka Barnhart Date: 11/14/13

Affiliation (if applicable): East Bay Bicycle Coalition + Bay Area Bikes

Address: [redacted]

Email [redacted]

Comment: Love, love, love the idea of keeping parts of the old bridge deck as a fishing pier! Maintains the legacy of the bridge, keeps a hold of history (think historical bldgs), will provide a great view of the new bikepath, too.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

East Bay Regional Park District PORT OF OAKLAND EBMUD

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Name: ADAM LESSIK Date: 11/14/13

Affiliation (if applicable): CivicorPS

Address: [redacted]

Email: [redacted]

Comment: The plans should address an emphasis on training and employing local Oakland youth in the development + maintainence of the park. Utilizing local job training programs should be a priority.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

East Bay Regional Park District PORT OF OAKLAND EBMUD

gatewaypark

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Oakland, CA 94607

RE: Gateway Park Public Scoping Meeting Comments

You can also email your comments to plee@mtc.ca.gov. Please include the words "Gateway Park Scoping Comments" in the subject line.

Name: Amelia Lopez Date: 11/14/13

Affiliation (if applicable): AD15

Address: [redacted]

Email: [redacted]

Comment:
great Displays / Discussions

What is plan for Bathrooms / family Bathroom and water fountains; how paying for items
what would be timeline for these items - when would they be available for use

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

gatewaypark

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RE: Gateway Park Public Scoping Meeting Comments

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Name: JESS HOBBS Date: 11.14.13

Affiliation (if applicable): FLUX FOUNDATION

Address: [redacted]

Email: [redacted]

Comment: RE: SAWTOOTH BUILDING - WILL THIS BE PUBLICALLY ACCESSIBLE? WILL IT BE USED FOR EVENTS OR ~~THE~~ AS A MUSEUM?

WILL ARTISTS OR A COALITION OF ARTISTS BE INVOLVED IN ~~THE~~ THE PARK DEVELOPMENT?

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

gatewaypark

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Oakland, CA 94607

RE: Gateway Park Public Scoping Meeting Comments

You can also email your comments to plee@mtc.ca.gov. Please include the words "Gateway Park Scoping Comments" in the subject line.

Name: Sharon Fleming Date: 11/14/13.

Affiliation (if applicable): Bay Area Sea Kayakers

Address: [redacted]

Email: [redacted]

Comment:

Re Kayak Beach – Great! and sandy bottom is even better!

- Try to develop a loop that cars can use to drop off & pick up kayaks (5–10 min max), then park further away when on-the-water.
- Carry distance for kayaks should be minimized to 100–200 ft.
- Top south of beach, if to south, should not be a hazard to kayakers.
- Showers are not needed, but grass & sand (rather than rocks) should be available for setting down boats for loading etc.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

013

gatewaypark

COMMENT FORM

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Peter Lee, Project Manager
Bay Area Toll Authority
101 Eighth Street
Oakland, CA 94607

RE: Gateway Park Public Scoping Meeting Comments

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Name: Ken Mannshardt Date: 11/14/13

Affiliation (if applicable): Bay Area Sea Kayakers

Address: [redacted]

Email: [redacted]

Comment: We always need more good Kayak launching spots along the bay. All that is needed is a sandy or gravel beach with nearby parking. An outhouse or portapotty would be nice. And we all love clean, secure areas. I also paddle in the evening a lot. So I often come back in after sunset.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

gatewaypark

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RE: Gateway Park Public Scoping Meeting Comments

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Name: Dave Campbell Date: 11.14.13

Affiliation (if applicable): East Bay Bicycle Coalition

Address: [redacted]

Email: [redacted]

Comment: Please keep old bridge as structure for pier!!!

Love the project!

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

East Bay Regional Park District PORT OF OAKLAND EBMUD

gatewaypark

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RE: Gateway Park Public Scoping Meeting Comments

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Name: Penny Wells Date: 11/14/13

Affiliation (if applicable): Bay Access - SF Bay Water Trail

Address: [redacted]

Email: [redacted]

Comment:

Kayak access:

(1) Needs automobile (drop off) access to kayak beach. 100 yard carry is too far. On site storage at visitor center is a great idea! Having a hose to wash down boats is nice but not necessary. Security may/may not be an issue. Having a "presence" in the form of a club or non-profit would help.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

gatewaypark

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RE: Gateway Park Public Scoping Meeting Comments

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Name: Cameron Wilson Date: 11/14/13

Affiliation (if applicable): Citizens for East Shore Parks / Prescott-Joseph Center

Address:

Email: [redacted]

Comment:
Preserve Radio Beach sensitive areas.
Hire local for the project.
Preserve historic buildings
Less impact on the bay the better.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

gatewaypark

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RE: Gateway Park Public Scoping Meeting Comments

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Name: Ellen Wyrick Parkinson Date: 11-14-2013

Affiliation (if applicable): for West Oakland Library Committee

Address: [redacted]

Email: [redacted]

Comment: We need West Oakland People to be on Committee for the Beautiful Park. So Please Keep me on your Mailing List.

Ellen Wyrick Parkinson
[redacted]

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

East Bay Regional Park District · PORT OF OAKLAND · EBMUD

gatewaypark

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RE: Gateway Park Public Scoping Meeting Comments

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Name: Bill Aboudi Date: 11/14/13

Affiliation (if applicable): OMSS

Address: [redacted]

Email: [redacted]

Comment: Concern about the truck traffic conflict mitigation plans and outreach to the 10,000 + workers in the Port area.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

East Bay Regional Park District · PORT OF OAKLAND · EBMUD

gatewaypark

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Oakland, CA 94607

RE: Gateway Park Public Scoping Meeting Comments

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Name: RAY KIDD Date: 11/14/13

Affiliation (if applicable): WEST OAKLAND NEIGHBORS

Address: [redacted]

Email: [redacted]

Comment: THERE ARE TWO THINGS THAT WOULD GREATLY ENHANCE THE POPULARITY & VITALITY OF THIS PARK:

① A DOG PARK AREA, PREFERABLY ADJACENT TO WOOD ST. THERE IS NO DOG PARK IN WEST OAKLAND BUT THERE IS A HUGE DEMAND HERE & IN NEIGHBORING AREAS.

② A BIKE/FOOT PATH FROM THE VICINITY OF THE EBMUD PLANT THAT GOES ALONG UNDERNEATH THE FREEWAY & GOES TO 7TH ST (OR AS NEAR AS POSSIBLE) & CREATES A FRIENDLY CONNECTION TO THE TRAIL THAT GOES TO MIDDLE HARBOR SHORELINE PARK, THAT BEGINS AT 7TH & MARITIME

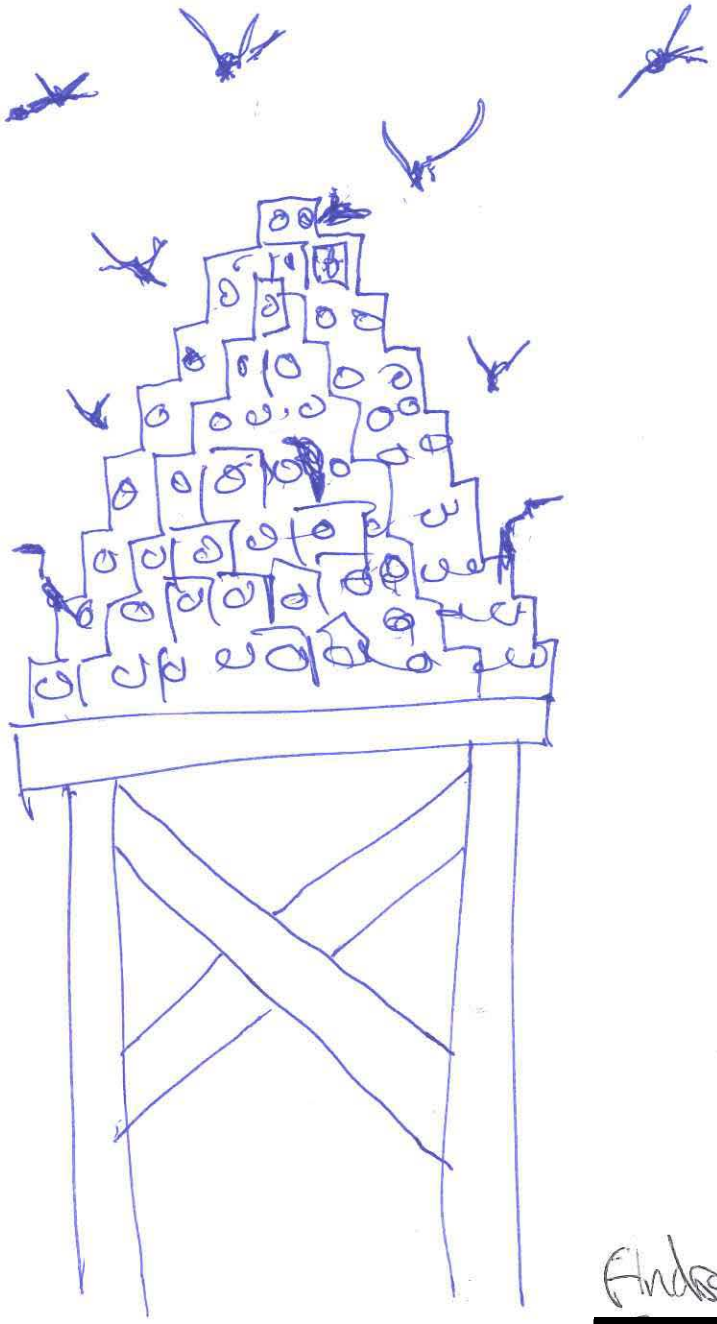
For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

East Bay Regional Park District PORT OF OAKLAND EBMUD

The old bridge was a haven for nesting birds, which will all be displaced when it's torn down. Why can't some of the pilings be spared and a big bird apartment house be built on the spot, like an artificial island safe from predators? I know the new bridge has had some shelving installed underneath that's supposed to accommodate the hundreds of cormorants and other waterfowl currently nesting on the old bridge. But so far, they haven't shown any interest in living there.

An artificial island with scientific input to design nesting sites that actually attract birds will keep this project from being yet another environmental disaster for the Bay Area. Isolated islands have always been preferred for roosting sites, since they are protected from predators and disturbances. Establishing one in the Bay would keep this bridge demolition project from triggering the devastating "unintended consequences" that seem to have characterized our interactions with the local environment for the last few centuries.



Andrew Werby

[redacted]

gatewaypark

2nd sheet

COMMENT FORM

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Oakland, CA 94607

RE: Gateway Park Public Scoping Meeting Comments

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Name: Fleming Date: 11/14/13

Affiliation (if applicable): BASK

Address: Kensington

Email: [redacted]

Comment: "Fishing pier" - I like the idea of leaving some of the supports in place from the "old" bridge. These could serve as "destination" spots for kayakers - sort of like the remaining parts of the old Berkeley pier do. Maybe add some "plaques" with historical info on these supports?

(over)

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

(Continued)

Note that long floats fishing lines can pose a hazard for kayakers — especially if the water is turbulent.

Thank you for your participation!

gatewaypark

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RE: Gateway Park Public Scoping Meeting Comments

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Name: STAN LOWE Date: NOV 14, 2013

Affiliation (if applicable): WEST OAKLAND COMMERCE ASSOCIATION

Address: [redacted]

Email: [redacted]

Comment:

1) FOOTBRIDGE FROM RADIO BEACH TO TRACER VIC'S IN EMERYVILLE NOT GIVEN DUE CONSIDERATION (FIRST PROPOSED BY JUDGE SUTTER AT ONSET OF GATEWAY PARK PLANNING PROCESS).

2) WORD "POTENTIAL" LACKING IN "POTENTIAL CONFLICTS"

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

(Continued)

BETWEEN BICYCLE + TRUCK TRAFFIC...") NEED TO BE CHANGED TO "LIKELY."

(3) THE TRANSPORTATION MUSEUM AT THE OLD BRIDGE MAINTENANCE SHED ADJACENT TO THE TOLL PLAZA NEEDS TO BE REVISITED AS JUSTIFIABLE MITIGATION of WEST OAKLAND'S LOSS OF COMMERCIAL CAPICITY DUE TO BRIDGE CONSTRUCTION! SENATOR MARK DESAULINIER'S RECENT COMMENTS REGARDING COST OVERRUNS, TO WIT: "WE WOULD NEVER HAVE VOTED FOR FUNDING THE BRIDGE HAD WE THOUGHT IT WAS GOING TO GO SO FAR OVER BUDGET" DOESN'T MATCH AMPLE TESTIMONY BEFORE M.T.C., CALTRANS AND OTHER BRIDGE-BIASED FORUMS, TESTIMONY FROM WOCA + OTHER WEST OAKLAND GROUPS AS TO THE NEAR-CERTAINTY OF SUCH OVERRUNS AND ITS NEGATIVE EFFECT ON LOCAL BUSINESS.

(4) ARTS COMMUNITY IN WEST OAKLAND NEEDS TO BE BETTER REPRESENTED WITH STATUARY + OTHER ART OBJECTS MADE BY LOCALS TO INDICATE THE EMERGING ~~AT~~ WORLDWIDE GATEWAY TO THE EPICENTER OF INDUSTRIAL ARTS.

Thank you for your participation!

gatewaypark

COMMENT FORM

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Oakland, CA 94607

RE: Gateway Park Public Scoping Meeting Comments

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Name: Barbara [redacted] Date: 4/14/13

Affiliation (if applicable): —

Address: Hayward

Email: [redacted]

Comment:

Very nice layout for this public meeting — right from the directional signs coming in to room set up.

The plan seems to be moving along. It is great to see so many agencies/interests working together.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

East Bay Regional Park District · PORT OF OAKLAND · EBMUD

gatewaypark

(Continued)

Use of shuttles should definitely be included. For disabled, seniors who can't walk distances, etc.
Try to limit automobile and other motorized vehicles and encourage walk/bike/shuttle.

Select key private enterprise activities that will enhance the environment and provide funds for park maintenance.

Thank you for your participation!

gatewaypark

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RE: Gateway Park Public Scoping Meeting Comments

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Name: Bo Barnes Date: 11/14

Affiliation (if applicable): Bay Access

Address:

Email:

Comment: The Kayak access looks good However... ~~Are~~ are there any plans for ON site boat (kayaks, canoes, dragon boats ~~Sites~~ sculls) and other human powered boats. It would be the furthest point west towards SF to commute by boats to SF. If you could put a car access road to bench one could load or unload & go park and walk back to bench. Make ~~the trends Accessible to~~ a curve of 40 to 100 ft to cars NO More!

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

gatewaypark

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(Continued)

You have the chance to make this bench area a premier spot for human powered boat use.

1) on site storage
2) short ~~hike~~ hike to cars (40 to 100 ft)
3) Road so that cars can drop off or load boats
   From parking area
4)

Thank you for your participation!

gatewaypark

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Oakland, CA 94607

RE: Gateway Park Public Scoping Meeting Comments

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Name: bgeises Date: 11.14.2013

Affiliation (if applicable):

Address: Oakland, CA district 3

Email: [redacted]

Comment: Some Preliminary Comments:

- NO billboards/electronic signs! They are dangerous to auto drivers and visually intrusive to everyone (pedestrians, bicyclists, etc)
- provide some sort of earthen/planted berm between the bicycle/ped paths and the highway bridge landing. Cyclists & Ped will be ~~defe~~ deafened after making the exposed roundtrip on the bridge and could use the respite while back on terra firma.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

gatewaypark

(Continued)

- make sure there are "wild" spaces available for children and teens to play, to explore, to be inspired.
- DON'T have a rule & restriction for everything.
- Who/what agency will have jurisdiction/ownership/responsibility for maintaining this park?
- I do NOT want some private corporation having say over some part of this park.
- Will there be further design meetings? Right now, everything appears to be placeholder-ish.
- for those who have provided emails, please keep them in the loop for ALL meetings involved with this project.

- I'll try and think of other comments to email.

Thank you for your participation!

gatewaypark

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Name: Paul Kamen Date: 11/14/'13

Affiliation (if applicable): CDAWGS

Address: [redacted]

Email: [redacted]

Comment: Onsite storage is Critical! ideally, includes secure storage for wetsuits + paddles - Necessary for non-auto access. also (wish list) fresh water wash down.

Even more important than onsite storage - accommodate a non-profit paddling club or co-op. For security, ADA access, and low-cost participation + education + youth access, public/private non profits outperform commercial options by orders of magnitude.

For more information, please visit www.baybridgegatewaypark.org

(Please continue on back if necessary)

East Bay Regional Park District PORT OF OAKLAND EBMUD

(Continued)

See for example, Cal Sailing Club in Berkeley. www.Cal-Sailing.org

OR - Berkeley Racing Canoe Center, also in Berkeley www.BerkeleyRCC.org.

Both are great examples of ultra-low-cost water access, all they need is a space to operate and no further subsidy.

(and furthermore, Cal Sailing Club and Cal adventures in close proximity demonstrates that commercial operations do not need protected monopolistic territory. The public is extremely well served by overlapping services of the two facilities.)

Thank you for your participation!

Appendix B

Sea Level Rise Adaptation

CH2M HILL
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Technical Memorandum

Project	Gateway Park Project Approval/Environmental Document (PA/ED)	**Date**	November 20, 2014
Ref	Sea Level Rise Adaptation		
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This technical memorandum provides preliminary information and guidance for the incorporation of sea level rise due to climate change (SLR) in the planning and design of the proposed Gateway Park project.

Introduction

The sea level around the world, and California, is expected to gradually rise in the future due to climate change. The scientific literature and studies about the topic are abundant, and projections of sea level rise (SLR) are also abundant, but different. As the science related to SLR advances, projections will become more accurate. In any case, the high and low projections available today provide sufficient reason to consider SLR potentially detrimental to coastal infrastructure and habitats.

The Gateway Park project site is relatively flat, undeveloped, covered by low vegetation, and elevated approximately 8 to 12 feet above the mean lower low water (MLLW). The site is surrounded by San Francisco Bay waters to the north, west and south, and the City of Oakland to the east. The south shore, where the main areas of the Gateway Park project will be developed, consists of a bluff that slopes gently into the bay bottom which consists of a broad and shallow mud flat.

Considering that:

a) on the basis of water level measurements at the nearby Alameda NOAA tide station
   - the tide range is in the order of 6 feet,
   - the highest astronomical tide is approximately 8 feet MLLW,

- the highest water level measured is 9.65 feet MLLW (December 3, 1983),

b) the 100-year Total Water Level (TWL) is in the order of 9.70 feet MLLW, per estimates of Moffatt & Nichol (2008) 9.70 feet MLLW; PWA (2006) 9.32 feet MLLW; and USACE (1984) 9.74 feet MLLW.

c) the lifetime of the development would be over 50 years,

d) that according to the National Research Council (2012) SLR estimates for California for the years 2050 and 2100 are 0.5 - 2 feet and 1.4 - 5.5 feet, and that

e) at the project site the land elevation ranges between 8 and 12 feet MLLW,

it can be concluded that the planned facilities, utilities, structures, habitats, etc. will be vulnerable to high water levels and consequently, planning and design for the proposed Gateway Park project needs to account for SLR.

The San Francisco Bay Conservation and Development Commission (BCDC) updated the San Francisco Bay Plan in October 2011 to provide guidance to manage the expected impacts of SLR due to climate change in San Francisco Bay. The revised Bay Plan includes policies which, among others, require:

- to conduct risk assessments for shoreline areas and larger shoreline projects,
- risk assessments to be based on the best estimates of future SLR, and
- design projects to be resilient to a mid-century SLR projection and adaptable to longer-term impacts.

The proposed approach for accounting for SLR in planning and design of the Gateway Park so that the Bay Plan requirements are satisfied involves:

1. a vulnerability assessment,
2. a risk assessment, and
3. adaptation assessment and planning.

The vulnerability assessment involves the definition of the coastal hazards that affect and/or could affect the project site; the selection of SLR projections; the identification of areas, components and/or assets of the project that would be vulnerable to SLR; and the assessment of operational, environmental and economical impacts and consequences.

The risk assessment would combine the likelihood that future hazards associated with SLR would occur, with the magnitude or severity of the consequences of those hazards taking place. The results of these analyses would be used to identify and assess adaptation measures so that potential impacts and consequences are mitigated.

Vulnerability Assessment

Coastal Hazards

A first step in the vulnerability assessment is the definition of the coastal hazards that affect and/or could affect the project site. Wind, waves, currents and water levels are the drivers of processes which, depending on their severity, could become hazardous in coastal environments.

The Gateway Park project site, and specifically the south shore where the main areas of the project will be developed, is well protected and exposed to light winds and a mild wave climate generated by wind within San Francisco Bay. As indicated in CH2M HILL (2013), typical wind conditions are 0 to 10-knot westerly winds and extreme wind speeds are in the order of 35 knots from the SE to SW. Typical wind waves are short 1 to 2-second less than 1 foot in height, and extreme waves are 3-foot high, 3 to 4-second due to 30+ knot winds from the SW. Along the south shore, currents are weak and in the order of 0 to 0.2 knots.

The upland area is relatively flat, undeveloped, covered by low vegetation, and elevated approximately 8 to 12 feet above the MLLW. It is assumed that the sediment is gravel fill where 29 percent is gravel, 53 percent is sand, and 18 percent is silt and clay (MWH, 2002). The south shoreline consists of an approximately 9 feet MLLW high bluff, shown in Figure 1, which slopes gently (1V to 5-7H) into San Francisco Bay and is protected by a non-engineered revetment. The tidal range is approximately 6 feet (MLLW to MHHW) and the maximum water level was 9.65 feet MLLW measured on December 3, 1983 (CH2M HILL, 2013). According to NOAA, the rate of historical sea level rise per measurements at nearby Alameda station 9414750 is 0.82 mm/year which translates to a negligible change of sea level of 0.27 feet in the next 100 years. According to the National Research Council (2012), the 0.82 mm/year rate of change in sea level is mainly due to land subsidence and is in the range of what has been observed along the California coast south of Cape Mendocino.



Figure 1. Representative section of the south shore bluff showing top elevation.

On the basis of the site's physical and metocean conditions described above, the following coastal processes are identified:

- flooding (the process of a dry area becomes periodically or episodically submerged),
- inundation (the process of a dry area becomes permanently submerged),
- wave overtopping (the process by which water driven by waves on a slope exceeds the top elevation of the slope and floods or inundates the landward area), and
- shoreline erosion (the process of removal of sediment from the shoreline).

Unfortunately, no information was found to inform how these processes may have impacted the project site in the past, and to provide a guide for the determination of to what extent these could be hazardous, in particular when considering SLR. However, considering that:

a) the low elevation of the top of the bluff (approx. 9 feet MLLW) and the upland area (8 to 12 feet MLLW) relative to the tide range (6 feet MLLW to MHHW) and the 100-year TWL (9.7 feet MLLW),

b) the very poor protection offered by the existing non-engineered revetment, and

c) the fill and erodable nature of the site sediments,

it can be concluded that flooding, inundation, wave overtopping and shoreline erosion constitute coastal hazards that need to be considered in the planning and design of Gateway Park.

As SLR projections materialize, the impact of these hazards will be more severe as extreme water levels will become more frequent and, consequently, areas subjected to wave overtopping will be larger. Shoreline erosion will be more severe given that larger areas of the bluff will be submerged, some upland areas may be subjected to flooding and inundation; and facilities, utilities, structures, and habitats could be damaged or lost.

SLR Projections

On November 14, 2008, the Governor of California issued Executive Order S-13-08 which, in part, directed state agencies planning construction projects in areas vulnerable to future SLR to consider a range of scenarios for the years 2050 and 2100; and to assess project vulnerability, reduce expected risks, and increase resiliency to SLR. The order also directed agencies to request that the National Academy of Sciences convene an independent panel to prepare a "California Sea Level Rise Assessment Report." In 2010, in advance of the National Academy of Sciences report, senior staff from 16 state agencies of the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT) reached agreement on a Sea Level Rise Interim Guidance Document, with science-based input from the California Ocean Protection Council's Science Advisory Team and the California Ocean Science Trust. The CO-CAT recommended that state agencies use the ranges of SLR presented in a paper by Vermeer and Rahmstorf (2009), adjusted to use the year 2000 rather than 1990 as the baseline, and to select SLR projections based on agency and context-specific considerations of risk tolerance and adaptive capacity.

Table 1 shows the SLR projections produced by the CO-CAT (2010) using the year 2000 as the baseline. Because no catastrophic ice melting and no safety factors for underestimation were included, these projections may underestimate SLR. For years after 2050, low, medium and high projections are shown, corresponding to the B1, A2 and A1FI greenhouse emission scenarios defined by the Intergovernmental Panel on Climate Change (IPCC, 2000), respectively.

Table 1. CO-CAT SLR projections, year 2000 baseline, no catastrophic ice melting, low = B1, medium = A2 and high = A1FI.

Year		Average of Models	Range of Models
2030		7 in (18 cm)	5-8 in (13-21 cm)
2050		14 in (36 cm)	10-17 in (26-43 cm)
2070	Low	23 in (59 cm)	17-27 in (43-70 cm)
	Medium	24 in (62 cm)	18-29 in (46-74 cm)
	High	27 in (69 cm)	20-32 in (51-81 cm)
2100	Low	40 in (101 cm)	31-50 in (78-128 cm)
	Medium	47 in (121 cm)	37-60 in (95-152 cm)
	High	55 in (140 cm)	43-69 in (110-176 cm)

On October 2011, the BCDC updated the San Francisco Bay Plan per the CO-CAT SLR projections, and stated that the CO-CAT recognized that it may not be appropriate to set definitive SLR projections and that, based on a variety of factors, state agencies may use different SLR projections. Although the CO-CAT projections were generally recognized as the best science-based SLR projections for California at the time, scientific uncertainty remains regarding the pace and amount of SLR.

The states of Washington and Oregon, the U.S. Army Corps of Engineers (USACE), the National Oceanic and Atmospheric Administration (NOOA), and the U.S. Geological Survey (USGS) subsequently joined California in sponsoring the SLR study requested by the Governor of California Executive Order S-13-08. The scope of the study was augmented to evaluate SLR in the global oceans and along the coasts of California, Oregon, and Washington for 2030, 2050, and 2100. In 2012, the National Research Council (NRC, 2012) issued the report of the study. Considering that these are the most recent, scientifically-based and site specific SLR projections, it is recommended that these projections be used for Gateway Park.

Table 2 shows the SLR projections produced by the NRC (2012) for San Francisco referred to the year 2000 for low (B1), medium (A1B) and high (A1FI) scenarios and years 2030, 2050 and 2100. The projections are based on ice loss rates for glaciers and ice caps except Alaska, Greenland, and Antarctica. By the end of the century, the A1B scenario used for the medium projection is expected to produce lower temperatures, and therefore lower SLR, than the A2 scenario used by CO-CAT (2010).

Table 2. NRC 2012 SLR projections for San Francisco, year 2000 baseline.

Year	Scenario	SLR
2030	Low (B1)	2 in (4.3 cm)
	Medium (A1B)	6 in (14.4 cm)
	High (A1FI)	12 in (29.7 cm)
2050	Low (B1)	5 in (12.3 cm)
	Medium (A1B)	11 in (28 cm)
	High (A1FI)	24 in (60.8 cm)
2100	Low (B1)	17 in (42.4 cm)
	Medium (A1B)	36 in (91.9 cm)
	High (A1FI)	66 in (166.4 cm)

Identification of Vulnerabilities

Flooding, inundation, wave overtopping and shoreline erosion are coastal hazards to be considered for the planning and design of Gateway Park in the event SLR projections materialize.

A detailed identification of the vulnerabilities of Gateway Park, that is the identification of the areas, elements, facilities, utilities, structures, habitats, etc. vulnerable to the coastal hazards in SLR scenarios is not possible at this time given that, other than a general description of the three areas to be developed along the south shore: The Point, the Baywalk and the Boardwalk (CH2M HILL, 2013), no higher level designs have been developed for these. Nevertheless, a preliminary and general assessment of the project vulnerability to coastal hazards can be made to provide initial guidance for planning and design.

On the basis of the site analysis given above, two areas of the project are vulnerable. First, the existing condition and protection of the bluff has been assessed as poor, and it can only deteriorate in a SLR scenario given that larger areas of the bluff will submerged and exposed to the erosive action of waves and varying water levels. Unless properly protected, the bluff will be eroded and any facilities, utilities, structures, habitats, etc. along the bluff will be susceptible to damage. Therefore, the bluff along the south shore constitutes a vulnerable area of the project site.

The second vulnerable area of the project is the upland area. Figure 2 shows a color-coded representation of flooding by average 100-year high-water levels for different amounts of sea

level rise: none, 50 cm (20 inches, 1.6 feet), 100 cm (39 inches, 3.3 feet), and 150 cm (59 inches, 4.9 feet) relative to mean sea level in the year 2000 (Knowles, 2010).

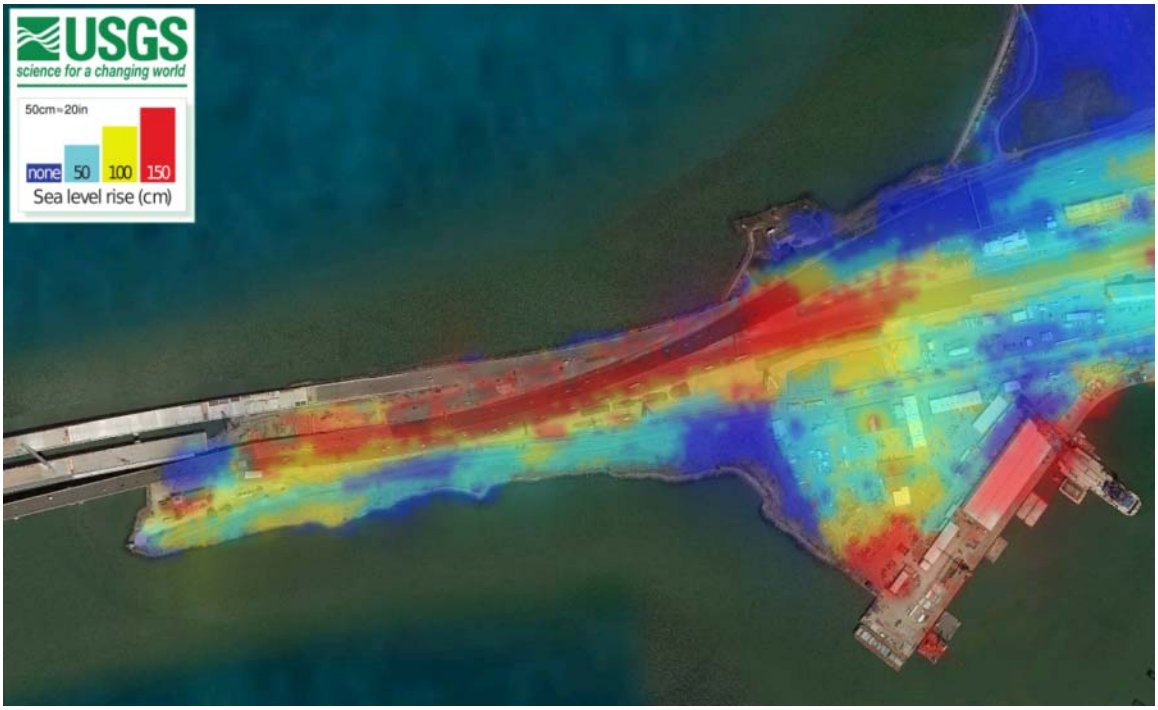


Figure 2. Flooding due to average 100-year high-water levels for different amounts of sea level rise.

The upland area of the project site south of the bridge is vulnerable to high water levels, with some areas vulnerable even in a no SLR scenario. For a 50 cm SLR scenario, which approximately correlates with a "medium" to "high" SLR projection by year 2050 according to the NRC (2012) (see Table 2), large areas of the project site would be vulnerable to flooding. For a 100 cm SLR scenario, which approximately correlates with the NRC (2012) "medium" to "high" SLR projection by year 2100, the entire upland area intended for the development, other than the existing bridge/toll area, will be vulnerable.

Other than the vulnerable areas and impacts described above, no assessment of the vulnerabilities of additional areas, facilities, utilities, structures, habitats; and operational, environmental and economical impacts can be made until the Gateway Park design is developed in more detail.

Risk Assessment

A risk assessment includes assessing the likelihood of an event occurring in the future and assessing the magnitude of the consequences if the event were to occur. Following the methodology proposed by Russell (2012), the risks from coastal hazards that are associated with SLR were evaluated for short- to intermediate-term (now to 2050); and intermediate- to long-term (2050 to 2100) timeframes, and for the as-is, existing condition of project site. A 1-foot SLR was selected for the short- to intermediate-term, and a 3-foot SLR for the intermediate- to long-term timeframe. These correspond to the medium (A1B) NRC (2012) projections. The selection of other SLR projection may result in a different risk assessment.

Three different levels of magnitude of consequences and likelihood of occurrence were used in the assessment: low, medium, and high. The levels used for the likelihood of occurrence, although based upon the SLR projections, are qualitative.

Table 3 and Table 4 show preliminary risk assessments for the short- to intermediate-term and for the intermediate- to long-term timeframes due to SLR and the associated coastal hazards identified for Gateway Park, respectively. Colors from green to red indicate increasing level of risk, and hazards in the red boxes are of the highest priority for adaptation because they will have the highest consequences and will occur relatively more frequently. The risk assessments could be refined, as conceptual designs for Gateway Park are further developed.

The following summarizes the rationale behind the risk assessment:

- For the short- to intermediate-term timeframe, where a 1-foot SLR is projected:
    - wave overtopping: the likelihood of occurrence of this hazard is assessed as medium. The bluff freeboard in high water level, spring tide conditions could be in the order of 1 foot or less (bluff elevation (approx. 9 feet MLLW) – high water/spring tide level (7 to 8 feet MLLW) - SLR (1 foot)). However, because the typical and extreme wave conditions along the south shore are mild (less that 1 foot and 3 feet, respectively) and the gentle (1V to 5-7H) bluff slope would dissipate waves effectively, the consequence of wave overtopping is assessed as low.
    - shoreline erosion: the submerged area of the bluff will increase and the varying water levels and waves will erode portions of the bluff that are not affected today. The likelihood of occurrence of this hazard is therefore assessed as high and the consequences of erosion also high given that land area will be lost, and structural foundations will be compromised and facilities, utilities, structures, habitats, etc. along the shore damaged or lost.

- flooding: the approximately 9 feet MLLW bluff elevation will be insufficient to prevent flooding. In high water level, spring tide conditions (7 to 8 feet MLLW + SLR (1 foot)) the bluff freeboard is expected to be marginally low at 1 foot or less and flooding may occur occasionally. However, during El Nino years, when the sea level could increase as much as 1 foot, flooding is expected to occur more frequently. The likelihood of occurrence of flooding is therefore assessed as medium, dictated by the recurrence of spring tides and El Nino (every 4 to 7 years), and the consequence of flooding large areas of the project (see approximate areas in Figure 2 in between the "none" and "50 cm" SLR scenarios areas) is assessed as medium given that flooding, while damaging, will be an event of relatively short duration.
- inundation: the same conditions for assessing flooding apply to inundation. However, the high elevation of the land (8 to 12 feet MLLW) relative to the mean sea level (MSL (3.45 feet MLLW) + SLR (1 foot)) will prevent its permanent submergence. Therefore, the likelihood of occurrence of inundation is assessed as low, while its permanent duration implies high consequences due to the loss of land area, and facilities, utilities, structures, habitats, etc.

Table 3. Short- to intermediate-term timeframe risk assessment (now to 2050) due to 1-foot of SLR and associated coastal hazards.

		Likelihood of Occurrence		
		Low	**Medium**	**High**
Consequence	**Low**		Wave Overtopping	
	Medium		Flooding	
	High	Inundation		Shoreline Erosion

- For the intermediate- to long-term timeframe, where a 3-foot SLR is projected:
  - wave overtopping: the likelihood of occurrence of this hazard is assessed as medium. There will be no bluff freeboard in high water level, spring tide conditions and water will run over the bluff (bluff elevation (approx. 9 feet MLLW) – high water/spring tide level (7 to 8 feet MLLW) - SLR (3 feet)).

However, because the typical and extreme wave conditions along the south shore are mild (less that 1 foot and 3 feet, respectively) and the gentle (1V to 5-7H) bluff slope would dissipate waves effectively the consequence of wave overtopping is assessed as low. More significant events for this timeframe would be flooding and inundation.

- shoreline erosion: all the bluff will be submerged in high water level, spring tide conditions, and the varying water levels and waves will erode portions of the bluff that are not affected today. The likelihood of occurrence of this hazard is therefore assessed as high and the consequences of erosion also high given that that land area will be lost, and structural foundations will be compromised and facilities, utilities, structures, habitats, etc. along the shore damage or lost.
- flooding: the approximately 9 feet MLLW bluff elevation will be insufficient to prevent flooding. In typical high water level, spring tide conditions (7 to 8 feet MLLW + SLR (3 feet)) there will be no bluff freeboard and flooding will occur frequently. During El Nino years, when the sea level could increase as much as 1 foot, flooding is expected to occur more frequently. The likelihood of occurrence of flooding is therefore assessed as medium, dictated by the recurrence of spring tides and El Nino (every 4 to 7 years), and the consequence of flooding large areas of the project (see approximate areas in Figure 2 for the aggregate of the "none" and "50 cm" and "100 cm" SLR scenarios areas), is assessed as high given that flooding could potentially cover large areas.
- inundation: the same conditions for assessing flooding apply to inundation. However, the high elevation of the land (8 to 12 feet MLLW) relative to the mean sea level (MSL (3.45 feet MLLW) + SLR (3 feet)) will prevent its permanent submergence. Therefore, the likelihood of occurrence of inundation is assessed as low, while its permanent duration implies high consequences due to the loss of land area, and facilities, utilities, structures, habitats, etc.

Table 4. Intermediate- to long-term timeframe risk assessment (2050 to 2100) due to 3-feet of SLR and associated coastal hazards.

		Likelihood of Occurrence		
		Low	**Medium**	**High**
Consequence	**Low**		Wave Overtopping	
	Medium			
	High	Inundation		Shoreline Erosion Flooding

Adaptation Assessment and Planning

Using the results of the risk assessment shown in Table 3 and Table 4, the capacity of Gateway Park to adapt to SLR and associated coastal hazards was assessed, and preliminary adaptation measures identified. These could be refined as conceptual designs for Gateway Park are developed. Table 5 and Table 6 shows the result of the adaptation assessment.

Table 5. Capacity to adapt to a 1-foot SLR and associated coastal hazards for the short- to intermediate-term timeframe (now to 2050).

Hazard	Risk	Adaptive Capacity
Wave Overtopping	Low	High
Shoreline Erosion	High	High
Flooding	Medium	Medium
Inundation	Medium	High

- For the short- to intermediate-term timeframe, where a 1-foot SLR is projected:
    - wave overtopping: the risk associated with this hazard was assessed as low. The capacity to adapt to it is assessed as high, given that the existing bluff features a gentle slope (1V to 5-7H) that would dissipate waves effectively. However, the existing non-engineered revetment protecting the bluff is in poor condition and in order to prevent further erosion, it is recommended to replace it with an engineered structure. This improvement is affordable and

will greatly enhanced wave dissipation and, consequently, mitigate wave overtopping.

- shoreline erosion: the risk associated with this hazard was assessed as high and the capacity to adapt to it is assessed as high. The existing revetment is a non-engineered structure in poor condition. In order to prevent further erosion, it is recommended to replace it by an engineered structure. Alternatively, facilities, utilities, structures, habitats, etc. planned to be located along the shore could be setback to prevent the undermining of foundations as bluff erosion progresses. Setback distances could be computed on the basis of annual rates of erosion and the lifetime of the development. A detailed analysis will be required to determine setback distances, because no site-specific information about annual rates of erosion is available.
- flooding: the risk associated with this hazard was assessed as medium. The capacity to adapt to it is assessed as medium given that the construction of a levee, for example, to prevent flooding is reasonably feasible. While a levee could be an expensive alternative, to raise the elevation of the whole project site would be significantly more expensive and impractical. Alternatively, facilities, utilities, structures, habitats, etc. could be located above the 100-year return period TWL. In any case, a detailed extreme value analysis will be required to determine the 100-year TWL accounting for storm surge, wave runup and the effect of climate change on the frequency of storms, El Nino, etc.
- inundation: the risk associated with this hazard was assessed as medium and the capacity to adapt to it is assessed as high given that the existing elevation of the project site is sufficiently high, relative to the projected mean sea level to allow the draining of flooded areas and prevent inundation.

Table 6. Capacity to adapt to a 3-foot SLR and associated coastal hazards for the intermediate- to long-term timeframe (2050 to 2100).

Hazard	Risk	Adaptive Capacity
Wave Overtopping	Low	High
Shoreline Erosion	High	High
Flooding	High	Low
Inundation	Medium	High

- For the intermediate- to long-term timeframe, where a 3-foot SLR is projected:
  - wave overtopping: the risk associated with this hazard was assessed as low, and the capacity to adapt to it is assessed as high. The rationale for the assessment is the same as for the short- to intermediate-term timeframe: the gentle slope of the bluff plus an affordable engineered structure will greatly enhance wave dissipation and consequently mitigate wave overtopping.

- shoreline erosion: the risk associated with this hazard was assessed as high and the capacity to adapt to it is assessed as high. The rationale for the assessment is the same as for the short- to intermediate-term timeframe: the existing revetment is a non-engineered structure that is in poor condition and not effective to control erosion. An engineered structure would be both affordable and effective. In addition, facilities, utilities, structures, habitats, etc. along the shoreline could be setback at distances that would allow bluff erosion to progress with no consequences.
- flooding: the risk associated with this hazard was assessed as medium, and the capacity to adapt to it is assessed as low. A levee to elevate only the perimeter of the project site to adapt to the projected 3-foot SLR for the intermediate- to long-term timeframe could be prohibitive. Because large areas of the project site are below the water levels that would result even in typical high water scenarios consisting of 7 – 8-foot spring tides + 3-foot SLR = 10 to 11 feet; the extent of the levee may translate into a very expensive structure. Alternatively, facilities, utilities, structures, habitats, etc. could be located above the 100-year TWL including SLR. In any case, a detailed extreme value analysis will be required to determine the 100-year TWL accounting for storm surge, wave runup and the effect of climate change on the frequency of storms, El Nino, etc.
- inundation: the risk associated with this hazard was assessed as medium and the capacity to adapt to it is assessed as high given that the existing elevation of the project site is sufficiently high, relative to the projected mean sea level to allow the draining of flooded areas and prevent inundation.

Preliminary Analysis of Levee Elevation

For a coastal flood protection levee to be recognized by the National Flood Insurance Program (NFIP) and be incorporated into flood hazard maps, it must be designed, constructed and maintained to prevent flooding landward of the levee crest during 100-year TWL (Federal Emergency Management Agency, 2005, see section D.4.7.3.4).

To be certified, the coastal flood protection levee must meet the requirements set forth in Title 44 of the Code of Federal Regulations Section 65.10 (b)(1)(iii) (Federal Emergency Management Agency, 2003). FEMA freeboard requirements for a coastal levee to be certified as providing protection against flooding are defined for 100-year TWL "with wind-wave action" and "without wind-wave action".

For Gateway Park, the case "with wind-wave action" applies and this would require, in principle, the levee freeboard to be 1 foot above the 100-year wave height or the maximum wave runup elevation (whichever is greater) that is associated with the 100-year TWL.

Therefore and according to this requirement, and on a preliminary basis, the top elevation of the levee to protect the site from flooding in a 1-foot SLR, short- to intermediate-term timeframe (now to 2050) scenario would be approximately:

9.7 feet MLLW 100-year TWL
+ 1 foot SLR
+ 3 feet 100-year wave height (see CH2M HILL (2013) for 100-year wave height estimate)
+ 1 foot freeboard
= 14. 7 feet MLLW

Similarly, the top elevation of the levee to protect the site from flooding in a 3-foot SLR, intermediate- to long-term timeframe (2050 to 2100) scenario would be approximately:

9.7 feet MLLW 100-year TWL
+ 3 feet SLR
+ 3 feet 100-year wave height (see CH2M HILL (2013) for 100-year wave height estimate)
+ 1 foot freeboard
= 16. 7 feet MLLW

However, Title 44 of the Code of Federal Regulations Section 65.10 (b)(1)(iv) (Federal Emergency Management Agency, 2003) contemplates exceptions to the minimum coastal levee freeboard requirement described above (Section 65.10 (b)(1)(iii)) provided that appropriate engineering analyses demonstrating adequate protection with a lesser freeboard are submitted to support a request for an exception. The material presented must evaluate the uncertainty in the estimated base flood loading conditions and particular emphasis must be placed on the effects of wave attack and overtopping on the stability of the levee. Under no circumstances, however, will a freeboard of less than two feet above the 100-year still water surge elevation will be accepted.

In order to explore the range of possible levee crest elevations, a preliminary overtopping analysis was performed for the 1-foot SLR short- to intermediate-term timeframe (now to 2050), and the 3-foot SLR intermediate- to long-term timeframe (2050 to 2100) scenarios, for one of the several slope types possible for Gateway Park's south shore. Using EUROTOP's online wave overtopping empirical calculation tool, mean discharges for these two scenarios were computed for an armored slope (rock revetment) cross section and

compared to accepted critical values of mean overtopping discharges, such as those summarized in USACE (2006) and shown in Table 7.

Table 7. Critical values of mean overtopping discharges (USACE, 2006).

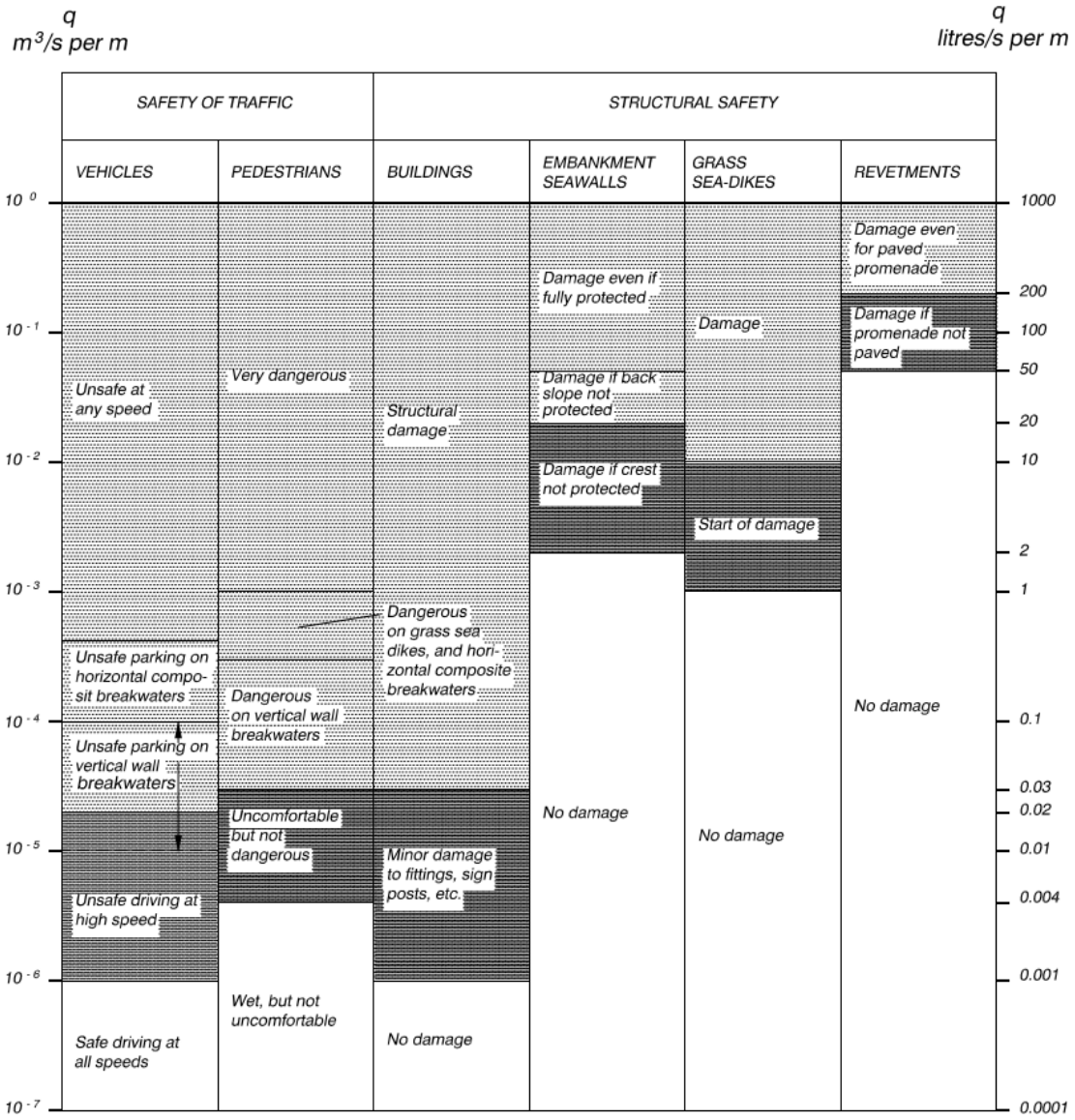


Table 8 shows mean overtopping discharges for a range of freeboards for the 1-foot short- to intermediate-term timeframe (now to 2050) and the 3-foot intermediate- to long-term timeframe (2050 to 2100) SLR scenarios. From the standpoint of the structural safety of the rock revetment and the safety of vehicular and pedestrian traffic, levee crest elevations that would result in mean overtopping discharges of less than 50 L/m/sec are considered

acceptable. It is noted that the rock revetment is only one of the several slope types possible for Gateway Park's south shore and that mean overtopping discharges could be higher or lower depending on the slope type. Furthermore, the mean overtopping discharges shown in Table 8 should be taken as preliminary, more accurate estimates could be obtained if more sophisticated analysis methods are used. Figure 3 shows a schematic of the armored slope (rock revetment) cross section considered in the analysis.

Table 8. Mean overtopping discharges for 1 and 3 feet SLR scenarios.

SLR (feet)	100-year TWL (feet)	Freeboard / Levee Crest Elevation (MLLW) (feet) Mean Overtopping Discharge (L/m/sec)		
1	9.7	2 / 12.7	3 / 13.7	4 / 14.7
		22.9	4.8	0.96
3	9.7	0 / 12.7	1 / 13.7	2 / 14.7
		543.8	108.7	22.9
Wave conditions: H_{m0} = 3 feet, T_{peak} = 3 seconds armored slope, 1V:6H, 2 rock layers impermeable core probabilistic method				

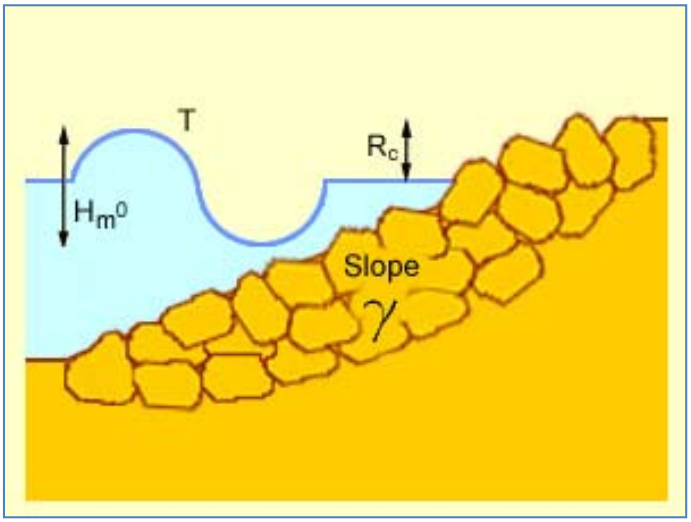


Figure 3. Armored slope (rock revetment) typical cross section.

In summary and on a preliminary basis, the following adaptation measures for SLR and associated coastal hazards were identified. It is important to note that the selection of other SLR projections may result in a different adaptation assessment and plan.

1. An engineered structure (e.g. revetment) to protect the bluff from erosion and mitigate wave overtopping would be necessary.
2. For the short- to intermediate-term timeframe (now to 2050), a 13 to 14-foot (MLLW) crest elevation levee would be necessary to provide flooding protection to the site.
3. For the intermediate- to long-term timeframe (2050 to 2100), a levee to provide flooding protection to the site in a 3-foot SLR scenario could be too expensive and impractical because:
    a. it would require a top elevation of approximately 15 feet MLLW
    b. it would pose visual obstruction,
    c. restrict public access, and
    d. end of the century SLR projections are uncertain at this time and may not materialize.
4. Locate facilities, utilities, structures, habitats, etc. elevated above the 9.7 feet MLLW 100-year TWL + 1 foot SLR and/or consider setback distances.
5. Because end of the century SLR projections are uncertain and may not materialize, build storm drain systems for the short- to intermediate-term timeframe (now to 2050, e.g. 9.7 feet MLLW 100-year TWL + 1 foot SLR), and make provisions to pump thereafter.

References

CH2M HILL (2013). Gateway Park Project Approval/Environmental Document (PA/ED), Site Characterization and Assessment, Technical Memorandum.

Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT) (2010). State of California Sea-Level Rise Interim Guidance Document. http://www.opc.ca.gov/2011/07/sea-level-rise-task-force-interim-guidance-document/

EUROTOP Wave Overtopping Calculation Tool, http://www.overtopping-manual.com/EmpArmourSlope_Simple.aspx.

Federal Emergency Management Agency (2003). Title 44 - Emergency Management and Assistance, Part 65 - Identification and Mapping of Special Hazard Areas, Section 65.10 - Mapping of Areas Protected by Levee Systems. Code of Federal Regulations (CFR). http://www.gpo.gov/fdsys/pkg/CFR-2003-title44-vol1/content-detail.html.

Federal Emergency Management Agency (2005). Final Draft Guidelines for Coastal Flood Hazard Analysis and Mapping for the Pacific Coast of the United States. Prepared for FEMA as a joint project by FEMA Region IX, FEMA Region X and FEMA Headquarters by Northwest Hydraulics Consultants, Inc. http://www.fema.gov/media-library-data/20130726-1541-20490-9741/cg_pacific.pdf

IPCC (Intergovernmental Panel on Climate Change), 2000. Emission Scenarios, N. Nakicenovic and R. Swart, Eds., Cambridge University Press, Cambridge, UK, 570 pp.

Knowles, N. (2010). Potential Inundation Due to Rising Sea Levels in the San Francisco Bay Region. California Climate Change Center. San Francisco Estuary and Watershed Science, 8:1. http://escholarship.org/uc/search?entity=jmie_sfews;volume=8;issue=1

Moffatt & Nichol (2008). Report on Maintenance Dredging Needs, San Leandro Marina. January 2008.

Montgomery Watson Harza (MWH) (2002). Oakland Army Base Environmental Baseline Survey for Transfer, December 2002.

National Research Council (2012). Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future. Committee on Sea Level Rise in California, Oregon, and Washington; Board on Earth Sciences and Resources; Ocean Studies Board; Division on Earth and Life Studies.

Phil Williams & Associates, Ltd. (2006). South Bay Salt Pond Restoration Project. Flood Analyses Report. July 2006 – Revised.

Russell, N. and G. Griggs (2012). Adapting to Sea Level Rise: A Guide for California's Coastal Communities. California Energy Commission, Public Interest Environmental Research Program.

U.S. Army Corps of Engineers (1984). San Francisco Bay: Tidal Stage Versus Frequency Study. San Francisco District.

U.S. Army Corps of Engineers (2006). Coastal Engineering Manual, EM 1110-2-1100 (Part VI), Fundamentals of Design.

Vermeer, M. and S. Rahmstorf (2009). Global Sea Level Linked to Global Temperature. Proceedings of the National Academy of Sciences. http://www.pnas.org/content/early/2009/12/04/0907765106.full.pdf+html

Appendix C
Visual Impact Assessment

VISUAL IMPACT ASSESSMENT

Gateway Park Project

November 2016

Statement of Compliance: **Produced in compliance with National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) requirements, as appropriate, to meet the level of analysis and documentation that has been determined necessary for this Project.**

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LIST OF ABBREVIATED TERMS

ABAG	Association of Bay Area Governments
BATA	Bay Area Toll Authority
Bay	San Francisco Bay
Bay Bridge	San Francisco Oakland Bay Bridge
BCDC	Bay Conservation and Development Commission
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CTC	California Transportation Commission
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EIR/EA	environmental impact report/environmental assessment
FHWA	Federal Highway Administration
I-80	Interstate 80
I-880	Interstate 880
IERBYS	Interurban Electric Railway Bridge Yard Shop
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
OBRA	Oakland Base Reuse Authority
OSCAR	Open Space, Conservation, and Recreation Element
Park	proposed Gateway Park
sf	square foot
VAU	visual assessment unit
VIA	visual impact assessment

VISUAL IMPACT ASSESSMENT
Gateway Park Project

I. PURPOSE OF STUDY

The purpose of this visual impact assessment (VIA) is to document potential visual impacts caused by the proposed project and propose measures to lessen any detrimental impacts that are identified. Visual impacts are demonstrated by identifying visual resources in the Project area, measuring the amount of change that would occur as a result of the Project, and predicting how the affected public would respond to or perceive those changes.

Introduction

The Bay Area Toll Authority (BATA) is the lead agency under the California Environmental Quality Act (CEQA). The environmental document is a CEQA environmental impact report (EIR).

The proposed project is the creation of a new park (Park) at the east touchdown of the San Francisco Oakland Bay Bridge (Bay Bridge) in Oakland, California (**Figure 1**). The idea for a Park at this location was conceived in the 1990s during the planning for: 1) Replacement of the new East Span of the Bay Bridge, 2) Reuse of the Oakland Army Base, and 3) Demolition and Reconstruction of Interstate 880 (Cypress/Interstate 880 Freeway Project), which has been built.

A Park at this location would provide a gateway to both the new East Span of the Bay Bridge and the City of Oakland. The Park includes approximately 45 acres along the waterfront near the touchdown of the new East Span of the Bay Bridge. Outside the park boundaries, the proposed project could also include installing landscaping and parking near the I-880 freeway. Refer to **Figure 2**.

The Park would provide safe access to the new bicycle/pedestrian path on the new East Span of the Bay Bridge (Bay Bridge Trail), as well as access to existing and planned segments of the regional San Francisco Bay Trail. The Park would provide access to the shoreline and would be a unique waterfront amenity. The Park would include active and passive recreation opportunities. It would include a venue for community events and art displays. It would showcase the natural, maritime, industrial and transportation history of the East Bay area.

The Park is proposed by the Gateway Park Working Group. The Gateway Park Working Group includes the following nine local, regional and state agencies: BATA, California Department of Transportation (Caltrans), San Francisco Bay Conservation and Development Commission (BCDC), California Transportation Commission (CTC), East Bay Regional Park District (EBRPD), City of Oakland, Port of Oakland, East Bay Municipal Utility District (EBMUD), and Association of Bay Area Governments (ABAG's) Bay Trail Project.

At this time, it is envisioned the Park would be a regional park operated by the EBRPD or a Joint Powers Authority. Specific amenities within the Park may be operated by a philanthropic organization and/or private concessionaires. While the current planning process seeks approval for the entire Project, it is anticipated the Park will be constructed in phases depending on the availability of funding and right-of-way. A name has not been determined for the Park, but names that have been considered include Gateway Park and The Key. For purposes of this document, the term Gateway Park and Park are used.

II. PROJECT DESCRIPTION

This section describes the proposed project that was developed to meet the identified purpose and need through accomplishing the defined purposes, while avoiding and minimizing environmental impacts. The Project alternatives are discussed in *Alternatives* below.

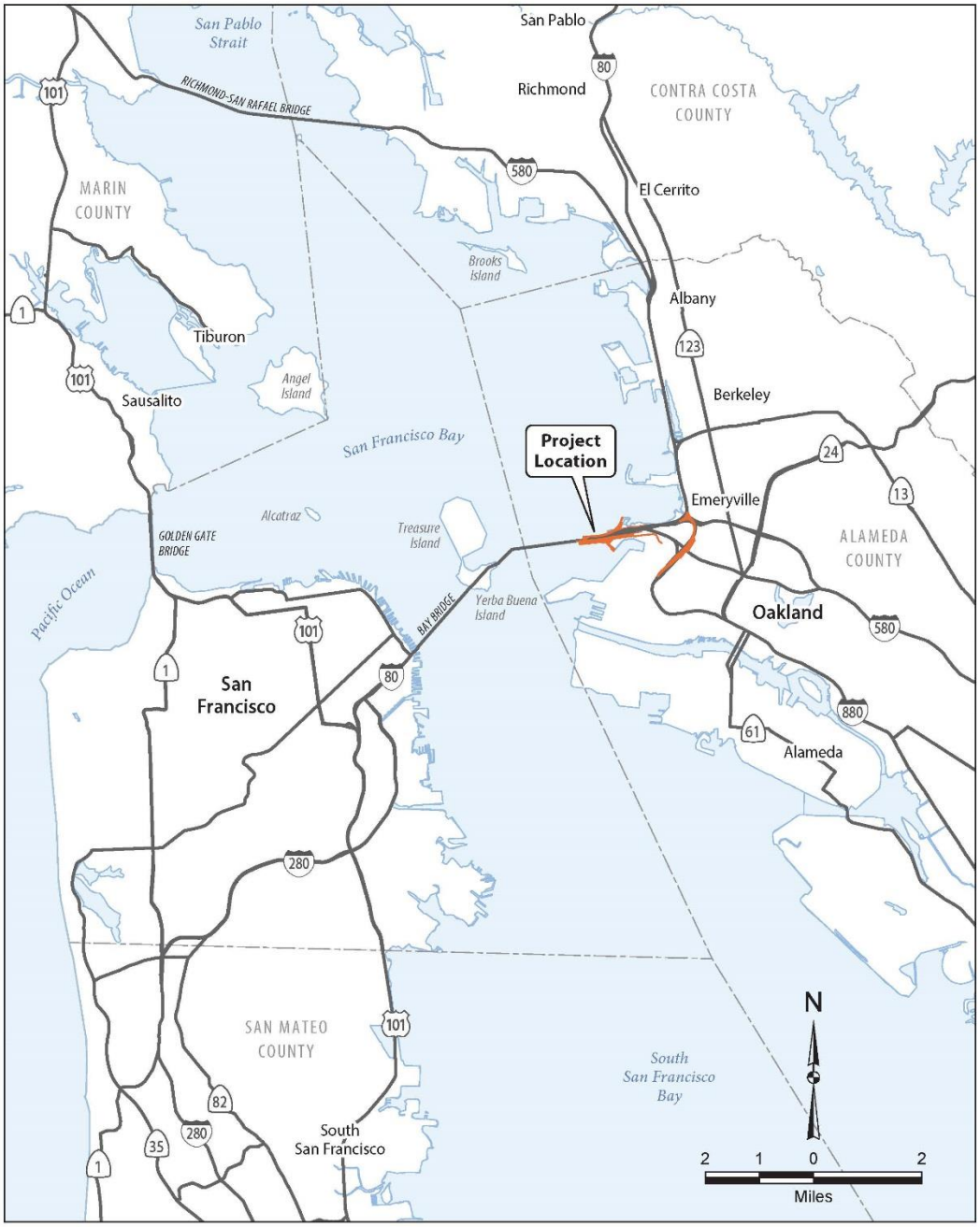
The Park would be located in the City of Oakland, Alameda County, adjacent to Interstate 880 (I-880) and Interstate 80 (I-80) at the eastern touchdown of the Bay Bridge (**Figure 1**). The Project area includes underutilized industrial land on the south side of I-80, extending from the San Francisco Bay shoreline on the west to the Caltrans maintenance facility near the Bay Bridge toll plaza on the east. The Project area also includes the Radio Beach area on the north side of I-80 and land beneath and adjacent to I-880 and the I-880/I-80/I-580 interchange. Refer to **Figure 2**.

The approximately 45-acre Park has been divided into the following four park areas: Bridge Yard, Key Point, Port Playground, and Radio Beach (**Figure 3**). The Park would be developed in the following three phases as funding becomes available (also refer to *Project Phasing* below).

- Phase 1 – Bridge Yard
- Phase 2 – Key Point
- Phase 3 – Port Playground and Radio Beach

Following is a description of the primary features in each of the park areas, other park features, and Project phasing. Table 1 provides a summary of the Park areas and primary features.

Project Location



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Figure 1: Project Location

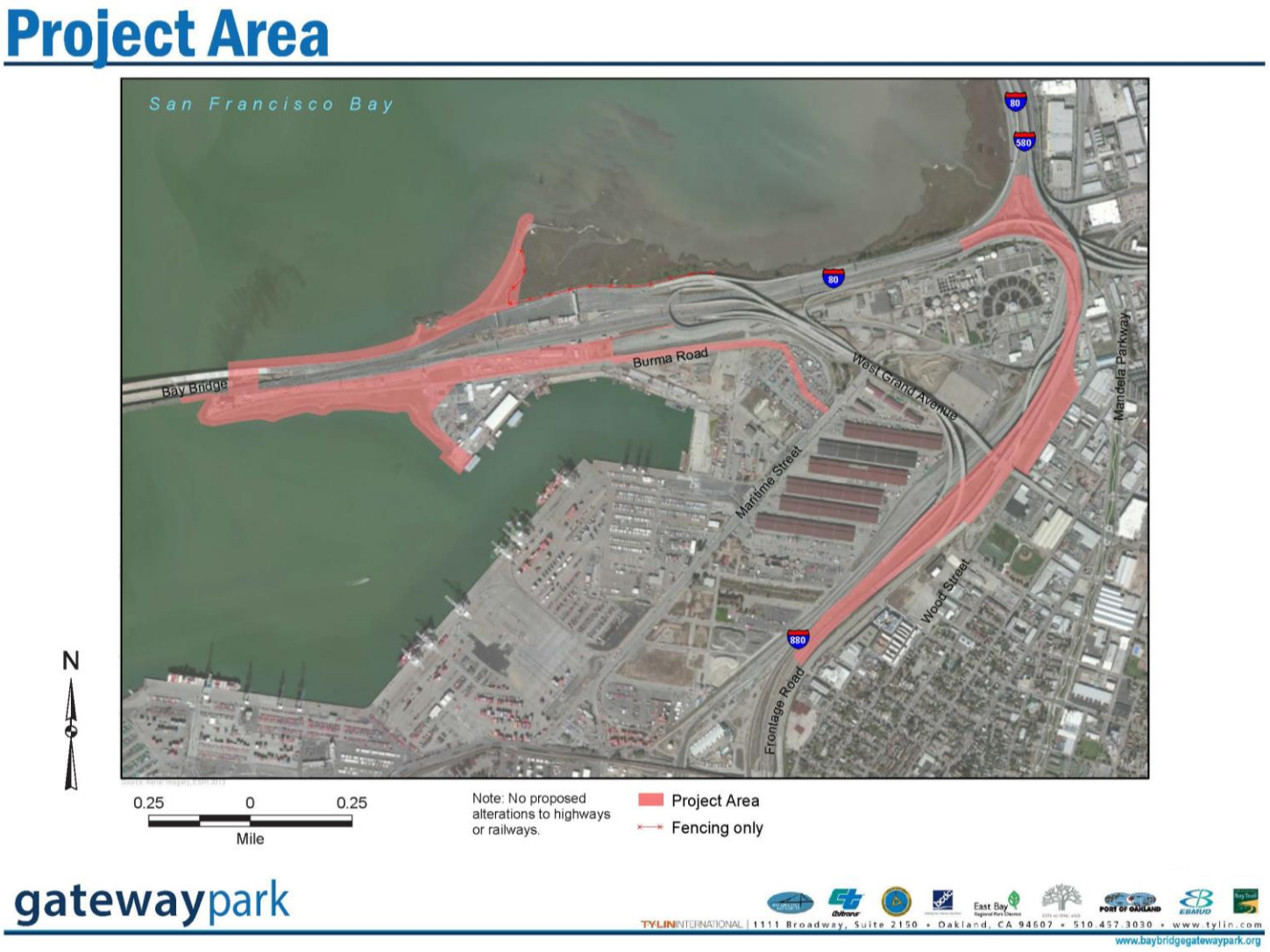


Figure 2: Project Area

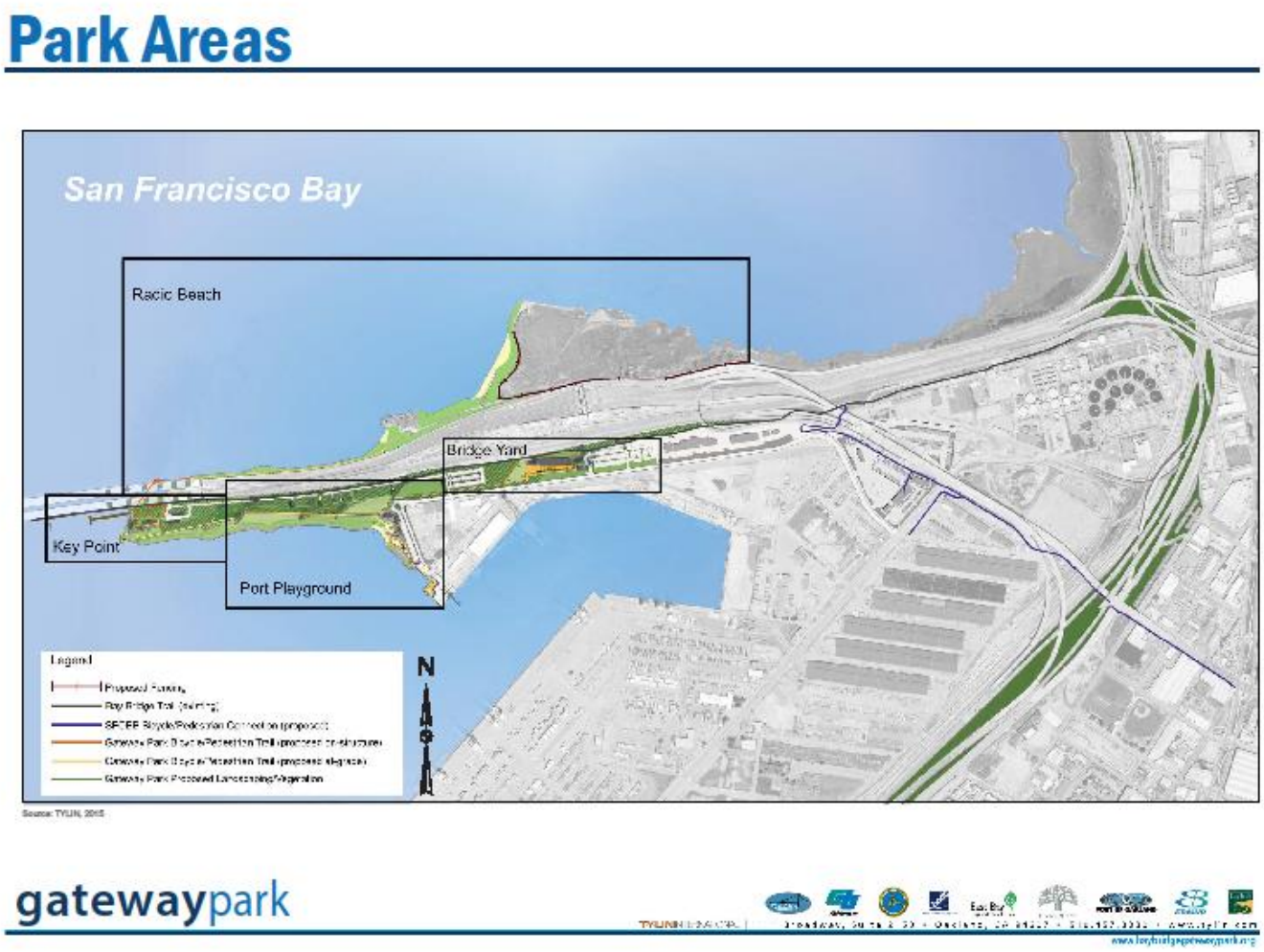


Figure 3: Park Areas

Table 1. Park Areas and Features			
Park Area and Primary Features		**Description**	**Approximate Size**
1	**Bridge Yard**	A destination recreation and event center in the core park area south of I-80.	10 acres
A	Arrival Plaza	Plaza on east side of Bridge Yard Building.	50,100 sf
B	Historic Display Plaza	Plaza on west side of Bridge Yard Building.	12,880 sf
C	Outdoor Yard Event Space	Event space west and south of Bridge Yard Building.	281,400 sf
D	Bridge Yard Building[1] Improvements	Minor internal improvements and use (e.g., meetings, events) of renovated building.	24,300 sf
E	Indoor/Outdoor Auditorium	Embedded into the landscape, southeast of the Bridge Yard Building.	7,370 sf
2	**Key Point**	Passive recreation area south of I-80 at the west end of the park near the Bay Bridge.	6 acres
A	Building Renovation	Renovate historic Key Building (also called Key Pier Substation) and Bay Bridge Oakland Substation (also called Mole Substation) visitor services	Key Building 1,515 sf Bay Bridge Oakland Substation 4,000 sf
B	Path to Bay Bridge Trail	Path for bicyclists/pedestrians to connect the Key Point area to Bay Bridge Trail.	720 feet long and 18.5 feet wide
C	Pier	New pier extending into Bay, along old Bay Bridge alignment.	300 feet long and 30 feet wide
3	**Port Playground**	Active and passive recreation area south of I-80 along the southern shoreline.	11 acres
A	Visitor Center	Main visitor center, restrooms, kayak building connected by covered walkways.	41,530 sf
B	Play Areas	Main playground, climbing wall, skate park, and climbing structures connected by paths.	
C	Kayak Beach	Sandy beach area, kayak launch facilities, and cement ramp.	31,240 sf beach area 200’ long x 19’ wide ramp
D	Boardwalk	Cement walkway with observation areas, benches, picnic areas.	10,990 sf
E	Meadow View Point	Natural grassy area providing elevated view overlooking Bay.	1.75 acres (76,860 sf)
F	Meadow and Bluff Walk	Large natural open space with pathways extending to Key Point.	5 acres
G	Active View Feature	Active view features (e.g., elevated zip line, ropes course, observation tower or similar).	--
4	**Radio Beach**	Passive recreation area north of I-80.	5 acres
A	Path to Radio Beach	Path for bicyclists/pedestrians to access Radio Beach from the Key Point area.	4,000-4,200 feet long
B	Restoration	Planting and habitat enhancement in Radio Beach Area	4 acres
C	Fencing	Permanent fencing to protect existing environmentally sensitive area.	1,670 feet long

[1]The Bridge Yard Building, formerly called the Interurban Electric Railway Bridge Yard Shop (IERBYS) and the Sawtooth Building, is being rehabilitated by Caltrans as part of a separate Project. Caltrans is removing their old equipment and seismically retrofitting for human use.

Project Areas

Bridge Yard

The Bridge Yard would be a destination recreation and event center in the core park area (**Figure 4**). Park features in this area include an arrival plaza, historic display plaza, outdoor yard event space, reuse of the renovated historic Bridge Yard building, and possibly an indoor/outdoor auditorium. Although park hours would be dawn to dusk, there could be special events in the evening at the Bridge Yard. The primary features are described below. The Bridge Yard area also includes access to the Bay Bridge Trail, landscaping and public parking (described in *Other Features* below). The Bridge Yard is approximately 10 acres.

Arrival Plaza

The Bridge Yard would include an arrival plaza on the east side of the Bridge Yard Building. It could include a vehicular drop-off area, bicycle parking area with bike racks, and plaza with trees, benches, and train rails in cobblestone or meadow. The arrival plaza would be approximately 50,100 square feet (sf).

Historic Display Plaza

The Bridge Yard would include a plaza on the west side of the Bridge Yard Building. Planned features include train rails in cobblestone or meadow with a historic train car from the key system, picnic tables, and shade canopy. The historic display plaza would be approximately 12,880 sf.

Outdoor Yard Event Space

The Outdoor Yard Event Space on the west and south side of the Bridge Yard Building would include public art displays and would accommodate small gatherings to large events. Small gatherings could include art exhibits and informal performances for approximately 200 people. Large events could include movies in the meadow for 500-1,000 people and concerts or conferences for 1,000-1,700 people. It also would include Parking Area B, as described in *Other Features* below. The outdoor yard event space is approximately 281,400 sf, including Parking Area B.

Bridge Yard Building Improvements

The Project would include minor internal improvements and use of the historic Bridge Yard Building, which has a large open space with a high ceiling and several high windows. Anticipated uses include meetings and events. The Bridge Yard Building is approximately 24,300 sf.

The Bridge Yard Building, formerly called the Interurban Electric Railway Bridge Yard Shop (IERBYS) and the Sawtooth Building, is being rehabilitated by Caltrans as part of a separate project. Caltrans is removing their old equipment and seismically retrofitting for human use.

Indoor/Outdoor Auditorium

The Project could also include a new indoor/outdoor auditorium, which would be embedded into the landscape, adjacent to the Bridge Yard Building. This building would hold approximately 100-200 people and may be used for events or training purposes. The auditorium would be approximately 7,370 sf.

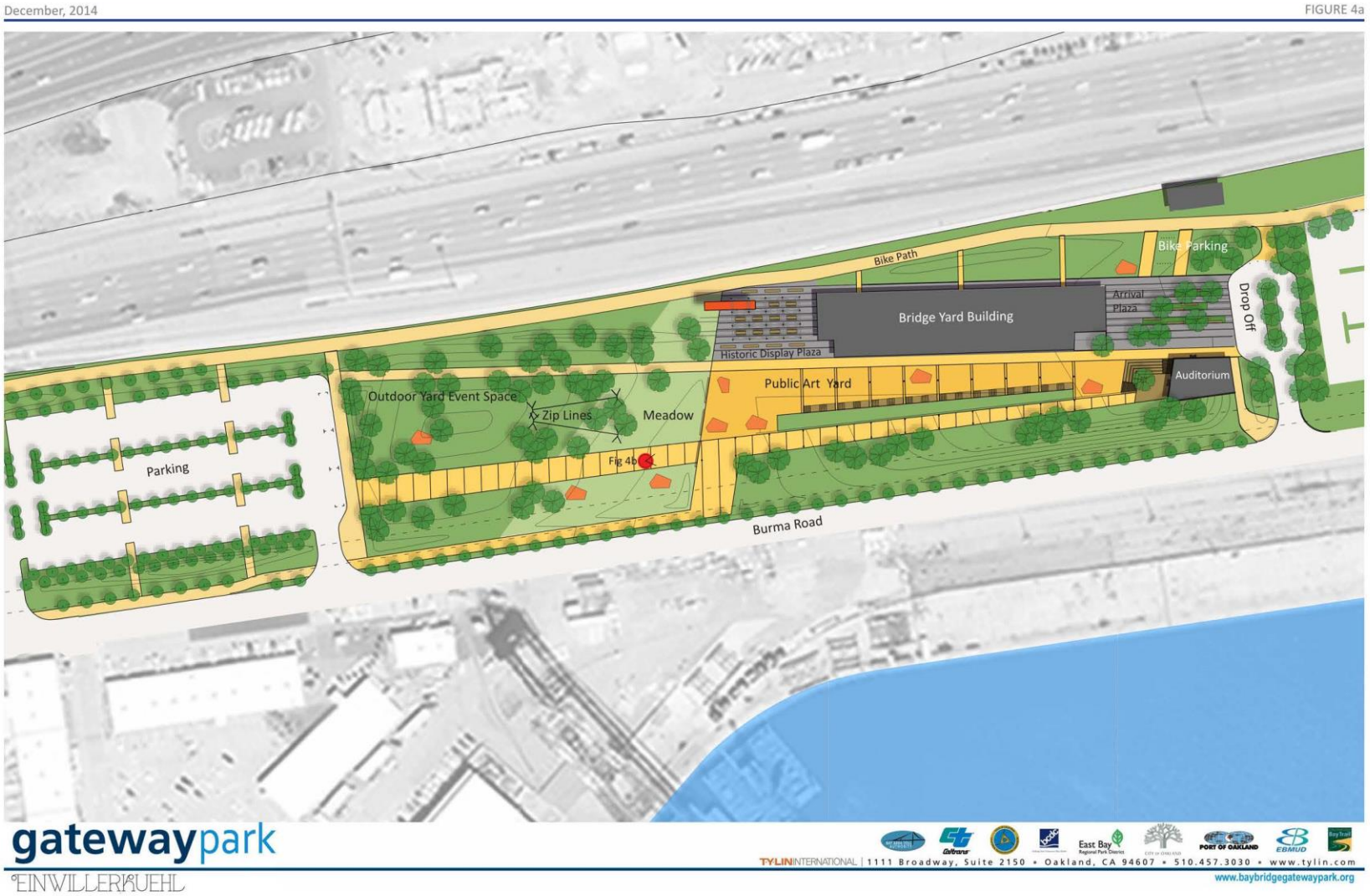


Figure 4a: Bridge Yard Area



Figure 4b: Bridge Yard Area Visualization

Key Point

Key Point would be a passive recreation area at the west end of the Park near the Bay Bridge (**Figure 5**). Park features in this area include reuse of two renovated buildings for visitor services, a path leading to the Bay Bridge Trail, and a pier. Other planned features in this area include cobblestone paving in front of the buildings, grass area behind the buildings, and wood decking with benches and landscaped planters on the water's edge. These primary park features in the Key Point area are described below. The Key Point area also includes landscaping, shoreline protection features, and new bio-retention basins for stormwater management (described in *Other Features* below). Key Point is approximately 6 acres.

Building Renovation

The two existing historic structures at the far west end are currently owned by Caltrans and would be renovated for visitor services. Plans for the 1,515-sf Key Building (also called Key Pier Substation) include a café and bookstore. Plans for the 4,000-sf Bay Bridge Oakland Substation include an artist studio, ranger station, conference room, storage and restrooms.

Path to Bay Bridge Trail

The Project would include installing a path on structure (i.e., ramp) to connect the Key Point area to the Bay Bridge Trail. The path would be concrete or a wooden boardwalk. The path would be approximately 720 feet long and 18.5 feet wide.

Pier

The Project would include construction of a new pier extending from the far western end of the Park into the Bay, along the old Bay Bridge alignment. The pier would be 300 feet long and 30 feet wide. The pier would require approximately 24 new pilings in the Bay. The water depth under the proposed pier at the end of the pier would be between 3.9 feet at mean low tide and 8.75 feet at mean high tide.



Figure 5a: Key Point Area



Figure 5b: Key Point Area Visualization



Figure 5c: Key Point Area Visualization

Port Playground

Port Playground would be an active and passive recreation area along the southern shoreline (**Figure 6**). Park features in this area include a visitor center, several play areas, a sandy beach for launching kayaks, a boardwalk, a meadow and bluff walk, a meadow view point, and possibly view ride(s). These primary features are described below. The Port Playground area also includes landscaping, shoreline protection features, and an existing bio-retention basin (described in Other Features below). Port Playground is approximately 11 acres.

Visitor Center

The approximately 7,670-sf visitor center would be comprised of three separate structures connected with covered, open air walkways. The visitor center would be low profile (21 feet at highest point) and constructed with rammed earth wall and glass. The Visitor Center area covers approximately 41,530 sf.

- **Main Visitor Center.** The 3,210-sf conditioned[1] space would include a lobby, gift shop, ranger station, kitchen and café. The main visitor center would have glass walls facing the Bay.
- **Lockers and Restrooms.** The 2,985-sf unconditioned space would include men's and women's lockers and restrooms, as well as an outdoor terrace and gathering space.
- **Kayak Building**. The 1,475-sf unconditioned space would include storage for approximately 20-30 kayaks and 40 bicycles and an outdoor preparation area. The kayak building would have an open mesh metal enclosure facing the Bay.

Play Areas

Several play areas, picnic areas, and connecting pathways would be dispersed throughout the Port Playground.

- **Main Playground.** The main playground area, located west of the Visitor Center, would include different types of play equipment and climbing structures. Two concrete ramps would extend from the Visitor Center area down to the sandy playground area. The sandy area would be contained by a retaining wall (approximately 18" high by 24" wide), except on the west side where the sand would continue to the water's edge. The main playground would be approximately 24,740 sf.
- **Climbing Wall Area.** The climbing wall area would be located south of the Visitor Center. It would include a climbing wall, beach volleyball court, picnic tables and fire pits. The sandy area would be enclosed by a concrete retaining wall. Terraced concrete walls and artfully placed rock revetment walls would step down to the water's edge. The climbing wall area would be approximately 26,500 sf.
- **Skate Park.** The skate park would be located at the far south end adjacent to the existing Port of Oakland crane. It would have a concrete skate park surface with wood decking around the edge. Skate park features could include concrete curvilinear ledge elements, ramps, steps, and rails. It would be contained or surrounded by an existing seawall on the sides facing the water and by converted cargo containers on the sides facing the Port of Oakland crane. The skate park would be accessed by the Boardwalk extending from the Climbing Wall area. The skate park would be approximately 19,070 sf.
- **Climbing Structures.** Climbing structures (e.g., jungle gym), as well as picnic tables, would be located northwest of the Visitor Center and west of the Belvedere in the Windbreak area.

Kayak Beach

Kayak Beach would be located west of the Visitor Center. It would include an approximately 31,240 sf beach area, kayak launch facilities, and an ADA-compliant cement ramp (200 feet long, 19 feet wide)

[1] Conditioned spaces are designed to be heated or cooled.

extending from the south side of the Visitor Center to the water's edge. The beach area could also be accessed by other paths extending from the main playground and from meadow and bluff walk to the north.

Boardwalk

The Boardwalk would be a cement walkway between the climbing wall area and the skate park. It would extend along the water's edge above the seawall. It would include observation areas, benches, and picnic areas. There also could be provisions for a temporary food area, such as food trucks and carts. The boardwalk area is approximately 10,990 sf.

Meadow View Point

The meadow view point would be created on the north side of the visitor center to provide an elevated view overlooking the Bay. The meadow view point would be an approximately 1.75-acre (76,860-sf) natural grassy area that would elevate to approximately 19 feet above existing ground level.

Meadow and Bluff Walk

The meadow and bluff walk would be a large natural open space area with pathways, located south of the Windbreak. It would cover approximately 5 acres, extending from Key Point on the west to the main visitor center and kayak beach on the east. The grass would be kept mowed for pedestrian access.

Active View Feature

The Port Playground could include active view feature(s), such as elevated zip line, ropes course, gyro (observation) tower, or other. The specific location(s) within the Port Playground would be determined based on the type of view feature. It is possible an elevated zip line could be located east of the Bridge Yard, as shown in **Figure 4a**.



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Figure 6a: Port Playground Area Visualization



Figure 6b: Port Playground Area Visualization



Figure 6c: Port Playground Area Visualization

Radio Beach

Radio Beach, which is an existing area on the north side of I-80, would be for limited, passive recreation (**Figure 7**). The Project would include installation of a new access path from the Key Point area, restoration, and installation of fencing to protect environmentally sensitive areas. This area includes an existing informal gravel parking area, which would be improved with oyster shell mulch or comparable material (described in *Other Features* below). The Radio Beach area is approximately 5 acres.

Path to Radio Beach

The path to Radio Beach would be a new structure for pedestrians and bicyclists to access the existing Radio Beach area. The approximately 4,000-4,200-foot long path would extend from Key Point, under the Bay Bridge, to the easterly end of Radio Beach. The path is divided into the following five segments or areas (**Figure 7**): 1) boardwalk over water, 2) concrete over rip-rap, 3) boardwalk at grade, 4) boardwalk adjacent to gravel road, and 5) boardwalk to Radio Beach.[2] Segment 1 has two variances or options under consideration. The path would begin either: a) on land near the base of the new pier (approximately 500 feet long), or b) from the new pier (approximately 700 feet long).

The path would have approximately three ecological interpretation decks or landings with benches and ecological interpretation signage. The elevated path would include 4- to 6-foot high fencing (chain link or decorative metal railing), intended to keep visitors on the path.

Restoration

Restoration would include planting and habitat enhancement of approximately 4 acres in the Radio Beach area (**Figure 7**). The design goal would be to extend the Emeryville Crescent Marsh vegetation and the Upland Coast Scrub vegetation established adjacent to the Marsh into the disturbed areas of Radio Beach. This would require grading approximately 1 acre and removing trash, debris and invasive plant species in both upland and lowland areas.

Non-native invasive plants to be removed include: Bermudagrass (*Cynodon* sp.), invasive iceplant (*Mesembryanthum* sp.), fennel (*Foeniculum vulgare*), non-native mustard (*Brassica* sp.), French Broom (*Genista* sp.), Pampas Grass (*Cortaderia* sp.), Pepperweed (*Lepidium latifolium*) and non-native grasses.

Marsh restoration planting would include: pickleweed and pacific cordgrass. Lowland restoration will include Saltmarsh Baccharis (*Baccharis douglasii*), Saltgrass (*Distichilis spicata*), Juncus (*Juncus balticus*), and Carex (*Carex praegracilis*.) Upland coastal scrub plants will include California sagebrush (*Artemesia californica*), mugwort (*Artemisia douglasiana*), Coyote bush (*Baccharis pilularis*), bush monkey-flower (*Mimulus aurantiacus*), and native California blackberry (*Rubus ursinus*.) The final plant list would be determined by a qualified restoration ecologist and botanist.

All planting would be monitored for establishment and maintained for a duration to be determined by the restoration ecologist. Establishment of the plantings would be measured according to the following baseline criteria:

- Pampas grass, fennel, broom, and ice plant must be eradicated from replanted areas for the duration of monitoring
- Upland replanted areas must achieve 60% cover of native plant species by the end of the monitoring period
- Asian mustard, pepperweed, velvet grass and bermuda grass must cumulatively not exceed 5% of cover for the duration of the monitoring

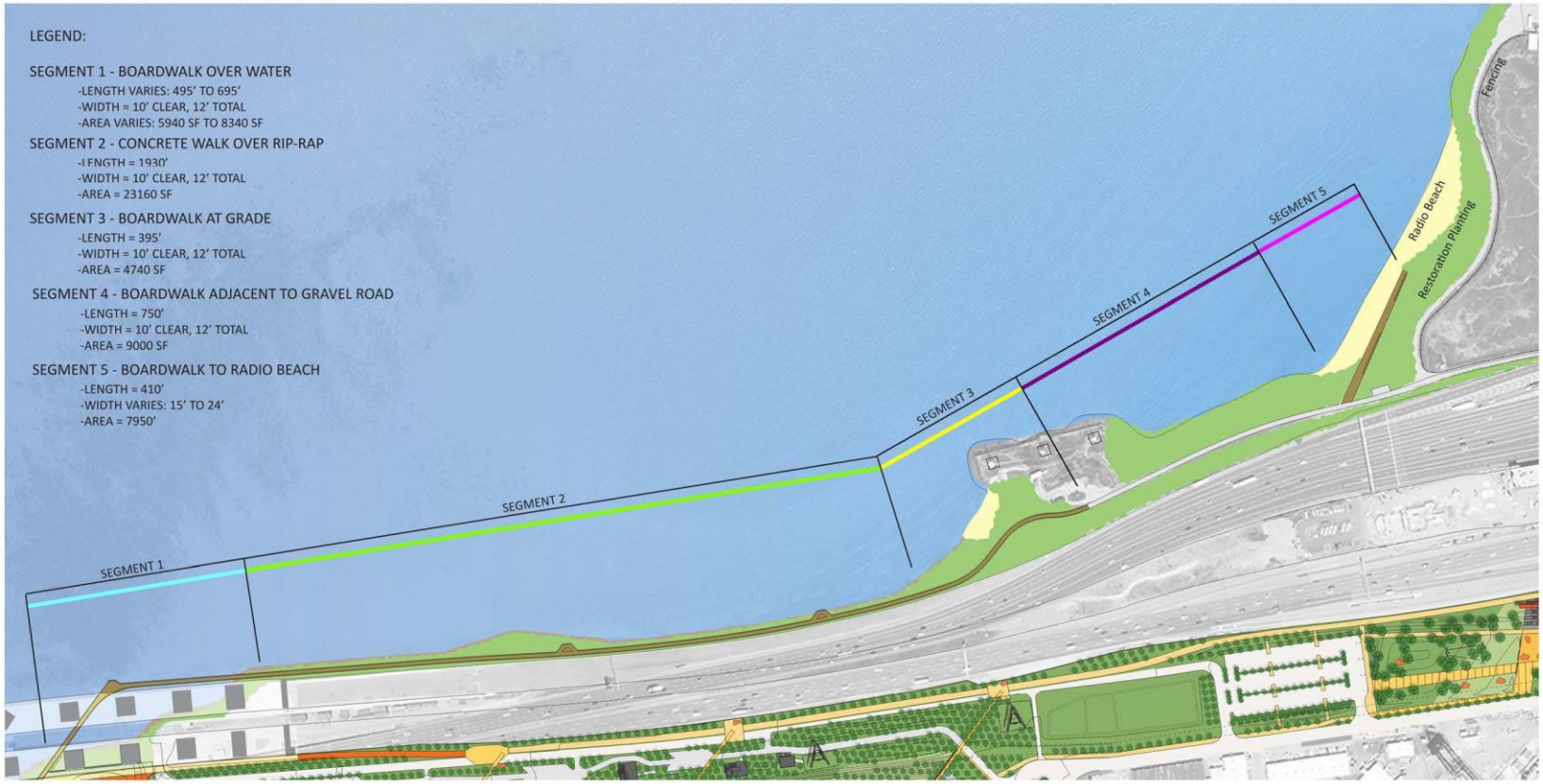
[2] Alternatively, these segments could be a synthetic material like Trex.

- Unsuccessful areas with little or no cover must be identified and adaptive measures to promote vegetation success implemented

There would be interpretive signage along the marsh habitat area and restoration area edge to discourage encroachment onto sensitive habitats.

Fencing

The Project would include installation of a permanent fence to protect wildlife and the environmentally sensitive existing tidal marsh area (**Figure 2**). The fence would be approximately 1,670 feet long and likely 6–8 feet high. The fence type has not been determined but could be chain link, decorative metal, or some other material.



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Figure 7a: Radio Beach Area

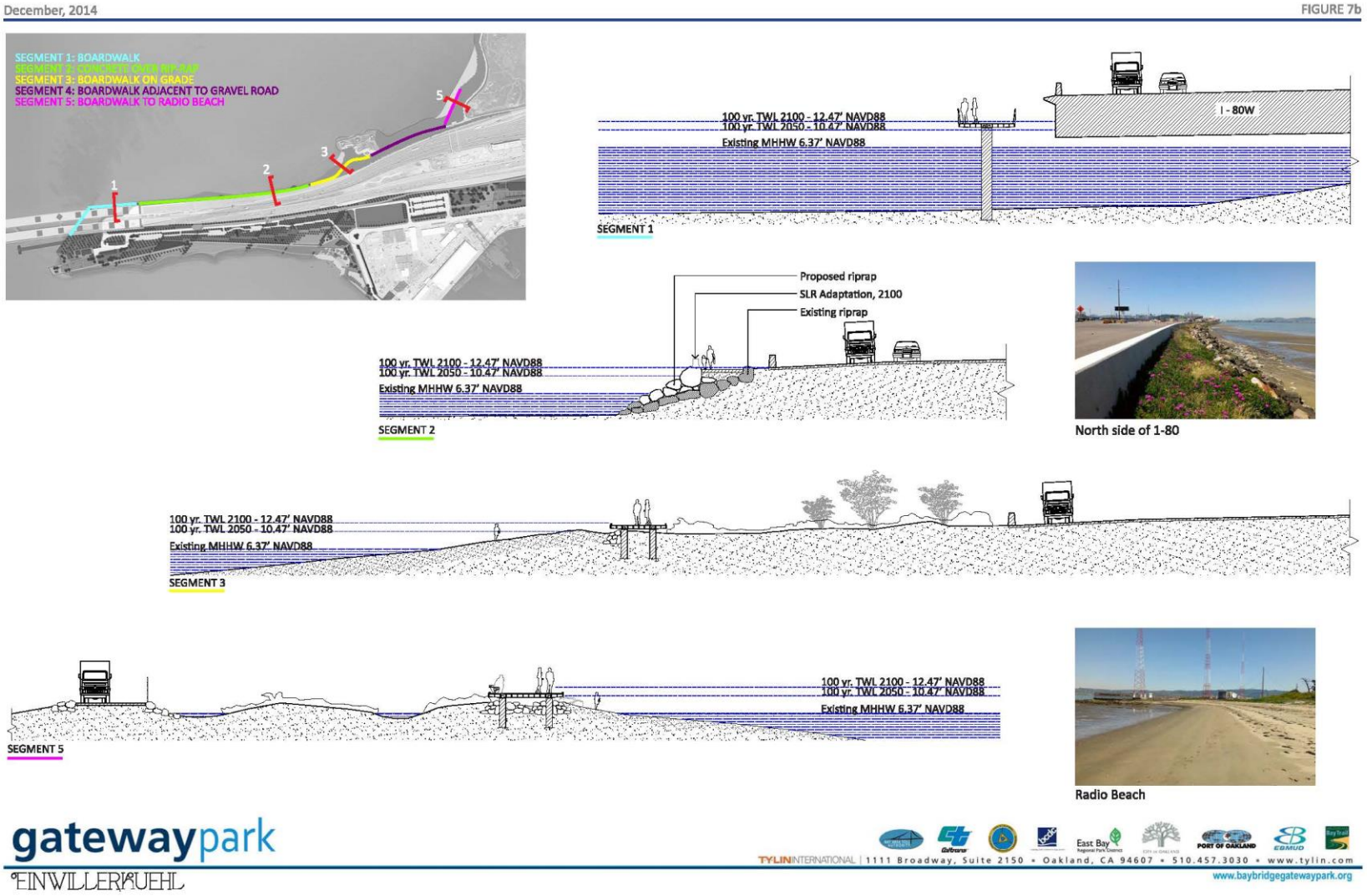


Figure 7b: Radio Beach Area Cross Sections

Other Features

Windbreak/Tree Buffer

The Park would include an approximately 13-acre Windbreak/Tree Buffer that would extend along the south side of I-80 in the Port Playground and Key Point areas (**Figure 3**). The Windbreak/Tree Buffer would include approximately 1,500 trees on 14 acres along the south side of I-80. The purpose is to block and diffuse vehicular air emissions from I-80 and provide a visual identify for the Park, a visual buffer between the Park and I-80, and shade and structure for circulation within the Park. The trees would be planted to provide view lines to the water and Port of Oakland.

The trees would be primarily evergreen and would achieve a maximum height of 45-50 feet, which is below the bottom edges of existing billboard signs. Qualified botanists would determine evergreen tree species based on the ability to thrive in marine conditions, tolerate occasional salt water intrusion and strong winds, and lose and replace leaves. Existing vegetation that has survived and thrived on the site includes including Monterey cypress, Torrey Pines, and Eucalyptus as well as other species.

Landscaping

Landscaping would be planted throughout the Park areas south of I-80. Additionally, landscaping could be planted under the freeways east of the Park (I-880 and the I-880/80/580 maze) to improve aesthetics and air quality for park visitors and West Oakland residents (**Figure 3**). A general description of the planned landscaping is provided in **Table 2**.

Table 2. General Description of Planned Landscaping

Park Area	Plantings
Bridge Yard	Large native Oak trees (approximately 35), native and endemic meadow grasses, vegetative filtration plantings for storm water treatment, and extension of the windbreak planting (approximately 375 trees).
Key Point	Large scale vegetative filtration plantings for storm water treatment in an upland marsh, as well as the extension of the windbreak planting (approximately 150 trees).
Port Playground East (active recreation area)	Vegetative filtration plantings for storm water treatment, upland plantings at the playground, and possibly container planting.
Port Playground West (meadows and bluff walk)	Native and endemic meadow grasses, coast sage scrub, upland bluff and low land bluff plantings, vegetative filtration plantings for storm water treatment, as well as the extension of the windbreak planting (approximately 950 trees).
Under Freeways (I-880 and I-880/80/580 maze)	Native and endemic meadow grasses, coast sage scrub, upland bluff and low land bluff plantings, vegetative filtration plantings for storm water treatment.

Lighting

Park hours would be dawn to dusk, but a minimal amount of lighting would be provided for security at dusk and for special events that could be held at the Bridge Yard. Lighting would be a combination of low level foot lighting along paths, exterior lighting on buildings directed downward, and 20-foot steel light standards in Bridge Yard area and in parking lots. There would be no lighting in the Radio Beach area.

Parking

Public parking would be provided with 255-755 parking spaces in different areas of the park. Additionally, up to 200 additional parking spaces could be provided by expanding the 100-space park and ride lot being proposed as part of the separate SFOBB Regional Bicycle/Pedestrian Connection Project. Refer to **Table 3** and **Figure 9**.

It is noted that the proposed parking plan is subject to change and refinement over time, given the project's horizon year of 2030 and changing conditions and availability of potential off-site parking locations. The Draft EIR analysis will analyze a reasonable range of anticipated parking locations that would serve the project.

Table 3. Proposed Parking

Parking Area	Location	Number of Spaces	Other Features
A	East of Bridge Yard building	0-200	Possibly trees/landscaping. A parking lot is planned at this location as part of a separate Project.[1]
B	West of Bridge Yard building	200	Possibly trees/landscaping.
C	Windbreak	50-150	Parking dispersed in three areas of the Windbreak.
D	Radio Beach	5	Parking located where there is currently informal parking. (e.g., oyster shells)
Subtotal		255-555	
E	Wood Street	0-200	Up to 200 additional spaces could be added to the planned 100-space parking lot, proposed as part of a separate Project[2] that would provide a bike path connection from the Wood Street parking lot in West Oakland to the Bay Bridge Trail near the proposed Park.
Total		255-755	

[1]Caltrans is planning to construct a parking lot at this location as part of a separate Project.
[2]Caltrans and Bay Area Toll Authority are proposing the San Francisco Oakland Bay Bridge Bicycle/Pedestrian Connection Project (Path) in West Oakland. It includes an approximately 6,030 foot long bicycle/pedestrian path extending between Mandela Parkway on the east and the new Bay Bridge Trail leading to the new East Span of the Bay Bridge on the west.

Way Finding Elements

Way-finding elements include interpretive and directional signage along pathways throughout the Park. Additionally, way-finding elements could include old Bay Bridge artifacts and could be located along Burma Road.

Shoreline Protection

Shoreline protection features would be provided along most shoreline areas to minimize erosion. Shoreline protection features would be a combination of gently graded slope, vegetation plantings, riprap, retaining walls, and revetment walls above and below the water line, as described in **Table 4** and shown in **Figure 9**. Shoreline protection features would be completed as the associated Park areas are developed based on Project phasing (**Table 5** in *Project Phasing* below).

Table 4. Proposed Shoreline Protection	
Location	**Protection Measures**
South Shoreline (general)	4:1 slope with small beach area, plantings, and revetment[1] wall below water line.
South Shoreline (Kayak Beach)	4:1 slope with larger beach area (plantings?) and revetment wall below water line.
South Shoreline (Climbing Wall area)	4:1 slope with transition from stone/concrete terrace wall and revetment wall above water line to rip rap embankment below water line.
South Shoreline (Boardwalk area)	4:1 slope revetment wall above water line, concrete terrace wall at water line, and rip rap embankment below water line. Existing concrete wall retained.
South Shoreline (Key Point)	Concrete sea wall and retaining wall at EBMUD outfall.
North Shoreline (Radio Beach)	None
Note: Shoreline protection features are shown in **Figure 9**. [1] Revetments are sloping structures placed on banks to absorb the energy of incoming water, and are used as a solution for coastal erosion defense in areas where crashing waves may otherwise deplete the coastline.	

Sea Level Rise Adaptation

The Project area is relatively flat, elevated approximately 8-12 feet above the mean lower low water, and surrounded by the Bay on the north, west and south sides. Due to proposed park improvements and anticipated sea level rise (CH2M Hill 2014), a large portion of the park south of I-80 would be elevated by 2-10 feet by adding approximately 213,500 cubic yards of fill. The Park areas would be elevated when they are developed based on Project phasing (**Table 5** in *Project Phasing* below).

Retention Basins/Stormwater Drainage

The existing retention basin, located south of I-80 and west of the Bridge Yard, would be retained with no changes. It was constructed to receive stormwater runoff from the Bay Bridge toll plaza area. Proposed Park features would be designed so there is no impact to the existing basin.

Three additional retention basins (biofiltration swales) would be constructed at the west end in the Key Point area to treat stormwater runoff from the Park Project. The biofiltration swales would be designed to include a layer of imported biofiltration soil and, if feasible, an underdrain system. The feasibility of underdrain systems would be assessed based on the existing and proposed drainage facilities and site constraints. Specifically, groundwater levels would need to be assessed for underdrain systems. Soils in the facility would need to meet biotreatment soil specifications approved by the Regional Water Quality Control Board. A minimum percolation rate of 5 inches per hour and a maximum percolation rate of 10 inches/hour are required. Planting soil layer would be at least 18 inches deep. Shrubs and small trees would be placed to anchor the bioretention area cover, based on guidance in the Alameda County C.3 Storm Technical Guidance (Appendix B) dated May 2013. A side slope of 4:1 or flatter would be used. The biofiltration swales would be integrated as part of the Park landscaping and would not be fenced.

Stormwater runoff from most of the new impervious path areas would sheet flow to nearby vegetated areas. Overall, the Project would discharge into unlined channels and ditches which would be tied into existing drainage systems, which are anticipated to have sufficient capacity to accommodate existing stormwater runoff without requiring significant upgrade or modification. Flow would eventually

discharge to the Bay. The objective of the Park drainage design would be to limit the flow and velocities such that existing conditions and drainage patterns are maintained.

Hazardous Waste Clean-up

The Project area includes lands previously used by or adjacent to industrial activities associated with the Port of Oakland, the Oakland Army Base, and Caltrans Maintenance Facility. There is ongoing hazardous materials remediation onshore. This Project assumes that all onshore hazardous materials would be remediated to appropriate levels for proposed uses prior to or as part of park construction, and that it would be completed prior to park operation.

Dogs/Pets

Dogs and pets would be allowed in the park on the south side but would be prohibited on the north side (Radio Beach).



Figure 8: Parking Areas

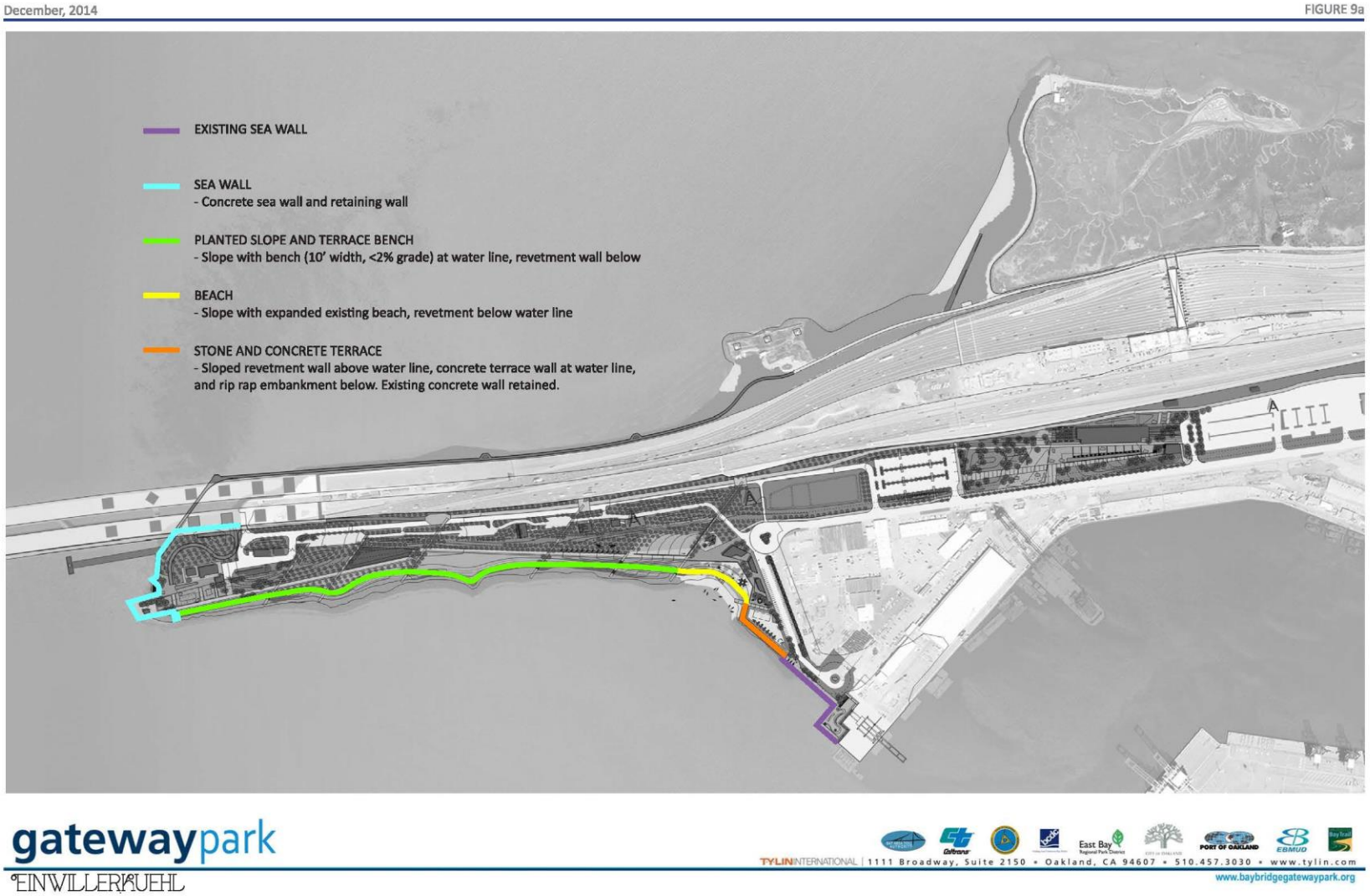


Figure 9: Shoreline Protection Features

Project Phasing

The Park would be developed in three phases over 15 years, as funding becomes available, with anticipated buildout in 2030 (**Table 5)**.

Table 5. Planned Park Development Phases	
Phase 1 (Approximately 2 Years)	
Bridge Yard	
A	Arrival Plaza
B	Historic Display
C	Outdoor Yard Event Space
D	Bridge Yard Building Improvements
E	Indoor/Outdoor Auditorium
Other	
	Parking Area A (east of Bridge Yard building)[1]
	Parking Area B (west of Bridge Yard building)
Phase 2 (Approximately 2 Years)	
Key Point	
A	Building Renovation
B	Path on Structure to Bay Bridge Trail
C	Pier
Other	
	Windbreak/Tree Buffer
	Parking Area C (in Windbreak)
	Shoreline protection – West Shoreline
Phase 3 (Approximately 3 Years)	
Port Playground	
A	Visitor Center
B	Playgrounds
C	Kayak Beach
D	Boardwalk
E	Meadow View Point
F	Meadow and Bluff Walk
G	Active View Features
Radio Beach	
A	Path to Radio Beach
B	Restoration
C	Fencing
Other	
	Parking Area D (Radio Beach informal parking area)
	Parking Area E (Wood Street parking lot expansion)
	Shoreline protection – South Shoreline
	Landscaping beneath the freeways
[1]A parking lot at this location may be constructed by Caltrans as a separate Project serving Caltrans facilities or as part of the Park Project.	

Operations and Maintenance

It is estimated that with all Park areas developed, there would be approximately 15-30 employees based on the following assumptions. There would be 4-10 employees at the visitor serving uses in the Key Point area, 6-13 employees at the visitor serving uses in the Port Playground area, and 5-7 employees for other operations and maintenance needs elsewhere in the Park.

It is estimated that with all Park areas developed, there could be 500,000 visitors annually (1,370 daily average)[3] based on moderate use and as many as 2,000,000 annually (5,479 daily average)[4] based on heavy use.

Alternatives

Details for the Passive Park Project and the Active Park Project are still being refined.

No Project

Under the No Project alternative, there would be no park or improvements at the Project site.

Passive Park Project

Under the Passive Park Project alternative, there would be minimal improvements to allow access to the renovated Bridge Yard Building and to the shoreline. There would be no improvements for active recreation, no new access to Radio Beach, no dogs/pets allowed anywhere in the park, and minimal parking provided.

In the Bridge Yard area, the proposed improvements would be similar to the proposed project, except no indoor/outdoor auditorium. In the Port Playground area, there would be only pathways, benches and restrooms. There would be no visitor center or other recreation activities or improvements. In the Key Point area, there would be a new pier and a path to the Bay Bridge Trail, similar to the proposed project. In the Radio Beach area, there would be restoration and fencing to protect the existing tidal marsh area, but there would be no new access path and no parking improvements. Refer to **Table 6** for more information about this alternative.

Active Park Project

Under the Active Park Project alternative, there would be the same general improvements for passive and active recreation as the proposed project. The kayak launch would be located at the far western end by the Bay Bridge in the Key Point area, instead of the Port Playground. Additionally, a berm would be incorporated into the Windbreak/Tree Buffer area south of I-80, dogs/pets would be allowed on both the north (Radio Beach) and south sides of the park, and there would be more parking throughout the park. Refer to **Table 6** for more information about this alternative.

[3] Per TYLIN based on the HRA Gateway Findings Report 130522 Eva provided to Fehr & Peers and ICF in 5/27/14 email.

[4] Per Brian Chambers, PW, who said to verify with Sarah K.

Table 6. Build Alternatives				
Park Area and Primary Features		**Proposed Project**	**Passive Park Alternative**	**Active Park Alternative**
Bridge Yard		The Bridge Yard is a destination recreation and event center in the core park area.		
A	Arrival Plaza	Arrival plaza for bicycles, cars, and buses.	Same as Proposed Project	Same as Proposed Project
B	Historic Display Plaza	Display area for historic train from the Key System, picnic tables, and shade canopy with string of lights.	Same as Proposed Project	Same as Proposed Project
C	Outdoor Yard Event Space	Outdoor Yard event space for small gatherings to large events. Small gatherings could include art displays in the meadow and informal performances for approximately 200 people. Large events could include movies in the meadow for 500-1,000 people and concerts for 1,000-1,700 people.	Same as Proposed Project	Same as Proposed Project
D	Bridge Yard Building Improvements	Minor internal improvements and use of the renovated Bridge Yard Building.	Same as Proposed Project	Same as Proposed Project
E	Indoor/Outdoor Auditorium	The Project could also include a new indoor/outdoor auditorium, which would be embedded into the landscape, for approximately 100-200 people, located adjacent to the building at the Bridge Yard. This auditorium may be used for events or training purposes.	None	Same as Proposed Project
Key Point		Key Point would be a passive recreation area and would include a landing for bicycle and pedestrian traffic from the Bay Bridge.		
A	Building Renovation	Renovation of two existing structures at far west end. The existing historic Key Building would be a café and bookstore. The existing historical Bay Bridge Oakland Substation would be artist studio, ranger station, conference room, and restrooms.	No renovation or park use of buildings.	Same as Proposed Project
B	Path to Bay Bridge Trail	Path on structure (e.g., boardwalk) to connect the Key Point area to the bicycle/pedestrian path on the Bay Bridge.	Same as Proposed Project	Same as Proposed Project
C	Pier	Pier extending into Bay from far western end along old Bay Bridge alignment. The pier would be 300 feet long and 30 feet wide.	None	Same as Proposed Project

Table 6. Build Alternatives				
Park Area and Primary Features		**Proposed Project**	**Passive Park Alternative**	**Active Park Alternative**
Port Playground		The Port Playground is a destination for active and passive recreation along the shoreline.		
A	Visitor Center	New visitor center comprised of three separate structures connected with covered, open air walkways. Three structures are: 1) main lobby with information on park facilities and exhibits, gift shop, and café; 2) lockers and restrooms; and 3) kayak building with bike and kayak storage.	No visitor center but bathroom provided and minor kiosk exhibits included.	Same as Proposed Project
B	Play Areas	There would be several play areas, picnic areas, and connecting pathways dispersed throughout the Port Playground. These include the Main Playground west of the visitor center, Climbing Wall Area south of visitor center, Skate Park at southern end adjacent to existing Port crane, and Climbing Towers northwest of the visitor center in the Windbreak.	None (pathways/benches only)	Same as Proposed Project
C	Kayak Beach	Sandy beach with kayak launch facilities and ADA-compliant cement ramp from visitor center.	None	None (Kayak launch at Key Point)
D	Boardwalk	Cement walkway between the climbing wall area and the skate park. It would extend along the water's edge above the seawall and include observation areas, benches, and picnic areas.	None (pathways/benches only)	Same as Proposed Project
E	Meadow View Point	Topographical view point created on the north side of the visitor center to provide an elevated view overlooking the Bay.	None	Same as Proposed Project
F	Meadow and Bluff Walk	Large natural open space area with pathways located south of the Windbreak, extending from Key Point on the west to the main visitor center and kayak beach on the east.	Same as Proposed Project	Same as Proposed Project
G	Active View Feature	Possible include active view feature(s), such as elevated zip line, ropes course, gyro (observation) tower, or other.	None (pathways/benches only)	Same as Proposed Project
Radio Beach		Radio Beach is a restoration and preservation area with limited recreation use.		
A	Path to Radio Beach	Path on new structure extending from Key Point under the Bay Bridge to the easterly end of Radio Beach for bicycle and pedestrian access.	None	Same as Proposed Project

Table 6. Build Alternatives				
Park Area and Primary Features		**Proposed Project**	**Passive Park Alternative**	**Active Park Alternative**
B	Restoration	Restoration planting and habitat enhancement of approximately 4 acres.	Same as Proposed Project	Same as Proposed Project
C	Fencing	Permanent fence to protect wildlife and the environmentally-sensitive existing tidal marsh area.	Same as Proposed Project	Same as Proposed Project
Other Features				
A	Windbreak/Tree buffer	Trees would be planted between I-80 and the core park area to block and diffuse vehicular air emissions, provide visual buffer, and shade.	Same as Proposed Project	Vegetative buffer with berm and trees between I-80 and core park area
B	Landscaping	Landscaping would be planted throughout the park on the south side of I-80 and possibly under the freeways east of the park.	Similar to Proposed Project in the Bridge Yard, but little or none in other areas.	Same as Proposed Project or more
C	Lighting	Lighting will be a combination of low level foot lighting along paths, exterior lighting on buildings directed downward, and 20-foot steel light standards in Bridge Yard area and in parking lots. There would be no lighting in the Radio Beach area.	Similar to Proposed Project in the Bridge Yard, but little or none in other areas.	Same as Proposed Project 2 or more
D	Parking			
	Area A (east of Bridge Yard building)	0-300 parking spaces	0 parking spaces	300 parking spaces
	Area B (west of Bridge Yard building)	300 parking spaces	300 parking spaces	300 parking spaces
	Area C (in Windbreak)	50-150 parking spaces	0 parking spaces	50-150 parking spaces
	Area D (Radio Beach)	5 parking spaces (in the existing informal parking area)	0 parking spaces	20 parking spaces
	Area F (Wood Street at West Grand Avenue)	0-200 parking spaces added to the 100-space parking lot planned for Wood Street.	0 parking spaces added	200 parking spaces added
E	Way Finding Elements	Way-finding elements include interpretive and directional signage along pathways throughout the Park. Additionally, way-finding elements could include old Bay Bridge artifacts and could be located along Burma Road.	Same as Proposed Project	Same as Proposed Project

Table 6. Build Alternatives				
Park Area and Primary Features		**Proposed Project**	**Passive Park Alternative**	**Active Park Alternative**
F	Shoreline Protection	Shoreline protection features would be provided along most shoreline areas to minimize erosion. Shoreline protection features would be a combination of gently graded slope, vegetation plantings, riprap, retaining walls, and revetment walls above and below the water line (**Table 4** and **Figure 9)**.	Less fill than Proposed Project	Same as Proposed Project
G	Sea Level Rise Adaptation	Because of anticipated sea level rise, the entire south side of the Park (south of I-80) would be elevated by 2-10 feet by adding 213,500 cubic yards of fill.	Less fill than Proposed Project	Same as Proposed Project
H	Retention Basins/Stormwater Drainage	The existing retention basin south of I-80 and would be retained. Three additional retention basins (biofiltation swales) would be constructed at the west end in the Key Point area to treat stormwater runoff from the Park Project.	Fewer new basins than Proposed Project	Same as Proposed Project
I	Hazardous Waste Clean-up	Assume clean prior to construction and operation	Same as Proposed Project	Same as Proposed Project
J	Dogs/Pets (Park-Wide)	Dogs and pets would be allowed in the park on the south side but would be prohibited on the north side (Radio Beach).	Dogs and pets prohibited everywhere	Dogs and pets allowed throughout park, on north and south sides
[1] Burma Road would be realigned as part of a separate Project by the Oakland Global Project team.				

Permits and Approvals Needed

The proposed project may require permits and/or approvals and/or may obtain funding from the federal, state and local agencies, and/or private entities. The anticipated permits and approvals needed are listed in **Table 7**.

Table 7. Permits and Approvals Needed

Agency	Permit/Approval
Federal	
National Marine Fisheries Service	Section 7 Consultation for Threatened and Endangered Species Review and Comment on 404 Permit
United States Army Corps of Engineers	Section 404 Permit for filling or dredging waters of the United States
United States Army Department of Defense	Property transfer
United States Coast Guard	Section 10 Rivers and Harbors Act of 1899 - permit for structures in navigable water
United States Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species Review and Comment on 404 Permit
State	
California Department of Fish and Wildlife	Section 2081 Permit for Threatened and Endangered Species
California Department of Transportation	Encroachment permit on roadways and land
California Department of Toxic Substances Control	Coordination for Army Base clean-up. Potential hazardous materials cleanup oversight
California Office of Historic Preservation	Historical resources
California Transportation Commission	Gateway Park Working Group member
Regional and Local	
Association of Bay Area Governments	Coordination for Bay Trail Project Gateway Park Working Group member
Bay Area Toll Authority (BATA)	CEQA lead and Gateway Park Working Group member
East Bay Municipal Utility District (EBMUD)	Encroachment on outfall facilities Gateway Park Working Group member
East Bay Regional Park District (EBRPD)	Future owner of land and likely park operator Gateway Park Working Group member
City of Oakland	Encroachment on city roadways Gateway Park Working Group member
Port of Oakland	Encroachment on port land Gateway Park Working Group member
San Francisco Bay Conservation and Development Commission (BCDC)	Gateway Park Working Group member Major permit for shoreline improvements and structures in water)
San Francisco Regional Water Quality Control Board	Section 401 Water Quality certification, Construction NPDES, Water Discharge Permit

Construction Phasing and Methodology

This section describes the anticipated construction associated with the proposed development.

Construction Duration and Phasing

The Project would be developed in three phases over 15 years (2015-2030), as described in **Table 5** above.

Grading

The park area on the south side of I-80 would be elevated 2-10 feet for protection from anticipated future sea level rise. To accommodate proposed development, grading would occur in some of the park areas to develop park features. The estimate cut and fill required for Project development is shown in **Table 8**. Fill material would be supplied from cut material on site as well as imported fill.

Table 8. Estimated Cut and Fill Material Required for Park Development

Phase	Cut	Fill
1	11,000 cy	30,000 cy
2	41,000 cy	35,000 cy
3	15,000 cy	101,000 cy

Construction Hours

The majority of construction activities would be limited to between the hours of 8 a.m. and 6 p.m., Monday through Saturday. There would be no construction on Sundays or national holidays. The path to the Bay Bridge Trail in the Key Point area may require a limited amount of night time work.

Construction Vehicle Access

During all three development phases, construction vehicles would use the following roadways primarily: Burma Road, Maritime Street, West Grand Avenue, and I-80 and I-880. Additionally, if the Wood Street parking lot is expanded and landscaping is installed under the freeways during Phase 3, vehicles would also use Frontage Road, Wood Street, Peralta Street, and 20th Street.

Staging Areas

All construction staging areas would be on disturbed areas within the Project site, at least 25 feet from the water's edge with protective hale bales in place.

III. PROJECT LOCATION AND SETTING

The Project location and setting provides the context for determining the type and severity of changes to the existing visual environment. The terms *visual character* and *visual quality* are defined below and are used to further describe the visual environment. The Project setting is also referred to as the corridor or Project corridor which is defined as the area of land that is visible from, adjacent to, and outside the highway right-of-way, and is determined by topography, vegetation, and viewing distance.

Figure 1 identifies the regional location of the proposed project and Project vicinity. The regional visual setting of the Bay Area is scenic. It combines water, islands, bridges, mountains, and urban skylines. The Bay is a rich marine resource. It provides navigable waterways for commerce and recreation and habitat for numerous species.

The Bay includes four major islands: Alcatraz, Angel Island, Treasure Island, and Yerba Buena Island.

Seven bridges span the Bay, connecting communities and constituting significant scenic resources in their respective areas. These include: Golden Gate Bridge, Bay Bridge, Richmond-San Rafael Bridge, San

Mateo Bridge, Dumbarton Bridge, Benicia Bridge, and Carquinez Bridge. These bridges all span significant stretches of open water and are highly visible from vantage points around the Bay. These bridges also provide views out and around to the scenic resources associated with the Bay Area landscape. These include: Mount Tamalpais and the hills of the Marin headlands are to the northwest; the East Bay Hills of Oakland and Berkeley are located to the east; and the Santa Cruz Mountain Range along the Peninsula is located to the southwest. These hills and ranges surround the Bay Area and provide visual, topographical interest.

The city skylines of Oakland and San Francisco also complement the region's natural and urban setting. Regional urban development in the cities of Berkeley, Emeryville, Oakland, and Alameda are also visible and are largely concentrated between the East Bay Hills to the east and the Bay to the west. The East Bay Hills are a dominant topographic feature in the area.

The Bay Trail is an important recreational feature in the region, and it parallels a significant portion of the Bayshore in all nine Bay Area counties. The Bay Trail is a series of existing and planned regional hiking and bicycle trails. The Bay Trail will eventually continuously connect around a 400-mile perimeter of the San Francisco and San Pablo Bays (ABAG 1999). The closest existing Bay Trail segments to the Project area are: 1) the Bay Bridge Trail, 2) the off-street paved trail from Emeryville to the Bay Bridge Trail, 3) the off-street paved trail along Burma Road from Maritime Street to the Bay Bridge Trail; and 4) the off-street and on-street paved trails along Mandela Parkway. Each of these segments extends adjacent to and within the Project area.

Transportation corridors are also a notable feature within the region. These include six interstate freeways: I-80, I-280, I-380, I-580, I-880, and I-980. These also include numerous state routes, local highways, surface streets, and several rail corridors.

Figure 2 identifies the Project location. The Park project area is located in the East Bay, bordered by the San Francisco Bay on its north, west, and south sides. The visual and urban design character within this flat Bayfront area is influenced by both the natural landscape setting along the Bay and the mix of manmade elements in the area. Manmade elements include the Port of Oakland, other industrial uses, public utilities, and staging areas and temporary structures for the Bay Bridge Project. Facilities and easements are owned, maintained, and/or controlled by the EBRPD, Caltrans, Port of Oakland, City of Oakland, and the EBMUD.

Due to the various utilities agencies in the area, much of the Park project area is traversed with existing infrastructure that may or may not be moved as part of the development process. Currently, the site serves mainly as a Caltrans maintenance yard and staging area for the removal of the old Bay Bridge. The site contains several small temporary buildings for this construction and permanent buildings that were at the site prior to construction of the bridge. Permanent buildings in the Park project area also include Caltrans electrical substations, EBMUD dechlorination and transition structures for a main sewer outfall, and a PG&E substation and electrical facility. Cellular towers and large digital and conventional billboards are located adjacent to eastbound I-80 and are dominants feature at the site.

The Park project area includes three historic structures: the Bridge Yard Building, Key Pier Substation, and Bay Bridge Oakland Substation. The Key Pier Substation, constructed in 1925, is eligible for the National Register of Historic Places (NRHP) as a rare surviving component of the historic Key System railway. The Caltrans Substation, which is not considered historic, was constructed in 1939 next to the Key System Substation. Both buildings at the Oakland Touchdown are constructed out of reinforced concrete. The Bridge Yard Building was formerly called the Interurban Electric Railway Bridge Yard Shop (IERBYS) and the Sawtooth Building, and is discussed under the name IERBYS in the Gateway Park

Project Historical Resources Evaluation Report. The Bridge Yard Building was built in 1938 and is a historically significant structure listed on the NRHP. This structure is a steel frame building that originally functioned as a rail shop and yard and currently supports maintenance and paint needs for the new Bay Bridge construction.

Visibility and views are predominant characteristics of the Park project area. The Project area features panoramic background views of the following: downtown Oakland, downtown San Francisco, Yerba Buena/Treasure Island, the East Bay Hills, the Santa Cruz Mountain Range, Mount Tamalpais, and the Golden Gate Bridge. Views are particularly prominent from the Key Point and Radio Beach park areas, looking west towards San Francisco. Given its proximity, the eastern spans of the current and future Bay Bridge are principle features and represent a gateway to Oakland and the East Bay. Views of the Port of Oakland are also highly visible to the south. The Port includes 10 container terminals, two intermodal rail facilities, and several highly-visible gantry cranes, some over 200 feet in height. Depending on daily port activities, large cargo ships are often visible from the Gateway Park Area.

A portion of the Project area (outside the Park boundaries) is located under the major transportation hub created by the intersection of three interstate freeways: I-80, I-880, and I-580, known as the MacArthur Maze. This portion of the Project area is located within an industrial area and is characterized by warehouses on the western edge of Oakland and associated with the Port. Due to the large number of vehicles that travel on these freeways each day, the Project area is visible to motorists that pass quickly by the site. I-80 is an eight- to ten-lane freeway that serves San Francisco and the East Bay. North of Emeryville, I-80 runs in a north-south direction. At the MacArthur Maze, I-80 turns and travels in an east-west direction between Oakland and San Francisco. This segment of I-80 is an eligible state scenic highway, but not officially designated (Caltrans 2013). However, it is a city designed scenic route (City of Oakland 1974). I-880 is a north-south eight-lane freeway extending from Oakland to San Jose. I-580 is an east-west eight-lane freeway extending from Oakland to Stockton.

IV. ASSESSMENT METHOD

This visual impact assessment generally follows the guidance outlined in the publication *Visual Impact Assessment for Highway Projects* published by the Federal Highway Administration (FHWA) in March 1988.

The following steps were followed to assess the potential visual impacts of the proposed project.

A. Define the Project location and setting.

B. Identify visual assessment units and key views.

C. Analyze existing visual resources, resource change and viewer response.

D. Depict (or describe) the visual appearance of Project alternatives.

E. Assess the visual impacts of Project alternatives.

F. Propose measures to offset visual impacts.

Using the concepts and terminology, described above, and the criteria for determining significance (see *Section VI*, *Visual Resources and Resource Change*, below), analysis of the visual effects of the proposed project is based on the following methods.

A. Observation from vantage points, including neighboring buildings, property, and roadways (conducted April 11, 2013).

B. Photographic documentation of key views of and from the Project site, as well as the regional visual context.

C. A review of Project construction drawings.

D. A review of the Project in regard to compliance with state and local ordinances and regulations and professional standards pertaining to visual quality.

E. Evaluation and analysis of photographic simulations.

V. VISUAL ASSESSMENT UNITS AND KEY VIEWS

The Project corridor was divided into a series of "outdoor rooms" or *visual assessment units*. Each visual assessment unit (VAU) has its own visual character and visual quality and is typically defined by the limits of a particular viewshed.

For this analysis, the area surrounding the Park project area has been subdivided into three VAUs, based on specific vantage points and differing sensitivities of those affected by the proposed project. The VAUs are designated as Radio Beach, Portside, and Maze (see **Figure 10**). Note that the portion of the Park project area along Burma Road would only receive a limited amount of wayfinding elements as a part of the proposed project. These changes would be very minor. Therefore, these changes are discussed under the Portside VAU, rather than a separate VAU.

Key views, shown in Section VIII (*Visual Impact*), have been chosen for their representation of the VAU within which they are located and those viewers affected.

For this Project, the following three VAUs and their associated key views, have been identified.

- **Radio Beach:** This VAU is located north of the I-80 corridor and extends to the Bay shoreline. Radio Beach is owned by the Port of Oakland and EBRPD land to the east. The topography is flat, only rising a few feet above sea level. I is visually separated from the rest of the Park areas by I-80. Radio Beach includes natural features such as low-lying groundcover and shrubs typical of a Bay habitat, native vegetation, a large amount of invasive iceplant, marshes, wetlands, and a narrow, sandy beach. The only manmade elements in this area include a paved service road that parallels I-80 along the southern edge of the VAU, adjacent utility poles and wires, nine large radio towers, and scattered small portable buildings.

  Due to the relatively flat topography of Radio Beach and limited development in the immediate vicinity, foreground, middleground, and background views are visible throughout the site. Views to the north and west are panoramic and include: the Bay, the Bay Bridge, Treasure Island, the Marin Headlands, and the Golden Gate Bridge (refer to **Figure 11**, Photos 1 and 2). Mid-range views to the east include: the onsite radio towers, urban development and Marina Park in Emeryville, and Aquatic Park in Berkeley, while the East Bay Hills tower in the background (refer to **Figure 11**, Photo 3). Foreground views to the south include: I-80, the Toll Plaza, Caltrans buildings in the I-80 center median, structures at the Portside VAU, and cranes in the Port of Oakland (refer to **Figure 11**, Photo 4). Middleground and background views are channelized through the built environment and feature the East Bay Hills and the Santa Cruz Mountain Range. Current lighting in this VAU is limited to small lights on the radio towers and the rest of this VAU is unlit but receives lighting from the I-80 corridor and the Port.
- **Portside:** This VAU is located south of the I-80 corridor and extends to the outer harbor of the Port shoreline. The industrial paved areas adjacent to I-80, north and south of Burma Road, are owned by

Caltrans. The natural area south of Burma Road, along the shoreline, is owned by the EBRPD. Dock 7 of the Port is located south of Burma Road and east of the natural area. While this area is located outside of the Park project area, its paved surfaces, warehouses, and industrial nature contribute to the visual setting of this VAU. The topography is flat, only rising a few feet above sea level. The majority of this VAU is highly developed for industrial uses and enclosed by chain-link fencing with barbed-wire.

The significant feature of the developed area is the Bridge Yard Building, as discussed above and shown in **Figure 12**, Photo 5. The Bridge Yard Building is a historic warehouse structure with a saw-tooth roof and glass windows along its northern and southern facades. Surrounding the building are impervious surfaces for construction staging, Caltrans parking, and maintenance activities (refer to Figure 12, Photo 6). Several temporary structures, such as portables, storage units, and garages are irregularly scattered on the site. A paved stormwater irrigation channel parallels Burma Road, north of the roadway, for approximately 0.4 mile (refer to **Figure 12**, Photo 7). It passes by a stormwater detention basin that has several outfalls connecting the two areas. A one lane bridge for pedestrians and utility vehicles spans over the open drainage channel. Utility poles, overhead wires, two conventional billboards, one digital billboard, and cellphone towers are also prominent vertical features within this VAU (refer to **Figure 12**, Photo 8).

Vegetation throughout the developed area is sparse and in poor condition, due to the paved nature of the site. Ruderal vegetation is limited to small weeds and shrubs growing between the cracks of the impervious surfaces. However, a stormwater detention basin with pervious surfaces and low-growing vegetation is located north of Dock 7, and one mature tree is located to the north of the Bridge Yard Building. Although in close proximity to the Bay, the vegetation within the developed area is in a disparate manmade setting and, therefore, adds little aesthetic value. The natural area along the shoreline includes fewer manmade features (refer to **Figure 13**, Photo 9). The only permanent buildings are on the westernmost edge, immediately adjacent to the Bay. This includes a transition structure and dechlorination facility operated by EBMUD, as part of its wastewater treatment facilities. This also includes two historic buildings owned by Caltrans, the Key Pier Substation and Bay Bridge Oakland Substation (also called Mole Substation) (refer to **Figure 13**, Photo 10). These reinforced concrete structures are one- to two-stories in height and, except for the Key Pier Substation, do not include exterior articulation or windows. Mature trees and shrubs are growing in the vicinity of these buildings, but the landscaping is not maintained. The remainder of vegetation within the natural area includes low-laying shrubs, weeds, and grasses. Although this area is flat and at a low elevation, there are large areas with little onsite development, allowing for panoramic background views to the east, south, and west. To the north, views are blocked by the aerial structures of the Bay Bridge and the adjacent at-grade segment of I-80.This VAU includes partially obstructed views of the East Bay Hills ridgeline and urban development on the hillside (refer to **Figure 13**, Photo 11). It also includes more open views of the East Bay Hills ridgeline, the Santa Cruz Mountain Range, the Bay, the Bay Bridge, Yerba Buena Island, and Oakland and San Francisco Skylines (refer to **Figure 13**, Photos 9 and 12).This VAU also includes the Burma Road connection to Maritime Street, which passes by vacant lots and a parking area, east of the industrialized Port. Lighting within this VAU comes from safety lighting associated with permanent and temporary buildings, overhead parking lot and storage yard lighting, and billboard lighting. It also receives lighting from the I-80 corridor. The natural area is unlit.

- **Maze:** This VAU is located under and follows the linear path of the aerial structure for the I-880 corridor, from 10th Street and extending to the MacArthur Maze. This VAU is owned by the State of California (Caltrans). To the east of the VAU, there are light-industrial uses on grid-patterned streets in the City of Oakland. To the west of the VAU, there is the Union Pacific Railroad right-of-way. Further to the west is property owned and operated by the Port of Oakland and EBMUD. This VAU is currently surrounded by a chain-link fence and is inaccessible to the public (refer to **Figure 14**, Photos 13 through 16). The area is flat with a combination of paved surfaces and ruderal vegetation growing in small unpaved areas. The vegetation mainly includes weeds, grasses, and small shrubs with no aesthetic value. Massive concrete pillars (some with graffiti) are evenly-spaced throughout this area, supporting the I-880 aerial structure. The freeway overcrossing creates a visual barrier and separates the City of Oakland from the EBMUD treatment facility and the Port of Oakland. The freeway also limits most views to the foreground. However, some middleground and background views to the surrounding area, such as to the East Bay Hills (see Photo 13), are present through views corridors created by the raised freeway structures and nearby industrial development. Lighting in this VAU includes overhead, cobra lighting and vehicle headlights on I-880 and roadways intersecting I-880. It also receives lighting from nearby industrial and Port land uses, including street lighting and vehicle headlights in these areas.



Figure 10: Visual Assessment UnitsThis map delineates three visual assessment units and their associated key views that will be used to assess visual impacts that may be caused by the proposed project. Each visual assessment unit is differentiated from other units both by its dimensions and its visual resources.



Photo 1. View looking northwest toward the Bay Bridge, Treasure Island, Angel Island, and Tiburon.



Photo 2. View looking northwest toward the Bay Bridge, Treasure Island, Angel Island, and Tiburon.



Photo 3. View looking northeast toward Emeryville Marina and the East Bay Hills.



Photo 4. View looking southwest toward I-80 and the Port.

Figure 11: Radio Beach Visual Assessment Unit Photos



Photo 6. View looking northwest toward the historic Bridge Yard Building.



Photo 5. View looking west toward the Caltrans staging yard.



Photo 8. View looking west toward the stormwater irrigation channel and San Francisco.



Photo 7. View looking west toward the edge of the Port, the Bay Bridge, Yerba Buena Island, and San Francisco.

Figure 12: Portside Visual Assessment Unit Photos



Photo 9. View looking west toward the edge of the Port, the Bay Bridge, Yerba Buena Island, and San Francisco.



Photo 10. View looking east toward the historic Key Building and the PG&E substation, which has since been demolished.



Photo 12. View looking east toward Burma Road, the I-80 corridor, and the East Bay Hills.



Photo 11. View looking southeast toward the Port, downtown Oakland, and the East Bay Hills.

Figure 13: Portside Visual Assessment Unit Photos



Photo 14. View looking northeast toward I-880 from Wood Street near West Grand Avenue.



Photo 13. View looking northwest toward the West Grand Avenue overcrossing from Wood Street.



Photo 16. View looking northwest toward I-880 from Wood Street, north of 20th Street.



Photo 15. View looking north toward I-880 and the railroad right-of-way from Wood Avenue, north of 26th Street.

Figure 5: Maze Visual Assessment Unit Photos

VI. VISUAL RESOURCES AND RESOURCE CHANGE

Resource change is assessed by evaluating the visual character and the visual quality of the visual resources that comprise the project area corridor before and after the construction of the proposed project. Resource change is one of the two major variables in the equation that determine visual impacts. The other major variable is *viewer response*, discussed below in *Section VII, Viewers and Viewer Response*.

With an establishment of the baseline (existing) conditions, a proposed project or other change to the landscape can be systematically evaluated for its degree of impact. The degree of impact depends both on the magnitude of change in the visual resource (i.e., the visual character and quality) and on viewers' responses to and concern about those changes. This general process is similar for all established federal procedures of visual assessment (Smardon et al. 1986), and it represents a suitable methodology of visual assessment for other Projects and areas.

The approach for this visual assessment is adapted from the Federal Highway Administration's (FHWA's) visual impact assessment system (Federal Highway Administration 1988), in combination with other established visual assessment systems. The visual impact assessment process involves the identification of the following:

- Relevant policies and concerns for the protection of visual resources.
- Visual resources (i.e., the visual character and quality) of the region, the immediate Project area, and the Project site.
- Important viewing locations (e.g., roads) and the general visibility of the Project area and site using descriptions and photographs.
- Viewer groups and their sensitivity.
- Potential impacts.

Visual Resources

Visual resources of the Project setting are defined and identified below by assessing visual character and visual quality in the Project corridor.

Visual Character

Visual character is described using attributes such as form, line, color, and texture. These attributes are neither considered good nor bad. However, a change in visual character can be evaluated when it is compared with the viewer response to that change. Changes in visual character can be identified by how visually compatible a proposed project would be with the existing condition by using visual character attributes as an indicator. For this Project the following attributes were considered.

- **Form**—visual mass or shape.
- **Line**—edges or linear definition.
- **Color**—reflective brightness (light, dark) and hue (red, green).
- **Texture**—surface coarseness.
- **Dominance**—position, size, or contrast.
- **Scale**—apparent size as it relates to the surroundings.
- **Diversity**—a variety of visual patterns.
- **Continuity**—uninterrupted flow of form, line, color, or textural pattern.

The visual character of the proposed project will be compatible with the existing visual character of the corridor The visual character of the existing Project area is mostly compatible with the surrounding pattern elements and pattern character.

The topography in the all three VAUs is generally flat. Developed areas associated the Portside VAU are flat and paved and include structures that are larger in form and scale, along with tall infrastructures associated with billboards, towers, and utility and lighting poles. Large forms and tall structures are also associated with the Maze VAU and its transportation structures. The natural areas in the Radio Beach and Portside VAUs do not have large-scale buildings that tend to draw attention to such facilities, but have low-profile landforms and vegetation that transition nicely to the Bay. There are, however, several tall vertical towers and utility poles that do serve as focal points. The vegetation in the Radio Beach and Portside VAU natural areas grows to a low height and is not manicured, resulting in a medium textured appearance. Vegetation in the developed portions of the Portside VAU and the Maze VAU are also medium textured, consisting primarily of ruderal grasses and weeds. The color of vegetated areas change seasonally and range from tan in the summer or dryer, warmer months to green in the winter or when cool air and rain has been present. In addition, while lighting in each VAU varies, all are fairly well-lit from existing light sources within the VAU and/or by the I-80 corridor and nearby land uses outside of each VAU.

Visual Quality

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the Project area. Public attitudes validate the assessed level of quality and predict how changes to the Project corridor can affect these attitudes. This process helps identify specific methods for addressing each visual impact that may occur as a result of the Project. The three criteria for evaluating visual quality are defined below.

- **Vividness** is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- **Intactness** is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.
- **Unity** is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

The visual quality of the existing corridor will not be altered by the proposed project. *Section VIII, Visual Impact*, describes changes to the visual quality. The existing visual quality for each VAU is as follows.

- **Radio Beach:** The vividness of this VAU is moderate-high because it lacks a great deal of development encroachments, except for the radio towers and utility poles. The lack of development in this VAU allows for attractive views toward the surrounding Bay Area from within the VAU and from the nearby I-80 corridor. The intactness and unity are also moderate-high because the low levels of infrastructure and utilities allow for a smooth, largely uninterrupted, visual transition from vegetated areas to the shoreline and water. The resulting visual quality is moderate-high.

- **Portside:** The vividness of this VAU is moderate because, although the large industrial buildings/warehouses interrupt views of the surrounding landscape, the open natural areas with views towards the surrounding Bay Area provide visual interest. The intactness and unity are moderate-low because the mix of industrial land-uses and natural areas constitute non-typical visual intrusions. There are many vertical structures, active construction activities, and changing construction staging within the VAU. The resulting visual quality is moderate to moderate-low.

- **Maze:** This VAU is comprised of aerial transportation structures that allow for views of the surrounding landscape including concrete pillars with graffiti, utility poles and lights, and ruderal vegetation. However, I-880 is not a state or city designated scenic route. The vividness of the Project vicinity is moderate-low due to combined views of adjacent industrial areas with some scenic view corridors of the surrounding Bay Area. Intactness and unity are moderate-low because the transportation corridor is uniform and consistent, but fencing creates a visual access barrier to the VAU. The resulting visual quality is moderate-low.

Resource Change

Resource change will be moderate to moderate-high. The proposed project would modify the existing VAUs by rehabilitating old buildings, restoring natural areas, and transforming the developed portions of VAUs to park areas where none presently exists. The highest degree of change would occur from removing old buildings and paved areas, and transforming them into the park areas that include both built features and landscaping. These changes would act to improve the visual conditions of all three VAUs, and it would aid in increasing the visual quality of each VAU in a manner that they complement and enhance scenic views of the surrounding Bay Area.

VII. VIEWERS AND VIEWER RESPONSE

The population affected by the Project is composed of *viewers*. Viewers are people whose views of the landscape may be altered by the proposed project—either because the landscape itself has changed or their perception of the landscape has changed.

Viewers and their response to changes in their visual environment is one of two variables that determine the extent of visual impacts that will be caused by the construction and operation of the proposed project. The other variable is the change to visual resources discussed earlier in *Section VI, Visual Resources and Resource Change*.

Types of Viewers

There are two major types of viewer groups for highway Projects: highway neighbors and highway users. Because this Project is a park and not a highway, the two major viewer groups used for this Project are neighbors and site users. Each viewer group has their own particular level of *viewer exposure* and *viewer sensitivity*, resulting in distinct and predictable visual concerns for each group which help to predict their responses to visual changes.

Neighbors (Views *to* the Project)

Neighbors are people who have views *to* the Project. They can be subdivided into different viewer groups by land use. For example, residential, commercial, industrial, retail, institutional, civic, educational, recreational, and agricultural land uses may generate highway neighbors or viewer groups with distinct reasons for being in the corridor and therefore having distinct responses to changes in visual resources. For this Project the following neighbors were considered.

- Workers adjacent to the Portside and Maze VAUs.
- Roadway users on local roadways adjacent to all VAUs.
- Highway users on I-80, I-880, and the MacArthur Maze.
- Recreationists using local roadways, the Bay Bridge Trail, and the water adjacent to the Radio Beach and Portside VAUs.

Site Users (Views *from* the Project)

Site users are people who have views *from* the Project. They can be subdivided into different viewer groups in two different ways—by mode of travel or by reason for being at the Project area. For example, subdividing highway users by mode of travel may yield pedestrians, bicyclists, transit riders, car drivers and passengers, and truck drivers. Dividing site users or viewer groups by reason for being at the site creates categories like tourists, commuters, and haulers. It is also possible to use both mode and reason, creating a category like *bicycling tourists,* for example. Access to the Maze VAU is restricted by fencing and has no regular viewers within the VAU, because views from the elevated structures to the area underneath are not readily available. For this Project, the following site users were considered within the Project area.

- Recreational users traveling through or recreating in the Radio Beach and Portside VAUs.
- Haulers and commuters in the Portside VAU.
- Workers in the Portside VAU.

Composite Viewer Group

For analytical purposes, a composite viewer group was created for this Project. A composite viewer group is comprised of all neighbors and users affected by this Project. It is a proportional representation of the affected population. It not only represents a typical viewer; it also includes the most critical attributes and concerns of the individual viewer groups from which it was assembled.

For this Project, the viewer groups that most typify the composite viewer group include: freeway travelers, local commuters, haulers, and workers. These groups represent the largest viewer groups in direct visual contact with the proposed project. Recreationists are a very small subset of the overall viewers affected by the Project.

Viewer Response

Viewer response is a measure or prediction of the viewer's reaction to changes in the visual environment and has two dimensions as previously mentioned, viewer exposure and viewer sensitivity.

Viewer Exposure

Viewer exposure is a measure of the viewer's ability to see a particular object. Viewer exposure has three attributes: location, quantity, and duration.

Location relates to the position of the viewer in relationship to the object being viewed. The closer the viewer is to the object, the more exposure.

Quantity refers to how many people see the object. The more people who can see an object or the greater frequency an object is seen, the more exposure the object has to viewers.

Duration refers to how long a viewer is able to keep an object in view. The longer an object can be kept in view, the more exposure. High viewer exposure helps predict that viewers will have a response to a visual change.

Viewer exposure for site users differs amongst the Maze, Radio Beach, and Portside VAUs. Views from within the Maze VAU are not available because access is restricted by fencing. Views from within the Radio Beach VAU are limited to recreationists within the VAU that are likely to have shorter to longer views based on the duration of their visit to the beach. However, this VAU receives limited use, and recreational viewers are transient visitors that access the site more irregularly. There may be select individuals that frequent the site on a more regular basis. Viewers in the Radio Beach VAU have mostly

uninterrupted foreground to background views of the Bay Area because this VAU is largely undeveloped.

Site users within the Portside VAU comprise the largest number of viewers who come into direct visual contact with the Project area for the longest periods of time. Access within the VAU is restricted by a gate on Burma Road that results in a difference in the number of viewers occurring on either side of the gate. The gate is located just west of the portions of the Port and Caltrans Maintenance complex that are south of Burma Road, near where the open space area begins. Public access to the west of the gate is not permitted. Therefore, public views of the Bay are not provided from existing shoreline areas associated with the Portside VAU, because these areas are located west of the gate. Port and Caltrans Maintenance workers access this area from time to time to perform maintenance activities, allowing for private views of the Bay and restricted areas of the site. However, only a limited amount of workers would be intermittently accessing the site west of the gate and most active uses. Therefore, a higher concentration of viewers occur east of the gate.

East of the gate, the majority of the Portside VAU is currently accessed primarily by workers at the Port and Caltrans Maintenance complex. There are a smaller number of recreationists using Burma Road to access the Bay Bridge Trail near the IERBYs building. However, portions of Burma Road that are accessed by both the public and Port and Caltrans Maintenance workers do not provide a welcoming environment for the public, as they briefly pass through this portion of the VAU, due to its highly industrial nature. Slightly longer views are available to workers working outside or en route to Caltrans' staging areas, the Port, industrial areas, and the buildings at the western end of Key Point. Most of views are limited to the foreground due to intervening development and infrastructure in all VAUs. However, middleground and background views to the Bay Area are present from the undeveloped areas of the Radio Beach and Portside VAUs.

Neighbors' views of the Project vary based on location within the landscape, distance from the Project site, and presence of intervening features, such as warehouses, infrastructure, and storage containers. Some roadway neighbors have slightly longer-term views of the project area, such as neighbors working in industrial areas adjacent to the Portside and Maze VAUs. While most of these views are within the immediate foreground, they are primarily available from vantages that are directly adjacent to the edges of the VAUs. These foreground views tend to be transient as workers access parked cars, loading docks, or outdoor storage yards or work areas. Neighbors using the freeways, local roadways, and the water have intermittent to more direct views of the project area as follows: from the outermost lanes on I-80 near the Oakland touchdown of the Bay Bridge, on the Bay Bridge's eastbound approach to the Oakland touchdown, on local roadways that pass by the VAUs, or while using the water for recreation or commerce. These views are generally short-term as travelers approach and pass by the site. Most of these views are limited to the foreground due to intervening development and infrastructure. However, middleground views to the Radio Beach and Portside VAUs exist on the Bay Bridge's eastbound downgrade approach to the Oakland touchdown and from the Bay. Water-based views may last slightly longer due to reduced speeds of water travel. These viewers have more direct foreground and middleground views of the Radio Beach and Portside VAUs because of the lack of obstructions in the waterways.

Viewer Sensitivity

Viewer sensitivity is a measure of the viewer's recognition of a particular object. It has three attributes: activity, awareness, and local values.

Activity relates to the preoccupation of viewers—are they preoccupied, thinking of something else, or are they truly engaged in observing their surroundings. The more they are actually observing their surroundings, the more sensitivity viewers will have of changes to visual resources.

Awareness relates to the focus of view—the focus is wide and the view general or the focus is narrow and the view specific. The more specific the awareness, the more sensitive a viewer is to change.

Local values and attitudes also affect viewer sensitivity. If the viewer group values aesthetics in general or if a specific visual resource has been protected by local, state, or national designation, it is likely that viewers will be more sensitive to visible changes. High viewer sensitivity helps predict that viewers will have a high concern for any visual change.

The proposed project is located in an area that has undergone recent change and continues to undergo frequent new land development and construction. Therefore, all viewer groups are familiar with maintenance and construction activities associated with the new Bay Bridge and occurring on local roadways and in developed areas within close proximity to the Project area.

Recreational users, haulers, and commuters would have low sensitivity to visual changes resulting from the proposed project, because they only come in direct visual contact with the proposed project while travelling through the area or they are only within the project area for a short period of time (e.g., visitors to Radio Beach). Workers would also have low sensitivity because they are focused on work activities. Therefore, views would be intermittent, and construction activities are typical within the Project vicinity.

Site neighbors would have low sensitivity to visual changes resulting from the proposed project. Although they are adjacent to the proposed project, their views are also shorter-term (i.e., there are no residences that have longer-term views) and also often transient. The composite viewer group's visual sensitivity is representative of the viewer groups with the largest number of viewers having the highest visual sensitivity. As such, the composite viewer group is deemed to have low sensitivity to visual changes resulting from the proposed project.

Regulations

Federal

San Francisco Bay Conservation and Development Commission

In accordance with the Federal Coastal Zone Management Act, the San Francisco BCDC has the authority to confirm or deny permits regarding the placement or extraction of materials in the Bay; regulate new development within the first 100 feet inland from the Bay shoreline; and to ensure that water-oriented uses are reserved for ports, water-related industries, water-oriented recreation, airports, and wildlife refuges. The guidelines address that visual access to San Francisco Bay is an important component of public access. Therefore, waterfront Projects approved by BCDC must provide, enhance, and maintain visual access to the Bay and shoreline by including public views from public thoroughfares and the Bay; maintain and enhance the visual quality of the Bay, shoreline, and adjacent developments; and take advantage of the Bay setting. BCDC also requires that structure locations and the height and placement of landscaping maintain or improve Bay views while providing onsite visual interest and variety. In addition, new roads should be planned to keep Bay and access areas in view as much as possible, especially where roads change direction (BCDC 2005).

State

Scenic Highways

I-80 is an eligible state scenic highway, but not officially designated (Caltrans 2013). There are no roadways within or near the Project area that are officially designated in federal or state plans as a scenic highway or route worthy of protection for maintaining and enhancing scenic viewsheds (Caltrans 2013).

Landscaped Freeways

The portion of I-80 that passes through the Project area (from PM 1.00-6.03) is classified as a state landscaped freeway (Caltrans 2014a). As defined by the Outdoor Advertising Act, a landscaped freeway "means a section or sections of a freeway that is now, or hereafter may be, improved by the planting at least on one side or on the median of the freeway right–of–way of lawns, trees, shrubs, flowers, or other ornamental vegetation requiring reasonable maintenance." Landscaped freeways must have planting areas that are at least 1,000 feet in length that are in healthy condition and improve the aesthetic appearance of the highway. Functional plantings (i.e., plantings for erosion control, traffic safety, reduction of fire hazards, and traffic noise abatement, or other non–ornamental purposes) do not qualify. The Outdoor Advertising Act prohibits the placement of advertising within 660 feet of the edge of the right–of–way of a landscaped freeway. (Caltrans 2014b.)

Local

Oakland General Plan

Land Use and Transportation Element

The City of Oakland General Plan, Land Use and Transportation Element (City of Oakland 1998) contains the following policies pertaining to aesthetic resources:

Policy l/C4.1 Protecting Existing Activities. Existing industrial, residential, and commercial activities and areas which are consistent with long term land use plans for the City should be protected from the intrusion of potentially incompatible land uses.

Policy T3.5 Including Bikeways and Pedestrian Walks. The City should include bikeways and pedestrian walks in the planning of new, reconstructed, or realized streets, wherever possible.

Policy T6.2 Improving Streetscapes. The city should make major efforts to improve the visual quality of streetscapes. Design of the streetscape, particularly in neighborhoods and commercial centers, should be pedestrian-oriented and include lighting, directional signs, trees, benches, and other support facilities.

Policy T6.3 Making the Waterfront Accessible. The waterfront should be made accessible to pedestrians and bicyclists throughout Oakland.

Policy T6.5 Protecting Scenic Routes. The City should protect and encourage enhancement of the distinctive character of scenic routes within the city, through prohibition of billboards, design review, and other means.

Policy W2.1 Linking Neighborhoods with the Waterfront. All recreational activity sites along the waterfront should be connected to each other to create continuous waterfront access. Safe and direct automobile, bicycle, pedestrian and waterway access between the waterfront and adjacent neighborhoods should be created and strengthened.

Policy W2.2 Buffering of Heavy Industrial Uses. Appropriate buffering measures for heavy industrial uses and transportation uses on adjacent residential neighborhoods should be developed and implemented.

Policy W2.3 Providing Public Access Improvements. Public access improvements to the waterfront and along the water's edge should be implemented as Projects are developed. The access improvement should conform Policy

Policy W2.6 Providing Maritime and Aviation Viewing Access. Safe access to areas for viewing maritime and aviation activities without interfering with seaport and airport activities should be encouraged to the requirements of the BCDC.

Policy W3.4 Preserving Views and Vistas. Buildings and facilities should respect scenic viewsheds and enhance opportunities for visual access of the waterfront and its activities.

Policy W2.10 Making Public Improvements as a Part of Projects. Physical improvements to improve the aesthetic qualities of the waterfront, and increase visitor comfort, safety, and enjoyment should be incorporated in the development of Projects in the waterfront area. These amenities may include landscaping, lighting, public art, comfort stations, street furniture, picnic facilities, bicycle racks, signage, etc. These facilities should be accessible to all persons and designed to accommodate elderly and physically disabled persons.

Policy W3.2 Enhancing the Quality of the Natural and Built Environment. The function, design and appearance, and supplementary characteristics of all uses, activities, and facilities should enhance, and should not detract from or damage the quality of, the overall natural and built environment along the waterfront.

Policy W3.3 Protecting and Preserving Wetland Plant and Animal Habitats. Native plant communities, wildlife habitats, and sensitive habitats should be protected and enhanced.

Policy W3.4 Preserving Views and Vistas. Buildings and facilities should respect scenic viewsheds and enhance opportunities for visual access of the waterfront and its activities.

Policy W7.1 Developing Lands In the Vicinity of the Seaport/ Airport. Outside the seaport and airport, land should be developed with a variety of uses that benefit from the close proximity to the seaport and airport and that enhance the unique characteristics of the seaport and airport. These lands should be developed with uses which can buffer adjacent neighborhoods from impacts related to such activities.

Policy N9.5 Marking Significant Sites. Identify locations of interest and historic significance by markers, signs, public art, landscape, installations, or by other means.

Policy N10.1 Identifying Neighborhood "Activity Centers". Neighborhood Activity Centers should become identifiable commercial, activity and communication centers for the surrounding neighborhood. The physical design of neighborhood activity centers should support social interaction and attract persons to the area. Some of the attributes that may facilitate this interaction include plazas, pocket parks, outdoor seating on public and private property, ample sidewalk width, street amenities such as trash cans and benches, and attractive landscaping.

Policy N12.4 Undergrounding Utility Lines. Electrical, telephone, and related distribution lines should be undergrounded in commercial and residential areas, except where special local conditions such as limited visibility of the poles and wires make this unneeded. They should also be underground in appropriate institutional, industrial, and other areas, and generally along freeways, scenic routes, and heavily traveled streets. Programs should lead systematically toward the eventual undergrounding of all

existing lines in such places. Where significant utility extensions are taking place in these areas, such as in new subdivisions, utilities should be installed underground from the start.

Open Space, Conservation, and Recreation Element

The City of Oakland General Plan, Open Space, Conservation, and Recreation Element (OSCAR) (City of Oakland 1996) contains the following policies pertaining to aesthetic resources:

Policy OS-2.1: Protection of Park Open Space. Manage Oakland's urban parks to protect and enhance their open space character while accommodating a wide range of outdoor recreational activities.

Policy OS-2.6: Street Closures for Parks, Plazas, and Gardens. Where there is broad community and local support and where legally permissible, allow local street closures as a way of creating new parks, plazas, and garden sites in urban neighborhoods.

Policy OS-3.6: Open Space Buffers along Freeways. Maintain existing open space buffers along Oakland's freeways to absorb noise and emissions and enhance the scenic quality of the roadways. Manage steeply sloping or wooded parcels adjacent to highways owned by the State of California (Caltrans) to conserve natural resources and protect open space. Where compatible with adjacent land uses, support the use of land along, under, or over freeways in urban settings for greenbelts, recreation, public art, or other activities which enhance the usefulness and appearance of such land.

Policy OS-4.4: Elimination of Blighted Vacant Lots. Discourage property owners from allowing vacant land to become a source of neighborhood blight, particularly in residential areas with large numbers of vacant lots.

Policy OS-5.1: Priorities for Trail Improvement. Improve trail connections within Oakland, emphasizing connections between the flatlands and the hill and shoreline parks; lateral trail connections between the hill area parks; and trails along the waterfront (see **Figure 6**).

Policy OS-5.2: Joint Use of Rights-of-Way. Promote the development of linear parks or trails within utility or transportation corridors, including transmission line rights-of-way, abandoned railroad rights-of-way, and areas under the elevated BART tracks.

Policy OS-5.3: Trail Design Principles. Plan and design all new trails in a manner which: (a) minimizes environmental impacts; (b) fully considers neighbor privacy and security issues; (c) involves the local community in alignment and design; and (d) considers the needs of multiple users, including pedestrians, bicycles, and wheelchairs.

Policy OS-7.1: Promotion of Beneficial Waterfront Uses. Require land uses along the shoreline which promote the beneficial uses of the Estuary and Bay waters, including a balanced mix of commercial shipping facilities; water-dependent industry, commerce, and transportation; recreation; water-oriented services and housing; and resource conservation.

Policy OS-7.3: Waterfront Appreciation. Promote a greater appreciation of the Oakland waterfront by preserving and enhancing waterfront views, promoting its educational value, and exploring new and creative ways to provide public access to the shoreline without interfering with transportation and shipping operations or endangering public safety.

Policy OS-7.4: Waterfront Park Enhancement. Expand and enhance the City's waterfront park areas. Signage and access provisions to existing waterfront parks should be improved. Opportunities for new shoreline parks as depicted in **Figure 7** (Shoreline Access) should be pursued as redevelopment along the waterfront occurs. A variety of park environments should be created, including active recreation

areas, fishing piers and boating facilities, natural areas, and small "pocket" parks with landscaping and benches, all linked by linear parks or pedestrian paths emphasizing shoreline views and access.

Policy OS-7.2: Dedication of Shoreline Public Access. Support the BCDC requirements which mandate that all new shoreline development designate the water's edge as publicly accessible open space where safety and security are not compromised, and where access can be achieved without interfering with waterfront industrial and maritime uses. Where such conflicts or hazards would result, support the provision of off-site access improvements in lieu of on-site improvements. In such cases, the extent of off-site improvements should be related to the scale of the development being proposed.

Policy OS-7.5: Lateral Access and Links to the Flatlands. Improve lateral access along the Oakland shoreline and linkages between the shoreline and nearby neighborhoods by creating a ''Bay Trail" along the length of the Oakland waterfront. Where an alignment immediately along the waterfront is not possible, site the trail as close to the water as possible, with spur trails leading to the water's edge. In the transitional areas between Jack London Square and High Street, interim alignments may be designated along local streets but the ultimate goal should be an unbroken trail along the water's edge between Jack London Square and Martin Luther King, Jr. Regional Shoreline.

Policy OS-9.1: Protection of Natural Landforms. Design new development to preserve natural topography and terrain. Enhance prominent topographic features where appropriate by parks, plazas, or architectural expressions.

Policy OS-9.2: Use of Natural Features to Define Communities. Use open space and natural features to define city and neighborhood edges and give communities within Oakland a stronger sense of identity. Maintain and enhance city edges, including the greenbelt on the eastern edge of the city, the shoreline, and San Leandro Creek. Use creeks, parks, and topographical features to help define neighborhood edges and create neighborhood focal points.

Policy OS-9.3: Gateway Improvements. Enhance neighborhood and city identity by maintaining or creating gateways. Maintain view corridors and enhance the sense of arrival at the major entrances to the city, including freeways, BART lines, and the airport entry. Use public art, landscaping, and signage to create stronger City and neighborhood gateways.

Policy OS-10.1: View Protection. Protect the character of existing scenic views in Oakland, paying particular attention to: (a) views of the Oakland Hills from the flatlands; (b) views of downtown and Lake Merritt; (c) views of the shoreline; and (d) panoramic views from Skyline Boulevard, Grizzly Peak Road, and other hillside locations.

Policy OS-10.2: Minimizing Adverse Visual Impacts. Encourage site planning for new development which minimizes adverse visual impacts and takes advantage of opportunities for new vistas and scenic enhancement.

Policy OS-10.3: Underutilized Visual Resources. Enhance Oakland's underutilized visual resources, including the waterfront, creeks, San Leandro Bay, architecturally significant buildings or landmarks, and major thoroughfares.

Policy OS-10.4: Retention of City-Owned Open Space in Scenic Corridors. Retain City-owned parcels adjacent to Skyline Boulevard, Shepherd Canyon Road, and other scenic roadways to preserve panoramic views, vegetation, and natural character.

Policy OS-11.3: Public Art Requirements. Continue to require public art as a part of new public buildings or facilities. Consider expanding the requirement or creating voluntary incentives to private buildings with substantial public spaces.

Policy OS-11.4: Siting Public Art. Site public art with sensitivity to its surroundings. Locate public art in a manner which does not reduce useable open space in City parks or impede recreational activities.

Policy OS-12.1: Street Tree Selection. Incorporate a broad and varied range of tree species which is reflected on a city-maintained list of approved trees. Street tree selection should respond to the general environmental conditions at the planting site, including climate and micro-climate, soil types, topography, existing tree planting, maintenance of adequate distance between street trees and other features, the character of existing development, and the size and context of the tree planting area.

Policy OS-12.3: Street Tree Removal. Remove street trees only if they are hazardous, severely and incurably infested with insects or blight, or are severely and irreversibly damaged and deformed. Provide replacement trees in all cases where the site is suitable for street trees.

Policy C0-4.2: Landscaping Drought-Tolerant. Require use of drought-tolerant plants to the greatest extent possible and encourage the use of irrigation systems which minimize water consumption.

Policy CO-7.4: Tree Removal. Discourage the removal of large trees on already developed sites unless removal is required for biological, public safety, or public works reasons.

Policy REC-3.3: Park Location Factors. Consider a range of factors when locating new parks or recreational facilities, including local recreational needs, Projected operating and maintenance costs, budgetary constraints, surrounding land uses, citizen wishes, accessibility, the need to protect or enhance a historic resource, and site visibility.

Policy REC-6.3: Use of Surplus or Underutilized Properties. In areas where park deficiencies exist, pursue recreational use of open space at surplus schools, military bases, utility and watershed properties, and transmission and transportation corridors. Recreational uses in such locations should not conflict with the functional use of the property and should be compatible with prevailing environmental conditions.

Policy C0-7.1: Protection of Native Plant Communities. Protect native plant communities, especially oak woodlands, redwood forests, native perennial grasslands, and riparian woodlands, from the potential adverse impacts of development. Manage development in a way which prevents or mitigates adverse impacts to these communities.

Policy C0-7.2: Native Plant Restoration. Encourage efforts should to restore native plant communities in areas where they have been compromised by development or invasive species, provided that such efforts do not increase an area's susceptibility to wildfire.

Policy REC-3.3: Park Location Factors. Consider a range of factors when locating new parks or recreational facilities, including local recreational needs, Projected operating and maintenance costs, budgetary constraints, surrounding land uses, citizen wishes, accessibility, the need to protect or enhance a historic resource, and site visibility.

Policy REC-4.1: Systematic Maintenance Provisions. Provide for on-going, systematic maintenance of all parks and recreational facilities to prevent deterioration, ensure public safety, and permit continued public use and enjoyment.

Policy REC-4.3: Renovation and Rehabilitation Priorities. Where cost savings and equivalent benefits would be achieved, renovate and rehabilitate existing facilities before building new facilities. Give rehabilitation priority to Projects which would: (a) increase park safety and usefulness; (b) reduce operating and maintenance expenses; and (c) prevent a facility from deteriorating to the point of becoming unusable or expensive to repair. For Projects meeting these criteria, give highest priority to

Projects in areas which are underserved by parks and recreational facilities, and Projects which would benefit the greatest number of persons.

Policy REC-5.2: Safety-Oriented Design. Use a wide range of physical design solutions to improve safety at Oakland's parks, including lighting, signage, landscape design, fencing, vandal-resistant building materials, and emergency response fe2tures.

Policy REC-7.6: Recognition of Local History. Promote programs, events, and markers at local parks which increase public awareness of local history and provide a sense of continuity with the past.

West Oakland Planning Area Strategy

The West Oakland Planning Area Strategy within the OSCAR recommends the following that can improve visual access:

- Improve access to the shoreline. This should include construction of the Bay Trail, along with spur trails along Maritime and 7th Street/Middle Harbor Road.
- Where feasible, incorporate connections (arcades, landscaped easements, etc.) to parks in West Oakland (DeFremery, Lowell, Raimondi) as old industrial sites along Mandela Parkway are redeveloped.
- Continue street tree planting efforts and other programs to "green" West Oakland.

Harbor Planning Area Strategy

The Harbor Planning Area Strategy within the OSCAR recommends the following that can improve visual access:

- Construct the Bay Trail and the spur trails along the adopted alignments through the Harbor area.
- Improve the eastbound Bay Bridge "gateway" to Oakland, possibly with a landscaped vista point just beyond the Oakland anchorage.
- Work with the Port of Oakland, the federal government, and the various Base Closure agencies to explore possibilities for shoreline access within the Fleet Industrial Supply Center. Possible use of the finger piers and boat basin for recreation should be explored.
- Should the Army Base become available for re-use, work with the Port of Oakland in exploring opportunities for access.
- Following redevelopment of the Fleet Industrial Supply Center, pursue development of a small historic shoreline park at the Union Point Mole (mouth of the Estuary).
- Create stronger links between the waterfront and West Oakland, beginning with the Bay Trail.
- Work with the Port of Oakland to establish visitor observation areas and promote public awareness of the economic importance of the Oakland shoreline.

Scenic Highways Element

As described in the City of Oakland General Plan Scenic Highways Element (City of Oakland 1974), the MacArthur Freeway is a city designated scenic route from the San Leandro City limits to the San Francisco-Oakland Bay Bridge approach. The Scenic Highways Element contains the following policies pertaining to aesthetic resources:

General Policy 2. All or portions of visually significant trafficways are eligible for future designation as scenic routes and for the protective restrictions that may be appropriate thereto.

General Policy 3. Urban development should be related sensitively to the natural setting.

General Policy 4. High standards for preserving and enhancing natural landforms and vegetation should be established and maintained to regulate all activities related to earthwork and the removal of trees, shrubs, or ground cover.

General Policy 5. Budgets for street improvements will, as a matter of course, include items for landscaping and tree planting, and the City budget should reflect the need for continued maintenance.

General Policy 6. Overhead utilities should be undergrounded along all freeways, scenic routes, and major streets. Programs should be dove loped to increase the present rate of undergrounding existing overhead utilities.

General Policy 7. Billboards should be prohibited and other signs should be controlled along freeways and parkways.

MacArthur Freeway Policy 1. The signs within the scenic corridor that are visible from the freeway should be for identification purposes only; no advertising should be permitted.

MacArthur Freeway Policy 2. Visual intrusions within the scenic corridor should be removed, converted, buffered, or screened from the motorist's view.

MacArthur Freeway Policy 3. Panoramic vistas and interesting views now available to the motorist should not be obliterated by new structures.

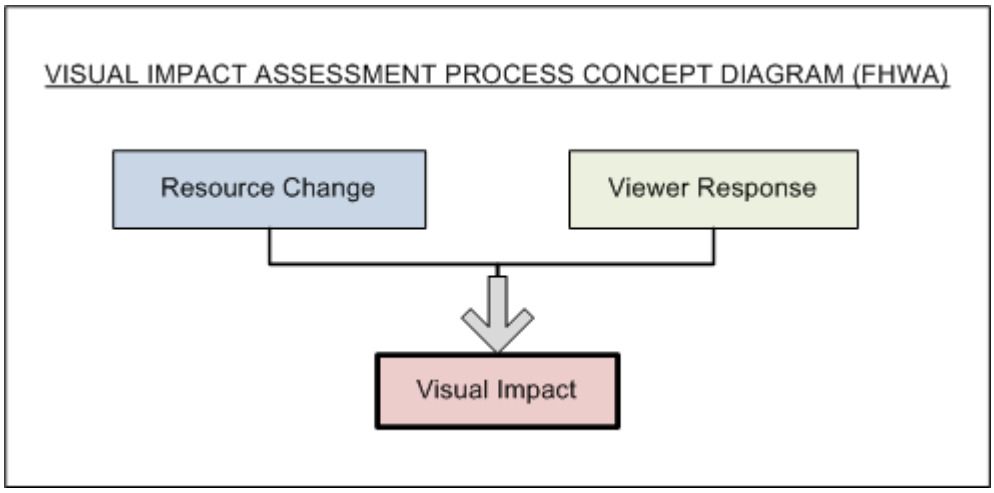
MacArthur Freeway Policy 4. New construction within the scenic corridor should demonstrate architectural merit and a harmonious relationship with the surrounding landscape.

Composite Viewer Response

The narrative descriptions of viewer exposure and viewer sensitivity for each viewer group were merged to establish the overall viewer response of each group. The composite viewer group has limited exposure to all VAUs and low visual sensitivity; therefore, viewer response would be low. This response would be attributed to the proposed project improving the visual character of all VAUs and providing enhanced visual access to all VAUs.

VIII. VISUAL IMPACT

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. These impacts can be beneficial or detrimental. Cumulative impacts and temporary impacts due to the contractor's operations are also considered. A generalized visual impact assessment process is illustrated in the following diagram.



The table below provides a reference for determining levels of visual impact by combining resource change and viewer response.

Table 9. Visual Impact Ratings Using Viewer Response and Resource Change

		Viewer Response (VR)				
Resource Change (RC)		Low (L)	Moderate-Low (ML)	Moderate (M)	Moderate-High (MH)	High (H)
	Low (L)	L	ML	ML	M	M
	Moderate-Low (ML)	ML	ML	M	M	MH
	Moderate (M)	ML	M	M	MH	MH
	Moderate-High (MH)	M	M	MH	MH	H
	High (H)	M	MH	MH	H	H

Visual Impacts by Visual Assessment Unit and Alternative

Because it is not feasible to analyze all the views in which the proposed project would be seen, it is necessary to select a number of key views associated with VAUs that would most clearly demonstrate the change in the Project's visual resources. Key views also represent the viewer groups that have the highest potential to be affected by the Project, considering exposure and sensitivity. In addition, these key views will be analyzed for each proposed alternative.

This VIA also considers the potential impacts of a No-Build Alternative. Under the No-Build Alternative, the Project would not be constructed, and there would be no visual impacts to the existing visual character, visual quality, or affected viewer groups as a result of the proposed project. The Project area and each VAU would remain in its current visual state, especially the Radio Beach and Maze VAUs. The Radio Beach VAU is likely to remain in a more natural condition because its sandy, silty substrate is not suitable for regular development. The Maze VAU has restricted access, which is likely to remain, due to the existing nature of transportation facilities at this location. The Portside VAU may be developed with more industrial uses, which would appear as a visual expansion of and in keeping with current land uses.

The following section describes and illustrates visual impacts by VAU, compares existing conditions to the proposed project and alternatives, and includes the predicted viewer response.

Radio Beach Visual Assessment Unit

Proposed Project and Passive and Active Park Alternatives

The proposed project and Passive and Active Park Alternatives would all result in very similar project features in this VAU, with the exception of the path connection from Key Point to the eastern end of Key Point. Therefore, a combined discussion is included because construction and operational impacts would be similar amongst the proposed project and Passive and Active Park Alternatives.

Construction

Construction impacts would be the same or very similar for the proposed project and Passive and Active Park Alternatives. Based on the planned park development phases (**Table 5**), construction activities to restore natural habitat and install fencing in this VAU would occur in 2030. This would introduce some heavy equipment and associated vehicles, including backhoes, tractors, and trucks into the viewshed of neighbors and users. However, much of the restoration plantings would occur using hand equipment and hand installation.

Construction would be limited to the hours of 8 a.m. and 6 p.m., so nighttime construction would not occur and would not require high-intensity, nighttime lighting. Construction would create temporary visual impacts of views seen of Radio Beach during the construction period by the visual presence of construction activities and equipment. This is not considered adverse due to the temporary nature of construction, transient nature of viewers passing by this VAU, and viewers' familiarity with heavy equipment in the adjacent industrial areas.

This VAU is predominantly invasive iceplant and grasses, as shown in **Figure 11**. Construction activities associated with clearing and grubbing of such an area and installation of restoration plantings and site amenities is likely to be viewed positively because restoration would be associated with creating both visual and habitat diversity that would also attract wildlife.

Operation

The proposed project and Active Park Alternative would result in the same changes within this VAU, as detailed in Table 6 above (pages 47-50). Unlike these alternatives, the Passive Park Alternative would

not include the bicycle/pedestrian path connection from Key Point under the Bay Bridge to the easterly end of Radio Beach, which includes the beach boardwalk, nor parking improvements on the north side of I-80. The proposed project and Passive and Active Park Alternatives would all restore habitat and install protective fencing.

Iceplant provides an attractive, monotypic seasonal flower display in the spring. However, replacing invasive iceplant, grasses, and ruderal vegetation with native plant species under the proposed project and Passive and Active Park Alternatives would enhance the visual conditions within this VAU by increasing visual diversity and interest where such values are currently uniform due to extensive iceplant cover.

Under the proposed project and Active Park Alternative, the pathway connection from Key Point to Radio Beach (refer to **Figures 7a and 7b**) would make Radio Beach a destination location within the park and increase visitor numbers in this VAU, compared to existing conditions. The path and boardwalk would be constructed of concrete and wood and would not degrade the existing visual character, as seen in **Figure 15**, Simulation 1. The concrete portions of the pathway would be over riprap along the water's edge and over water near the shoreline as it travels under the Bay Bridge. The concrete would blend with nearby transportation structures and the riprap. The wooden boardwalk would traverse the restoration areas, and its natural materials would blend with the plant life and recede into the restoration areas, as illustrated by Simulation 1. The path and boardwalk would not block scenic vista views to the surrounding Bay area because they would be low-profile.

The path and boardwalk would allow recreationists to access parts of the VAU that are currently not accessible, because there are no existing overwater or overland routes besides the access road. The pathway and boardwalk would allow for more shoreline visual access over the water and more interior views of restoration areas. The boardwalk would also allow disabled recreationists to access this beach area, which would otherwise be difficult because sand is a loose substrate. Benches and overlooks would provide resting spots for recreationists to stop and take in views of the VAU and surrounding Bay area. The path and boardwalk would blend with the visual environment and not detract from it.

Under the Passive Park Alternative, the path and boardwalk and parking improvements would not be constructed. Therefore, physical and visual access would be similar to current conditions.

Fencing would also be installed under all three alternatives to prevent access to sensitive restoration areas. Standard steel chain link fencing is grey. This or similar lightly colored fencing is less transparent and acts to detract from and partially obscure views through the fencing. Mitigation Measure 1, *Apply aesthetic treatments to fencing*, would reduce the appearance of fencing as a perceived barrier.

In addition to views of native plants and site features, users and neighbors would also enjoy views of increased wildlife diversity resulting from multi-layered native plants creating indigenous habitat, cover, and roosting sites that attract a greater variety of wildlife species. Views of native plants and the path and boardwalk would also serve to provide visual interest to neighboring travelers on the freeway that have views from the Bay Bridge's eastbound approach to the Oakland touchdown and from the outer lanes of westbound I-80 on approach to the bridge.

Viewers within and adjacent to this VAU are familiar with the current monotypic visual conditions created by iceplant within this VAU. The proposed project and the active and passive park alternatives would increase diversity and improve aesthetic value through the replacement of the

iceplant. No lighting would be installed in this VAU as a part of any of the alternatives. Shrubs would help to slightly reduce the existing effects of light and glare by introducing vegetation that can somewhat screen, absorb, and buffer light and glare coming from sources adjacent to this VAU and by creating new sources of shade. Therefore, operation would result in a beneficial change to this VAU and to available views from I-80, a City designed scenic route. None of the alternatives propose the installation of advertising or changes to vegetation along I-80 that would result in a negative alteration in the character of designated segments of the landscaped freeway; therefore, the I-80 landscape freeway designation would not be affected.

Viewer Response

As described under *Composite Viewer Response*, the composite viewer response to the proposed project and both the Active and Passive Park Alternatives would be low.

Viewers within the Project area are familiar with current visual conditions, which are expected to continue through 2030. The visual conditions include the beach, invasive iceplant, existing radio towers, utility poles and wires, and small portable buildings within this VAU. They also include the appearance of nearby large-scale transportation facilities associated with I-80 and the industrial nature of the Port. This area currently lacks a great deal of aesthetic value at the ground-level, causing viewers to pass by this VAU with little interest.

Restoration would enhance visual conditions and beautify available views seen by viewers. It also would encourage viewers to seek views of this VAU, causing a positive viewer response to changes occurring as a result of the proposed project. Therefore, the restoration in this VAU would be beneficial and would improve the existing visual character of the Project area, thereby improving views of neighboring land uses, as well.

Resource Change

Construction

Construction would result in short-term and temporary impacts to visual quality that would not negatively impact the existing visual quality for an extended period of time. Therefore, construction would result in a resource change to this VAU that is low and the resulting visual impacts to scenic views, the existing visual character, and light and glare would be low.

Operation

The vividness of the Radio Beach VAU would be improved by the proposed project because views of monotypic iceplant would be enhanced by restoration plantings that provide visual variety under the proposed project and the active and passive park alternatives. Also, under the proposed project and Active Park Alternative, view accessibility would be increased by the proposed path extending from Key Point to Radio Beach, and the rating would improve from moderate high to high.

The intactness and unity would also improve from moderate high to high because the restoration plantings would enhance and soften the appearance and scale of the nearby highway corridor. This would provide a better visual transition to nearby land uses.

Therefore, the resulting visual quality would improve from moderate high to high. Therefore, operation would result in a resource change to this VAU that is low. The resulting visual impacts to scenic views, the existing visual character, and light and glare would be also be low because of improvements made to the existing visual landscape that include the transformation of a more monotypic, invasive plant

community to one of increased wildlife diversity resulting from multi-layered native plants and improved site amenities, including the path and boardwalk.



Existing Conditions (11/18/2014).



Simulated Conditions.

Figure 15: Simulation 1—from Radio Beach VAU looking southwest toward the pedestrian boardwalk.

Portside Visual Assessment Unit

Proposed Project and Passive and Active Park Alternatives

Construction

Construction impacts would be very similar for the proposed project and Passive and Active Park Alternatives.

Construction activities would introduce considerable heavy equipment and associated vehicles, including backhoes, compactors, tractors, and trucks into the viewshed of all viewer groups. Construction would be phased and occur during three separate development periods as shown in **Table 5**. Each construction period would be perceived as an individual event, yet would be associated with fulfilling implementation of the Project's intended design.

Each phase would create temporary visual impacts to views seen of and from the Project area during the construction period by the visual presence of construction activities and equipment. This is not considered adverse due to the temporary nature of construction, transient nature of viewers passing by and using the Project site, and viewers' familiarity with heavy equipment in the Project area for industrial operations within the Project vicinity and recent construction of the Bay Bridge.

As seen in **Figures 16 through 19**, Simulations 2 through 5, Existing Views, there are existing buildings associated with industrial operations that are present within the Portside VAU, in addition to a limited amount of trees, shrubs, and some ruderal vegetation. Some buildings would be demolished or removed, and most of the existing trees would be removed during construction. However, the remaining buildings would be rehabilitated or left untouched. Demolishing these buildings and removing this vegetation would allow for the space to be reprogramed for public use, a more cohesive landscape plan to be implemented, and a greater amount of healthier vegetation to be planted compared to existing conditions. Therefore, removal of these buildings and vegetation is likely to be viewed in a positive manner.

Temporary visual changes due to construction signaling, signage, and lighting would also occur. This would not be considered adverse due to the short intervals of time that viewers would be in contact with the Project area. Construction would be limited to the hours of 8 a.m. and 6 p.m., so nighttime construction would not occur and would not require high-intensity, nighttime lighting.

Operation

The Portside VAU is comprised of the open space area located south of Burma Road and the industrial uses, associated buildings and infrastructure related to Caltrans and Port operations. While located in close proximity, the Portside VAU is not immediately visible from the Radio Beach VAU because highway infrastructure associated with I-80 and the Caltrans toll facility limits direct views. In addition, the proposed project is not visible from the Maze VAU due to distance and intervening infrastructure and development.

Interpretive and directional way-finding signage along Burma Road, which serves as the site's main entry, would not alter or degrade the visual character of the Project area because the area is highly industrialized with large amounts of existing infrastructure and signage. As described above, the majority of the project area is currently accessed primarily by workers at the Port and Caltrans Maintenance complex, and public access is limited to areas along Burma Road, east of gate. Therefore, the proposed project would open the site west of the gate to public access.

Implementation and operation of each development phase of the proposed project would act to gradually convert the visual character of a visually disjointed and declining industrial area, and reprogram it to be a public park setting that is visually enhanced and cohesive and would improve site aesthetics (refer to **Figures 4a through 6c** and **Figures 8 through 9**).

Obsolete buildings would be removed. Select utilities would be undergrounded, relocated, or removed. Asphalt paved surfaces would be replaced by decorative pavement, as seen in **Figure 16**, Simulation 2. Site amenities such as planter boxes, picnic tables, shade awnings, seating, and public art would also be introduced to transform the site's utilitarian landscapes to public plazas and outdoor spaces. The proposed project would further transform paved, graveled, and sparsely vegetated areas to meadows and urban forest lands, as seen in **Figure 17**, Simulation 3.

These changes would greatly enhance aesthetics associated with the Portside VAU by softening the visual appearance of the site through the introduction of more vegetation and reducing the apparent scale of buildings and structures by planting an urban forest near buildings and structures located onsite and elsewhere within the Project site.

Landscaping and trees would provide visual interest. There would be seasonal changes in color and form, as compared to existing conditions that are largely monotone in color and still. Plant life would sway in the wind. Deciduous vegetation would change color in the fall, change visual form in the winter as leaves fall, and provide flower displays and trees budding in the spring.

As also seen in Simulation 3, the proposed project would also rehabilitate existing structures, including buildings of historical significance, and improve their aesthetic quality. Rehabilitating buildings, like the historic Key Building, would aid in reversing the visual signs of aging and preserving the buildings' visual integrity, in addition to enhancing the architectural attributes of the buildings through the use of decorative treatments like Corten steel.

In addition to site improvements, the proposed project would act to increase shoreline access. As seen in **Figure 18**, Simulation 4, the proposed project would open large portions of the Project area that are currently restricted to the public and create opportunities for the public to have physical and visual access to the Bay's shoreline and waters in an area that is highly urbanized.

The proposed project changes would also create new sources of shade by installing shade structures and trees that would benefit those visiting the Project area and greatly reduce glare compared to current conditions associated with a largely paved environment lacking substantial tree cover.

The trees would also aid in creating an attractive greenspace and gateway to Oakland when seen from eastbound I-80, a City designated scenic route, and the Bay Bridge Trail, as shown in **Figure 19**, Simulation 5. These changes would also benefit viewers leaving Oakland, en route to San Francisco, by creating an attractive entry space at the eastside touchdown of the new east span of the Bay Bridge. While it would take several years for the trees to mature, they would eventually help to buffer views of the Port and aid in reducing the scale of its associated cranes and equipment. None of the alternatives propose the installation of advertising or changes to vegetation along I-80 that would result in a negative alteration in the character of designated segments of the landscaped freeway; therefore, the I-80 landscape freeway designation would not be affected.

Because the Park would be open from dusk to dawn, only a minimal amount of new lighting would be installed for security at dusk and for special events that could be held at the Bridge Yard. Lighting would be a combination of low level foot lighting along paths, exterior lighting on buildings directed downward, and 20-foot steel light standards in Bridge Yard area and in parking lots. Therefore, these

new sources of lighting would not substantially increase light in the project area or contribute to light pollution. However, park lighting may be visually pleasing and aid in creating attractive nighttime views onsite by enhancing and lighting site features, such as pathways and buildings.

As detailed in Table 6, the Active Park Alternative would be very similar to the proposed project, except that the tree buffer near I-80 would also include a berm, there may be slightly more landscaping and lighting, and dogs and pets would be allowed on the north side of the Park at Radio Beach in addition to the south side. The parking areas would be very similar to the proposed project, and all other features would be the same. The nuances associated with the Active Park Alternative do not differ enough to result in added visual benefits or negative visual impacts to existing conditions when compared to the proposed project.

The Passive Park Alternative would not include: the new auditorium in the Bridge Yard; building renovation and use or the new pier at Key Point pier; or the visitor center, play areas, Kayak Beach, boardwalks, Meadow View Point, or active view features associated with the Port Playground area. There would be little to no new landscaping or lighting in any of the park areas, and only up to 300 parking spaces west of the Bridge Yard building would be added. The remainder of features would be the same or very similar to the proposed project, such as the path to the Bay Bridge Trail, meadow and bluff walk, and I-80 tree buffer. Shoreline protection would occur to a lesser degree under this alternative. Dogs and pets would be prohibited throughout the park.

While the Passive Park Alternative would result in fewer site amenities and rehabilitation of existing structures, the Bridge Yard improvements, I-80 tree buffer, and meadow and bluff walk constitute some of the largest visual changes associated with the project and would have the same effects as the proposed project in vastly improving visual conditions and visual access within the Portside VAU.

The existing buildings would remain visually consistent with current conditions and, while their visual condition would not be improved, they would not be altered. Their visual condition may slightly deteriorate over the course of many years, with weather and age; however, the tree buffer would act to limit the weathering effects by reducing the amount of wind hitting the buildings.

The Passive Park Alternative would have slightly reduced visual benefits, compared to the proposed project and Active Park Project because it would not rehabilitate existing structures and would result in fewer aesthetic amenities. However, similar to the Active Park Project, the nuances associated with the Passive Park Alternative do not differ enough to result in negative visual impacts to existing conditions when compared to the proposed project and the Passive Park Alternative would also result in a vast visual improvement when compared to existing conditions.

Viewer Response

As described under *Composite Viewer Response*, the composite viewer response would be moderate-low. Existing viewers within the Project area are likely to respond in a positive manner to the improved visual quality and character of the Project area and views associated with it. In addition, it would provide increased physical and visual access to the project area, the surrounding areas, and the Bay; and it would increase the amount of viewers in contact with the Project area and surrounding views.

Resource Change

Construction

Construction would result in short-term and temporary impacts to visual quality that would not impact the existing visual quality for an extended period of time or result in nighttime construction. Therefore,

construction would result in a resource change to this VAU that is low. The resulting visual impacts to scenic views, the existing visual character, and light and glare would be moderate-low.

Operation

The vividness of the Portside VAU would be greatly improved by the proposed project and its alternatives because views of the largely paved industrial area would be transformed to a vegetated public park setting, and because view accessibility also would be increased. In addition, the proposed project and Active Park Alternative would improve the visual appearance of rehabilitated buildings. Therefore, the vividness rating would improve from moderate to moderate-high.

The intactness and unity would also improve from moderate-low to moderate-high. This is because the landscaping would enhance and soften the appearance and scale of the nearby highway corridor while creating a visually cohesive, programmed park space that is in an area that is currently visually disjointed and degraded. It would also help to reduce the amount of utilitarian infrastructure onsite that is associated with industrial uses. These changes would provide a better visual transition from the park to views of the Bay and nearby land uses.

As a result, the visual quality would improve from moderate-low/moderate to moderate-high. Therefore, operation would result in a resource change to this VAU that is low and the resulting visual impacts to scenic views, the existing visual character, and light and glare would be also be low because of improvements made to the existing visual landscape that include the transformation of a more blighted visual environment with few trees or shrubs to one that has removed obsolete buildings, restored existing buildings, underground some visible utilities, and provided for attractive greenspaces with shade trees, in addition to the other site amenities described above.



Existing Conditions (12/8/2014).



Simulated Conditions.

Figure 16: Simulation 2—from Portside VAU looking east toward the IERBYs Building.



Existing Conditions (11/18/2014).

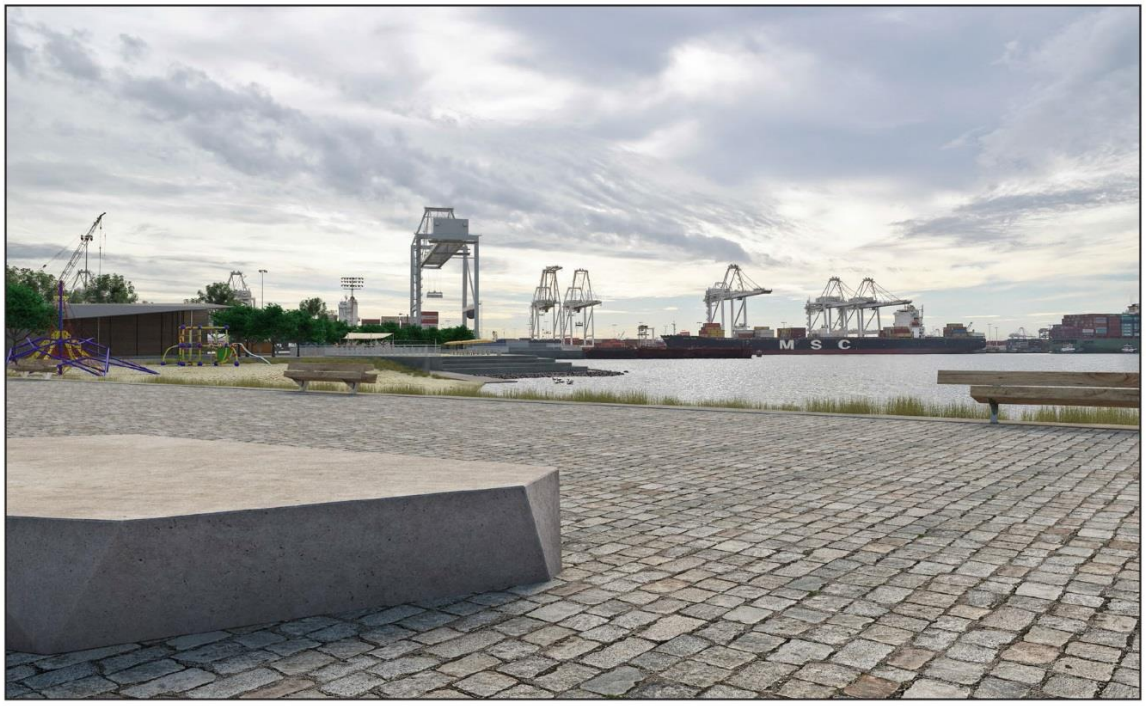


Simulated Conditions.

Figure 17: Simulation 3—from Portside VAU looking east toward the Historical Key Building.

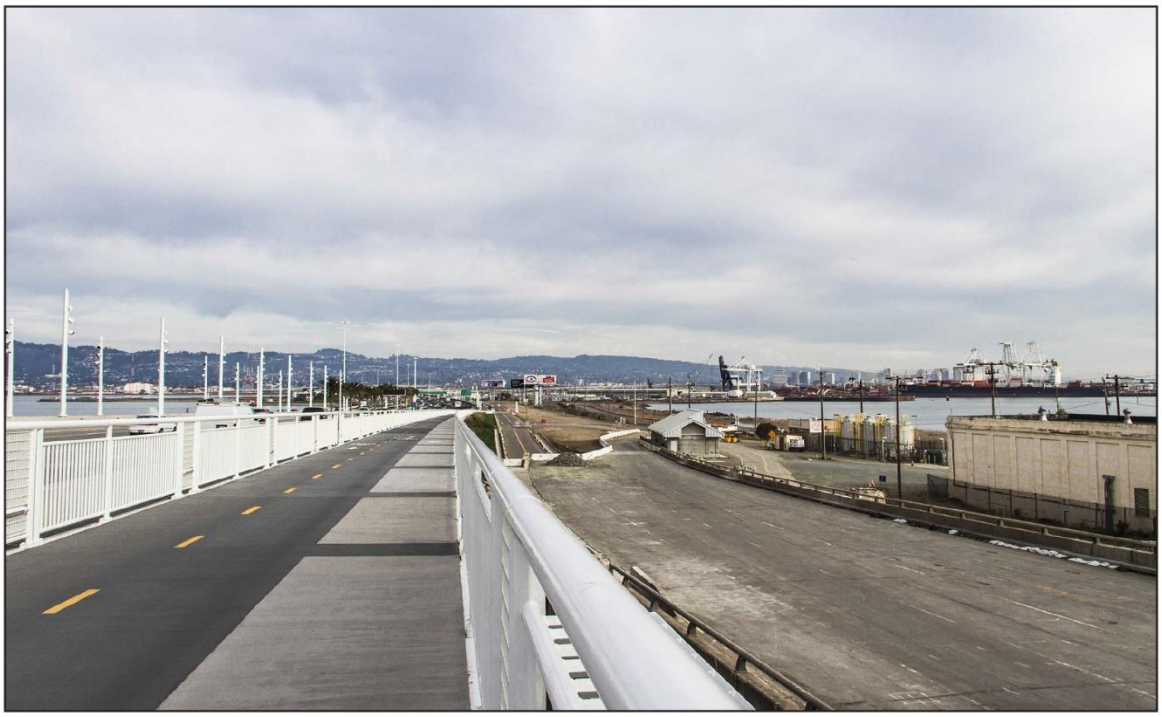


Existing Conditions (12/8/2014).



Simulated Conditions.

Figure 18: Simulation 4—from Portside VAU looking southeast toward the Port Playground.



Existing Conditions (11/18/2014).



Simulated Conditions.

Figure 19: Simulation 5—from Bay Bridge Trail looking east toward the Portside VAU.

Maze Visual Assessment Unit

Proposed Project and Passive and Active Park Alternatives

The proposed project and Passive and Active Park Alternatives may all result in the same type of landscaping under and alongside the freeways in this VAU. Therefore, a combined discussion is included because all impacts would be similar amongst the proposed project and Passive and Active Park Alternatives.

Construction

Construction impacts would be the same or very similar for the proposed project and Passive and Active Park Alternatives.

Construction activities to install landscaping in this VAU could occur in 2030, based on the planned development phases (**Table 5**). This would introduce some heavy equipment and associated vehicles, including backhoes, tractors, and trucks into the viewshed of neighbors. However, much of the landscape installation would occur using hand equipment and hand installation.

Construction would be limited to the hours of 8 a.m. and 6 p.m., so nighttime construction would not occur and would not require high-intensity nighttime lighting.

Construction would create temporary visual impacts of views seen of the Project area during the construction period by the visual presence of construction activities and equipment. This is not considered adverse due to the temporary nature of construction, transient nature of viewers passing by the Project area, and viewers' familiarity with heavy equipment in the Project area associated with recent development within the Project vicinity. In addition, this VAU is predominantly paved surfaces and weeds, grasses, and small shrubs growing in small unpaved areas with no aesthetic value, as shown in **Figure 14**. Construction activities associated with clearing and grubbing such an area and installation of landscaping is likely to be viewed positively by all viewers. If the landscaping is not implemented, construction impacts would not occur.

Operation

Operation impacts would be the same or very similar for the proposed project and Passive and Active Park Alternatives. Landscaping would be introduced into the Project area. Based on the alternative, more or less landscaping could occur within this VAU if landscaping is implemented at this location.

Replacing paved surfaces and ruderal vegetation under and alongside the I-880 and MacArthur Maze aerial structures, which have no aesthetic value, with landscaping would greatly enhance the visual conditions within this VAU. These changes would be seen by neighbors, but fencing would preclude physical access to the VAU.

Existing conditions appear unkempt and lack visual interest. In addition, the aerial transportation structures tower in this VAU, lacking human-scale. As identified in **Table 2**, meadow grasses, coast sage scrub, upland lowland bluff plantings, and vegetative filtration plantings for storm water treatment may be implemented.

Landscaping would soften the appearance and scale of the elevated highway corridor and concrete pillars. These plantings would also provide greenery, visual order, and visual interest where such values are currently very low. In addition, landscaping would provide visual interest to travelers on the freeway with views from on-ramps and off-ramps and outer lanes.

Landscaping would also reduce the existing effects of light and glare by introducing vegetation which can screen, absorb, and buffer light and glare sources coming from structures in this VAU and by creating new sources of shade. Viewers within the Project area are familiar with the current degraded visual conditions of the VAU, and would recognize the improved visual character resulting from the

project. This would create aesthetic value where little currently exists. Therefore, operation would result in a beneficial change to this VAU. If the landscaping is not implemented, the existing visual conditions would remain static.

Viewer Response

As described under *Composite Viewer Response*, the composite viewer response to the proposed project would be low. Viewers within the Project area are familiar with current degraded visual conditions under the large-scale transportation structures within this VAU and the industrial nature of the appearance of nearby areas. This area currently lacks a great deal of aesthetic value, at the ground-level, causing viewers to pass by this VAU with little interest. If the landscaping is not implemented, the response to existing visual conditions would remain static. Landscaping would greatly enhance visual conditions and beautify available views seen be viewers and encourage viewers to seek views of this VAU, causing a positive viewer response to changes occurring as a result of the proposed project. Therefore, the landscaping in this VAU would be beneficial, and it would improve the existing visual character of the Project area, thereby improving views of neighboring land uses as well.

Resource Change

Construction

Construction would result in short-term and temporary impacts to visual quality that would not negatively impact the existing visual quality for an extended period of time. Therefore, construction would result in a resource change to this VAU that is low. The resulting visual impacts to scenic views, the existing visual character, and light and glare would be low. If the landscaping is not implemented, construction impacts would not occur.

Operation

The vividness of the Maze VAU would be improved by the proposed project because views of paved surfaces and ruderal vegetation with little to no aesthetic value would be greatly enhanced by being replaced with landscaping. The rating would improve from moderate-low to moderate.

The intactness and unity would also improve from moderate-low to moderate because the new landscaping would enhance and soften the appearance and scale of the elevated highway corridor and concrete pillars. This would provide a better linkage and transition to nearby local streets and land uses. Therefore, the resulting visual quality would improve from moderate-low to moderate.

Therefore, operation would result in a resource change to this VAU that is low. The resulting visual impacts to scenic views, the existing visual character, and light and glare would be also be low because of improvements made to the existing visual landscape that include the transformation of a more blighted visual environment with only ruderal grasses and weeds to one that would provide an attractive greenspace with shrubs, grasses, and bioswale filtration features. If the landscaping is not implemented, a resource change would not occur and the existing visual conditions would remain static.

Summary of Visual Impacts by Visual Assessment Unit and Alternative

Construction and operation impacts for the proposed project, Passive Park Alternative, and Active Park Alternative are described above. The table below summarizes and compares the narrative ratings for visual resource change, viewer response, and visual impacts between alternatives for each key view.

Table 10. Summary of Key View Narrative Ratings					
Visual Assessment Unit	Key View	Impact Type	Proposed Project, Passive Park Alternative, & Active Park Alternative*		
			Resource Change	Viewer Response	Visual Impact
Radio Beach	1	Construction	L	L	L
		Operation	L	L	L
Portside	2	Construction	L	L	L
		Operation	L	L	L
Maze	3	Construction	L	L	L
		Operation	L	L	L
* Proposed Project, Passive Park Alternative, and Active Park Alternative are summarized in the same table because each build alternative would result in very similar visual impacts.					

Impacts from each alternative would be comparable. Therefore, the summary has been condensed into a singular discussion and a detailed comparison is not provided.

Landscaping within the Maze VAU would likely not occur under the Passive Park Alternative, but would occur under the proposed project and Active Park Alternative.

As identified and described earlier in this section, the proposed project and Passive and Active Park Alternatives would all improve the visual conditions associated with the Radio Beach and Portside VAUs in a very similar manner. The primary differences occurring within the Radio Beach and Portside VAUs, as a result of the proposed project or the two alternatives, is summarized as follows: the amount of active recreational features, number of parking lots and spaces, whether there would be a boardwalk and pathway to Radio Beach, whether or not buildings to remain would be rehabilitated, the inclusion of the auditorium and visitors center, and differing restrictions for pet access. The proposed project and both alternatives would vastly increase physical and visual access associated with the project area and Bay.

During construction, the proposed project and both alternatives would remove some buildings and trees, but they would all result in improved visual conditions by substantially decreasing the amount of gravel and pavement and by increasing the amount of landscaping and trees at the project area.

Lighting associated with the proposed project and both alternatives would be minimal and installed in a manner that would not increase light pollution. Trees installed as a result of the proposed project and both alternatives would also act to substantially reduce the amount of glare at the site, introducing many new sources of shade that would screen and filter any new lighting installed.

The quality and character of views as seen from I-80, a City designated scenic route, would be improved. Therefore, the proposed project and Passive and Active Park Alternatives would all result in substantial beneficial visual impacts compared to existing conditions.

IX. PROJECT VISUAL IMPACT SUMMARY

The Project visual impact summary is provided under *Summary of Visual Impacts by Visual Assessment Unit and Alternative*, above.

Temporary Construction Visual Impacts

Temporary visual impacts resulting from construction were described earlier in this section. Please refer to those sections for more detail.

X. CUMULATIVE VISUAL IMPACT

Cumulative impacts are those resulting from past, present, and reasonably foreseeable future actions, combined with the potential visual impacts of this project. The combined visual effect of this proposed project and other development projects planned, recently constructed, or currently in construction would change the visual character of the region. This includes visual changes that result from the Bay Bridge project completed in 2013, redevelopment of the Oakland Army Base, Port projects, and other planned projects in the cities of Emeryville, Alameda, San Francisco, and Oakland based on their general plans. These all will contribute to growth and development surrounding the Project area. The proposed project is driven by the purpose, need and relevant goals and policies discussed above, that strive to provide and increase physical and visual access to the Bay's shoreline and to provide amenities that support current and future land uses in the vicinity. The proposed project and the Active and Passive Alternatives would result in the same or similar cumulative visual impacts.

Temporary construction impacts associated with the proposed project would not result in cumulative visual impacts because they would be short-term and temporary, especially when compared to larger scale development and transportation projects occurring and that occurred, are occurring, and are likely to occur in the project area. The plans, once implemented, will expand and improve existing transportation and recreation facilities, and induce development and re-development of areas along the Bay's shoreline and within cities' boundaries. Therefore, when factored with these changes, the proposed project and both alternatives would result in helping to offset adverse cumulative effects as follows: by creating beneficial visual impacts; by increasing visual access to the project area, the Bay, and surrounding areas; and by creating a naturalized, vegetated public park and open spaces that provide visual relief and substantially improve the visual quality and character of the site within an area that is highly urbanized and industrial.

XI. AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

This section describes additional avoidance, minimization, and/or mitigation measures, in addition to the aesthetic features in the project design, discussed in *Section II*, that would address specific visual impacts. These will be designed and implemented with concurrence of the District Landscape Architect.

Avoidance and minimization measures are not proposed. The project is largely visually beneficial. However, the following mitigation measure will offset visual impacts associated with exclusionary fencing that would be installed in conjunction with the Radio Beach restoration and will be incorporated into the project.

1. **Apply aesthetic treatments to fencing.** New fencing associated with the proposed project will be designed in a manner that allows these features to blend with the surrounding built and natural environments so that the new features complement the visual landscape. The use of ornamental fencing that complements the restoration areas of Radio Beach shall be evaluated. Aesthetic considerations shall be balanced with other considerations including cost, safety, maintenance, and durability. At a minimum, unless made of natural materials, any proposed fencing will be powder coated and colored a shade that is two to three shades darker than the general surrounding area such as a dark evergreen, black, or dark brown color. These darker colors will allow fencing to recede into the visual landscape as much as possible and for more

transparent views through the fencing. Light or bright colors will be avoided because such colors, including grey stainless steel, creates more of a visual barrier that creates visual focus, is less transparent, and increases glare. Colors may be chosen from the U.S. Department of the Interior Bureau of Land Management Standard Environmental Colors Chart CC-001: June 2008. Because color selection will vary by location, the facility designer may employ the use of color panels evaluated from key observation points during common lighting conditions (front light versus backlighting) to aid in the appropriate color selection. Color selection will be made for the coloring of the most prevalent season. Panels should be a minimum of 3 feet-by-2 feet in dimension and evaluated from various distances within 1,000 feet to ensure the best possible color selection. Paints used from the color panels and structures should be color matched directly from the physical color chart, rather than from any digital or color-reproduced versions of the color chart. Appropriate paint type will be selected for the finished structures to ensure long-term durability of the painted surfaces and environmental safety. The appropriate operating agency or organization will maintain the paint color over time. Fencing will be managed and maintained for a well-kept appearance and in a manner that vandalism, graffiti, or damage is abated semi-annually to maintain the effectiveness and attractiveness of the visual mitigation prescribed herein.

Summary of Avoidance, Minimization, and/or Mitigation Measures by Alternative

Table 12 summarizes the numbered avoidance, minimization, and/or mitigation measures from above for each alternative.

Table 11. Summary of Avoidance, Minimization, and/or Mitigation Measures by Alternative

ALTERNATIVE	AVOIDANCE AND MINIMIZATION	MITIGATION
Proposed Project	None	1. Apply aesthetic treatments to fencing
Passive Park Alternative	None	1. Apply aesthetic treatments to fencing
Active Park Alternative	None	1. Apply aesthetic treatments to fencing

XII. CONCLUSIONS

The proposed project would result in beneficial visual changes to the project area that would not result in adverse visual impacts or negatively impact existing viewer groups. It would not substantially increase light and glare in the project area, but would help to reduce glare associated with the project area. Implementation of the mitigation measure would enable the new fencing to protect the restoration area at Radio Beach to be less apparent and to recede into the visual landscape. The proposed project would be cumulatively beneficial by increasing visual access to the project site, the Bay, and to surrounding areas and by creating a naturalized, vegetated public park and open spaces that provide visual relief within an area that is highly urbanized and industrial.

XIII. REFERENCES

Association of Bay Area Governments (ABAG). 1999. *Bay Trail Plan*. Available: <www.baytrail.org/baytrailplan.html >. Accessed: April 29, 2013.

California Department of Transportation (Caltrans). 2013. *California Scenic Highway Mapping System, Alameda County*. Available: <www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm>. Accessed: April 29, 2013.

———. 2014a. *Classified "Landscaped Freeways" - November 12, 2014*. Available: <http://www.dot.ca.gov/hq/LandArch/16_la_design/classified_ls_fwys/pdf/class_ls_fwy.pdf>. Last updated: November 12, 2014. Accessed: September 15, 2015.

———. 2014b. *Outdoor Advertising Act and Regulations - 2014 Edition*. Available: <http://www2.dot.ca.gov/oda/download/ODA_Act_&_Regulations.pdf>. Last updated: January 24, 2014. Accessed: September 15, 2015.

CH2M Hill. 2014. Technical Memorandum: Sea Level Rise Adaptation – Revision 3. February 17, 2014.

City of Oakland. 1974. *City of Oakland General Plan – Scenic Highways Element*. Adopted: September 1974. Oakland, CA.

———. 1996. C*ity of Oakland General Plan – Open Space, Conservation, and Recreation Element*. Adopted: June 1996. Oakland, CA.

———. 1998. *City of Oakland General Plan – Land Use and Transportation Element*. Adopted: March 1988. Oakland, CA.

Federal Highway Administration. 1988. *Visual Impact Assessment for Highway Projects.* (FHWA-HI-88-054.) U.S. Department of Transportation, 1988.

San Francisco Bay Conservation and Development Commission (BCDC). 2005. *Shoreline Spaces: Public Access Design Guidelines for the San Francisco Bay*. Adopted: April 2005. San Francisco, CA.

Smardon, R. C., J. F. Palmer, and J. P. Felleman. 1986. *Foundations for Visual Project Analysis*. New York, NY: John Wiley & Sons, Inc.

Appendix D

Air Quality Analysis Technical Memo

Memorandum

Date:	November 4, 2015
To:	Eva Lillie and Brian Krcelic T.Y. Lin International 1111 Broadway, Suite 2150 Oakland, CA 94607
From:	Shannon Hatcher and Darrin Trageser, ICF International
CC:	Rich Walter, Diana Roberts, and Kate Giberson, ICF International
Subject:	**Gateway Park Project — Air Quality Analysis (EA 4H9710 EFIS 0413000324)**

Introduction

The proposed project is the creation of a new park (Park) at the east touchdown of the San Francisco–Oakland Bay Bridge (Bay Bridge) in Oakland, California. The idea for a park at this location was conceived in the 1990s during planning for 1) replacement of the east span of the Bay Bridge, 2) reuse of the Oakland Army Base, and 3) demolition and reconstruction of Interstate (I) 880 (i.e., the Cypress/I-880 freeway project), which has been built. A park at this location would provide a gateway to both the new east span of the Bay Bridge and the city of Oakland.

The Park would include approximately 45 acres along the waterfront, near the touchdown of the new east span of the Bay Bridge. Outside the Park boundaries, the proposed project could also include landscaping and parking near I-880.

The Park would provide safe access to the new bicycle/pedestrian path on the new east span of the Bay Bridge (Bay Bridge Trail) as well as existing and planned segments of the regional San Francisco Bay Trail. It would also provide access to the shoreline and be a unique waterfront amenity. The Park would include active and passive recreational opportunities and a venue for community events and art displays. In addition, it would showcase the natural, maritime, industrial, and transportation history of the East Bay area.

The project is proposed by the Gateway Park Working Group, which includes the following nine local, regional, and state agencies: Bay Area Toll Authority (BATA), California Department of Transportation (Caltrans), San Francisco Bay Conservation and Development Commission (BCDC),

California Transportation Commission (CTC), East Bay Regional Park District (EBRPD), City of Oakland, Port of Oakland, East Bay Municipal Utility District (EBMUD), and Association of Bay Area Governments (ABAG). At this time, it is envisioned the Park would be a regional park and operated by EBRPD or a Joint Powers Authority. BATA is the lead agency under the California Environmental Quality Act (CEQA).

This technical memorandum addresses construction and operational issues related to criteria pollutants and mobile-source air toxics (MSATs. The environmental document discusses construction and operational impacts related to criteria pollutants, health risks, odors, and climate change, and greenhouse gas (GHG) emissions, consistent with the Bay Area Air Quality Management District (BAAQMD) CEQA air quality guidelines.

This memorandum was prepared by ICF senior air quality specialist Shannon Hatcher and air quality specialist Darrin Trageser. It includes the following sections:

- Project Description
- Project Construction
- Environmental Setting
- Environmental Consequences
- Avoidance, Minimization, and Mitigation Measures
- References Cited

Project Description

This section describes the proposed project (Gateway Park) that was developed to meet the identified objectives and needs through accomplishing the defined purposes, while avoiding and minimizing environmental impacts. The project alternatives are discussed in Section 1.6.

The Park would be located in the City of Oakland, Alameda County, adjacent to Interstate 880 and Interstate 80 at the eastern touchdown of the Bay Bridge. The project area includes underutilized industrial land on the south side of I-80, extending from the San Francisco Bay shoreline on the west to the Caltrans maintenance facility near the Bay Bridge toll plaza on the east. The project area also includes the Radio Beach area on the north side of I-80 and land beneath and adjacent to I-880 and the I-880/I-80/I-580 interchange.

The purpose of the project is to:

- provide a gateway to both the new East Span of the Bay Bridge and the City of Oakland,
- provide safe access to the new bicycle/pedestrian path on the new East Span and to other regional trails,
- provide access to the shoreline and recreation opportunities; and
- showcase the natural, maritime, industrial and transportation history of the East Bay area.

The approximately 45-acre Park has been divided into the following four park areas: Bridge Yard, Key Point, Port Playground, and Radio Beach. The Park would be developed in the following three phases as funding becomes available, with anticipated buildout in 2030.

- Phase 1 (Approximately 2 Years) – Bridge Yard
- Phase 2 (Approximately 2 Years) – Key Point
- Phase 3 (Approximately 3 Years) – Port Playground and Radio Beach

Following is a description of the primary features in each of the park areas, other park features, and project phasing. Table 1 provides a summary of the park areas and primary features.

Table 1. Summary of Park Areas and Primary Features

Park Area and Primary Features		Description	Approximate Size
1	**Bridge Yard**	**A destination recreation and event center in the core park area south of I-80.**	**10 acres**
A	Arrival Plaza	Plaza on east side of Bridge Yard Building could include vehicular drop-off area, bicycle parking area, and benches.	50,100 sf
B	Historic Display Plaza	Plaza on west side of Bridge Yard Building could include train rails with historic train car, picnic tables and shade canopy.	12,880 sf
C	Outdoor Yard Event Space	West and south of Bridge Yard Building for exhibits/performances (200 people) or larger concerts, conferences or outdoor movies (500–1,700 people).	281,400 sf
D	Bridge Yard Building[1] Improvements	Minor internal improvements and use (e.g., meetings, events) of renovated building.	24,300 sf
E	Indoor/Outdoor Auditorium	Embedded into the landscape, southeast of the Bridge Yard Building.	3,400 sf
2	**Key Point**	**Passive recreation area south of I-80 at the west end of the park near the Bay Bridge.**	**6 acres**
A	Building Renovation	Renovate historic Key Building and Mole Substation visitor services	Key Building 1,450 sf Mole Substation 4,000 sf
B	Path to Bay Bridge Trail	Path for bicyclists/pedestrians to connect the Key Point area to Bay Bridge Trail.	770 feet long and 17 feet wide
C	Pier	New pier extending into Bay, along old Bay Bridge alignment.	300 feet long and 30 feet wide
3	**Port Playground**	**Active and passive recreation area south of I-80 along the southern shoreline.**	**11 acres**
A	Visitor Center	Main visitor center (3,500 sf) with lobby, gift shop, ranger station, café; lockers/ restrooms (1,500 sf); and kayak building (1,475 sf) for storage of 30 kayaks and 40 bikes. Three separate low-profile structures connected by covered, open-air walkways.	6,475 sf buildings 41,530 sf
B	Play Areas	Main playground (24,740 sf); beach terrace with volleyball court, picnic tables and fire pits (26,500 sf), skate park (19,070 sf), and climbing structures.	

Park Area and Primary Features		Description	Approximate Size
C	Kayak Beach	Sandy beach area, kayak launch facilities, and cement ramp.	31,240 sf beach area 200' long x 19' wide ramp
D	Boardwalk	Cement walkway with observation areas, benches, picnic areas.	10,990 sf
E	Meadow View Point	Natural grassy area providing elevated view (approximately 19 feet above ground level) overlooking Bay.	1.75 acres (76,860 sf)
F	Meadow and Bluff Walk	Large natural open space with pathways extending to Key Point.	5 acres
G	Active View Feature	Active view features (e.g., elevated zip line, ropes course, observation tower or similar).	--
4	**Radio Beach**	**Passive recreation area north of I-80.**	**5 acres**
A	Path to Radio Beach	Path for bicyclists/pedestrians to access Radio Beach from the Key Point area.	4,000–4,200 feet long
B	Restoration	Planting and habitat enhancement in Radio Beach Area	4 acres
C	Fencing	Permanent fencing to protect existing environmentally sensitive area.	1,670 feet long

[1] The Bridge Yard Building, formerly called the Interurban Electric Railway Bridge Yard Shop (IERBYS) and the Sawtooth Building, is being rehabilitated by Caltrans as part of a separate project. Caltrans is removing their old equipment and seismically retrofitting for human use. Rehabilitation is scheduled to be complete in 2015.

Project Features

A. Windbreak/Tree Buffer

The Park would include an approximately 14-acre Windbreak/Tree Buffer that would extend along the south side of I-80 in the Port Playground and Key Point areas. The Windbreak/Tree Buffer would include approximately 1,500 trees on 14 acres along the south side of I-80. The purpose is to block and diffuse vehicular air emissions from I-80 and provide a visual identity for the Park, a visual buffer between the Park and I-80, and shade and structure for circulation within the Park. The trees would be planted to provide view lines to the water and Port of Oakland.

The trees would be primarily evergreen and would achieve a maximum height of 45–50 feet, which is below the bottom edges of existing billboard signs. Qualified botanists would determine evergreen tree species based on the ability to thrive in marine conditions, tolerate occasional salt water intrusion and strong winds, and lose and replace leaves. Existing vegetation that has survived and thrived on the site includes including Monterey cypress, Torrey Pines, and Eucalyptus as well as other species.

B. Landscaping

In addition to the Windbreak/Tree Buffer, there would be landscaping (trees and shrubs) planted in various locations near buildings throughout the Park areas south of I-80. Additionally, landscaping could be planted under the freeways east of the Park (I-880 and the I-880/80/580 maze) to improve aesthetics and air quality for park visitors and West Oakland residents. A general description of the planned landscaping, including the estimated number of trees, is provided in **Table 2**.

Table 2. General Description of Planned Landscaping

Park Area	Plantings
Bridge Yard	Large native Oak trees (approximately 35), native and endemic meadow grasses, vegetative filtration plantings for storm water treatment, and extension of the windbreak planting (approximately 375 trees).
Key Point	Large scale vegetative filtration plantings for storm water treatment in an upland marsh, as well as the extension of the windbreak planting (approximately 150 trees).
Port Playground East (active recreation area)	Vegetative filtration plantings for storm water treatment, upland plantings at the playground, and possibly container planting.
Port Playground West (meadows and bluff walk)	Native and endemic meadow grasses, coast sage scrub, upland bluff and low land bluff plantings, vegetative filtration plantings for storm water treatment, as well as the extension of the windbreak planting (approximately 950 trees).
Freeways (under I-880 and I-880/80/580 maze)	Native and endemic meadow grasses, coast sage scrub, upland bluff and low land bluff plantings, vegetative filtration plantings for storm water treatment.

C. Lighting

Park hours would be dawn to dusk, but a minimal amount of lighting would be provided for security at dusk and for special events that could be held at the Bridge Yard. Lighting would be a combination of low level foot lighting along paths, exterior lighting on buildings directed downward, and 20-foot steel light standards in Bridge Yard area and in parking lots. There would be no lighting in the Radio Beach area.

D. Parking

Public parking would be provided with 255–755 parking spaces in different areas of the park. Refer to **Table 3**.

It is noted that the proposed parking plan is subject to change and refinement over time, given the project's horizon year of 2030 and changing conditions and availability of potential off-site parking locations. The Draft EIR analysis will analyze a reasonable range of anticipated parking locations that would serve the project.

Table 3. Proposed Parking

Parking Area	Location	Number of Spaces[1]	Other Features
A	West of Bridge Yard building	200	Possibly trees/landscaping.
B	Windbreak	50–150	Parking dispersed in three areas of the Windbreak.
C	Radio Beach	5	Parking located where there is currently informal parking (e.g., unpaved, oyster shells).
Subtotal		*255–555*	
D	Wood Street	0–200	The Park project could add up to 200 additional spaces to a planned 100-space parking lot, proposed as part of a separate project[2] that would provide a bike path connection from the Wood Street parking lot in West Oakland to the Bay Bridge Trail near the proposed Park.
Total		**255–755**	

[1] The number of parking spaces is a conservative estimate for planning and analysis. The number of spaces in any of the Parking Areas could be less than shown.

[2] Caltrans and Bay Area Toll Authority are proposing the San Francisco Oakland Bay Bridge Bicycle/Pedestrian Connection Project (Path) in West Oakland. It includes an approximately 6 030 foot long bicycle/pedestrian path extending between Mandela Parkway on the east and the new Bay Bridge Trail leading to the new East Span of the Bay Bridge on the west.

E. Way Finding Elements

Way-finding elements include interpretive and directional signage along pathways throughout the Park. Additional, way-finding elements could include old Bay Bridge artifacts and could be located along Burma Road.

F. Shoreline Protection

Shoreline protection features would be provided along most shoreline areas to minimize erosion. Shoreline protection features would be a combination of gently graded slope, vegetation plantings, riprap, retaining walls, and revetment walls above and below the water line, as described in **Table 4**. Shoreline protection features would be completed as the associated Park areas are developed based on project phasing (**see Attachment 1**).

Table 4. Proposed Shoreline Protection

Location	Protection Measures	Area and Fill Below Mean High Tide Line
Key Point	Concrete sea wall and retaining wall at EBMUD outfall.	Area: 0.23 acres Fill: 4,100 cubic yards
South Shoreline between Key Point and Port Playground	4:1 slope with plantings, rock, gravel, sand and revetment[1] wall below water line.	Area: 0 acres Fill: 0 cubic yards
Port Playground (Kayak Beach)	4:1 slope with rock, gravel, larger sand area and revetment wall below water line.	Area: 0 acres Fill: 0 cubic yards
Port Playground (Picnic Area + Boardwalk)	4:1 slope with transition from stone/concrete terrace wall and revetment wall above water line to rip rap embankment below water line.	Area: 0 acres Fill: 0 cubic yards
Port Playground (Skate Park)	Existing concrete wall retained.	Area: 0 acres Fill: 0 cubic yards

[1] Revetments are sloping structures placed on banks to absorb the energy of incoming water, and are used as a solution for coastal erosion defense in areas where crashing waves may otherwise deplete the coastline.

Note: see also Table 9 for estimated excavation and fill material required for park development. The required fill shown in this table is included in the estimated totals in Table 9.

G. Sea Level Rise Adaptation

The project area is relatively flat, elevated approximately 8–12 feet above the mean lower low water, and surrounded by the Bay on the north, west and south sides. Due to proposed park improvements and anticipated sea level rise,[1] a large portion of the park south of I-80 would be elevated by 2–10 feet by adding fill. The Park areas would be elevated as they are developed based on project phasing.

H. Retention Basins/Stormwater Drainage

The existing retention basin, located south of I-80 and west of the Bridge Yard, would be retained with no changes. It was constructed to receive stormwater runoff from the Bay Bridge toll plaza area. Proposed Park features would be designed so there is no impact to the existing basin.

Additional retention basins (e.g., three biofiltration swales) would be constructed at the west end in the Key Point area to treat stormwater runoff from the Park project. The biofiltration swales would be designed to include a layer of imported biofiltration soil and, if feasible, an underdrain system. The feasibility of underdrain systems would be assessed based on the existing and proposed drainage facilities and site constraints. Specifically, groundwater levels would need to be assessed

[1] CH2M Hill. Technical Memorandum: Sea Level Rise Adaptation – Revision 3. February 17, 2014.

for underdrain systems. Soils in the facility would need to meet biotreatment soil specifications approved by the Regional Water Quality Control Board. A minimum percolation rate of 5 inches per hour and a maximum percolation rate of 10 inches/hour are required. Planting soil layer would be at least 18 inches deep. Shrubs and small trees would be placed to anchor the bioretention area cover, based on guidance in the Alameda County C.3 Storm Technical Guidance (Appendix B) dated May 2013. A side slope of 4:1 or flatter would be used. The biofiltration swales would be integrated as part of the Park landscaping and would not be fenced.

Stormwater runoff from most of the new impervious path areas would sheet flow to nearby vegetated areas. Overall, the Project would discharge into unlined channels and ditches which would be tied into existing drainage systems, which are anticipated to have sufficient capacity to accommodate existing stormwater runoff without requiring significant upgrade or modification. Flow would eventually discharge to the Bay. The objective of the Park drainage design would be to limit the flow and velocities such that existing conditions and drainage patterns are maintained.

A Stormwater Pollution Prevention Plan (SWPPP) would be implemented, as part of the required National Pollutant Discharge Elimination System (NPDES) and a General Construction Activity Storm Water Permit, to minimize the potential for sediments or contaminants to be discharged into San Francisco Bay.

Alternatives

No Project

Under the No-Project Alternative, there would be no Park or improvements at the project site.

Passive Park Alternative

Under the Passive Park Alternative, there would be minimal improvements. These would provide access to the renovated Bridge Yard building and the shoreline. There would be no improvements related to active recreation, no new access to Radio Beach, and a minimal amount of parking. Dogs/pets would not be allowed anywhere in the Park.

In the Bridge Yard area, the proposed improvements would be similar to those of the proposed project, except there would be no indoor/outdoor auditorium. In the Port Playground area, there would be only pathways, benches, and restrooms. There would be no visitor center or recreational activities or improvements. In the Key Point area, there would be a new pier and a path to the Bay Bridge Trail, similar to the proposed project. In the Radio Beach area, there would be restoration work and fencing to protect the existing tidal marsh area, but there would be no new access path and no parking improvements.

Active Park Alternative

Under the Active Park Alternative, the general improvements related to passive and active recreation would be the same as those of the proposed project. The kayak launch would be located at the far western end by the Bay Bridge, in the Key Point area, instead of the Port Playground area. Additionally, a berm would be incorporated into the windbreak/tree buffer area south of I-80, dogs/pets would be allowed on both the north (Radio Beach) and south sides of the Park, and there would be more parking throughout the Park.

Environmental Setting

The air quality management agencies of direct importance in the project area include the U.S Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and BAAQMD.

The following sections provide a brief description of these agencies and discuss existing air quality conditions in the project area. Sensitive receptors in the project area are also discussed.

Federal Regulations

Air Quality

The federal Clean Air Act (CAA), enacted in 1963 and amended several times thereafter (including the 1990 CAA Amendments, known as the CAAA, which are the current federal governing regulations for air quality), establishes the framework for modern air pollution control. EPA has established national ambient air quality standards (NAAQS) for six criteria pollutants (**Table 5**). Criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2) ozone, lead, and particulate matter (PM), which includes two subsets: PM less than 10 microns in diameter (PM10) and PM less than 2.5 microns in diameter (PM2.5). Most standards have been set to protect public health. For some pollutants, standards have been based on other values (e.g., protection of crops, protection of materials, avoidance of nuisance conditions).

Climate Change

Although climate change and GHGs are concerns at the federal level, regulations and legislation have not been enacted to address specifically climate change and GHGs at the project level. Neither the EPA nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods for conducting project-level GHG analysis.[2] FHWA supports an approach in which climate change considerations are integrated throughout the transportation decision-making process, from planning through project development and delivery. Addressing climate change mitigation and adaptation early in the planning process assists the decision-making process and improves efficiency at the program level, thereby informing the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many aspects of planning, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

State Regulations

Air Quality

Responsibility for achieving the California ambient air quality standards (CAAQS) (Table 5), which, for certain pollutants and averaging periods, are more stringent than the federal standards, is placed on ARB and local air pollution control districts. State standards are achieved through district-level air quality management plans that are incorporated into the SIP, for which ARB is the lead agency.

The California Clean Air Act of 1988 (California CAA) added substantially to the authority and responsibilities of air districts. The California CAA designates air districts as *lead air quality planning agencies*, requires air districts to prepare air quality plans, and grants air districts the authority to implement transportation control measures. Other responsibilities of air districts include overseeing stationary-source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing the air quality–related sections of CEQA-required environmental documents.

The California CAA focuses on attainment of the CAAQS and requires designation of attainment and nonattainment areas with respect to these standards. The act also requires that local and regional air districts expeditiously adopt and prepare an air quality attainment plan (Clean Air Plan) if the district violates state air quality standards for ozone, CO, SO_2, or NO_2. These plans are designed specifically to attain state standards and must achieve an annual 5 percent reduction in district-wide emissions of each nonattainment pollutant or its precursors. No locally prepared attainment plans are required for areas that violate the state PM10 standards; ARB is responsible for developing plans and projects that achieve compliance with the state PM10 standards.

[2] To date, no national standards have been established regarding mobile-source GHGs, nor has EPA established any ambient standards, criteria, or thresholds for GHGs resulting from mobile sources.

Table 5. Federal and State Ambient Air Quality Standards

			National Standards	
Criteria Pollutant	Averaging Time	California Standards	Primary	Secondary
Ozone	1 hour	0.09 ppm	None	None
	8 hours	0.070 ppm	0.070 ppm	0.070 ppm
Particulate Matter (PM10)	24 hours	50 μg/m^3	150 μg/m^3	150 μg/m^3
	Annual mean	20 μg/m^3	None	None
Fine Particulate Matter (PM2.5)	24 hours	None	35 μg/m^3	35 μg/m^3
	Annual mean	12 μg/m^3	12.0 μg/m^3	15.0 μg/m^3
Carbon Monoxide	8 hours	9.0 ppm	9 ppm	None
	1 hour	20 ppm	35 ppm	None
Nitrogen Dioxide	Annual mean	0.030 ppm	0.053 ppm	0.053 ppm
	1 hour	0.18 ppm	0.100 ppm	None
Sulfur Dioxide	Annual mean	None	0.030 ppm	None
	24 hours	0.04 ppm	0.014 ppm	None
	3 hours	None	None	0.5 ppm
	1 hour	0.25 ppm	0.075 ppm	None
Lead	30-day average	1.5 μg/m^3	None	None
	Calendar quarter	None	1.5 μg/m^3	1.5 μg/m^3
	3-month average	None	0.15 μg/m^3	0.15 μg/m^3
Sulfates	24 hours	25 μg/m^3	None	None
Hydrogen Sulfide	1 hour	0.03 ppm	None	None
Vinyl Chloride	24 hours	0.01 ppm	None	None

Source: California Air Resources Board, 2015a.
Notes:
ppm = parts per million
μg/m^3 = micrograms per cubic meter

Climate Change

With the passage of several pieces of legislation, including Senate and Assembly Bills and Executive Orders, California launched an innovative and pro-active approach to dealing with GHG emissions and climate.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions, Greenhouse Gases, 2002: This bill requires ARB to develop and implement regulations to reduce automobile and light-truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009 model year.

Executive Order S-3-05 (June 1, 2005): The goal of this Executive Order is to reduce California's GHG emissions to 1) 2000 levels by 2010, 2) 1990 levels by 2020, and 3) 80 percent below 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as Executive Order S-3-05 while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions" in GHG s.

Executive Order S-01-07 (January 18, 2007): This order set forth the low-carbon fuel standard for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a Sustainable Communities Strategy (SCS) that integrates transportation, land use, and housing policies to achieve the emissions target for the region.

Local Regulations

At the local level, air quality is managed through land use and development planning practices, which are implemented in the project area through the general planning process. BAAQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws. It is also responsible for ensuring the NAAQS and CAAQS are met.

The proposed project would be subject to BAAQMD rules and regulations at the time of construction and may be subject to the following:

- Regulation 2, Rule 2 (New Source Review). This regulation contains requirements for Best Available Control Technology and emissions offsets.
- Regulation 2, Rule 5 (New Source Review of Toxic Air Contaminants [TACs]). This regulation outlines guidance for evaluating TAC emissions and their potential health risks.
- Regulation 6, Rule 1 (Particulate Matter). This regulation restricts emissions of PM darker than No. 1 on the Ringlemann chart to less than 3 minutes in any 1 hour.
- Regulation 7 (Odorous Substances). This regulation establishes general odor limitations on odorous substances and specific emissions limitations on certain odorous compounds.
- Regulation 8, Rule 3 (Architectural Coatings). This regulation limits the quantity of volatile organic compounds (VOCs) in architectural coatings.
- Regulation 9, Rule 6 (Nitrogen Oxide [NO_X] Emissions from Natural Gas-fired Boilers and Water Heaters). This regulation limits emissions of NO_X generated by natural gas–fired boilers.
- Regulation 9, Rule 8 (Stationary Internal Combustion Engines). This regulation limits emissions of NO_X and CO from stationary internal combustion engines of more than 50 horsepower.

- Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing). This regulation controls emissions of asbestos to the atmosphere during demolition, renovation, milling, and manufacturing and establishes appropriate waste disposal procedures.

In addition, BAAQMD identified CEQA thresholds of significance in its CEQA air quality guidelines (BAAQMD 2011). In March 2012, the Alameda County Superior Court ruled that BAAQMD needed to comply with CEQA prior to adopting its 2010 CEQA Guidelines, which included significance thresholds for criteria air pollutants and GHGs. The Superior Court did not determine whether the thresholds were valid on their merits but found that adoption of the thresholds was a project under CEQA. A court-ordered writ of mandate ordered BAAQMD to set aside the thresholds and cease dissemination of them until BAAQMD complied with CEQA. In May 2012, BAAQMD filed an appeal with the Court of Appeal, First Appellate District; the plaintiff filed a cross appeal shortly thereafter. In August 2013, the Court of Appeal reversed the trial court's decision and ruled that the adoption of guidelines and thresholds is not considered a project that is subject to CEQA review and that adoption of the significance thresholds was not arbitrary and capricious. The Court of Appeal's decision was then appealed to the California Supreme Court, which granted limited review. The matter is currently pending there. Although not used to determine impacts associated with the proposed project, BAAQMD's thresholds of significance, as indicated in their CEQA Guidelines, are summarized in Table 6 for informational purposes.

Table 6. BAAQMD Project-Level Air Quality Emissions Thresholds

Pollutant	Construction	Operations
Reactive organic gas (ROG)	54 lbs/day	54 lbs/day or 10 tons/year
NO_X	54 lbs/day	54 lbs/day or 10 tons/year
CO	—	Violation of CAAQS
PM10 (total)	—	—
PM10 (exhaust)	82 lbs/day	82 lbs/day or 15 tons/year
PM2.5 (exhaust)	54 lbs/day	54 lbs/day or 10 tons/year
PM10 /PM2.5 (fugitive dust)	Best management practices (BMPs)	—
TACs (project-level)	Increased cancer risk of 10 in 1 million; increased non-cancer risk greater than 1.0 (hazard index [HI]); PM2.5 increase greater than 0.3 microgram per cubic meter at receptors within 1,000 feet	Same as construction
TACs (cumulative)	Increased cancer risk of 100 in 1 million; increased non-cancer risk greater than 10.0. PM2.5 increase greater than 0.8 microgram per cubic meter at receptors within 1,000 feet	Same as construction
Odors	—	Five complaints per year, averaged over 3 years

Source: Bay Area Air Quality Management District, 2011a.

Existing Air Quality Conditions

Existing air quality conditions in the project area can be characterized from monitoring data collected in the region. The nearest monitoring station to the project area is Oakland-West, located at 1100 21st Street. The station, which is approximately 1.7 miles east of the project area, monitors ozone, CO, PM2.5, and NO_2. There are currently no stations in the county that collect data on PM10. Table 7 summarizes ozone, CO, PM2.5, and NO_2 pollutant levels at the Oakland-West station during the last 3 years with complete data available (2012–2014). Air quality concentrations are expressed in terms of parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). As shown in **Table 7**, the monitoring station experienced three violations of the national PM2.5 standard during this time period.

Table 7. Ambient Air Quality Monitoring Data for the Oakland-West Station

Pollutant Standards	2012	2013	2014
Ozone (O_3)			
Maximum 1-hour concentration	0.061	0.071	0.072
Maximum 8-hour concentration	0.049	0.060	0.059
Fourth-highest 8-hour concentration	0.046	0.045	0.051
Days state 1-hour standard exceeded (0.09 ppm)	0	0	0
Days state 8-hour standard exceeded (0.070 ppm)	0	0	0
Days national 8-hour standard exceeded (0.075 ppm)	0	0	0
Carbon Monoxide (CO)			
Maximum 1-hour concentration	2.4	3.2	3.0
Maximum 8-hour concentration	2.8	3.8	2.6
Days state 1-hour standard exceeded (20 ppm)	0	0	0
Days national 1-hour standard exceeded (35 ppm)	0	0	0
Days state 8-hour standard exceeded (9.0 ppm)	0	0	0
Days national 8-hour standard exceeded (9 ppm)	0	0	0
Particulate Matter (PM10)			
No data available			
Particulate Matter (PM2.5)			
Maximum state 24-hour concentration	29.2	42.7	38.8
Maximum national 24-hour concentration	12.4	42.7	38.8
Annual average concentration	—	12.7	9.5
Days national 24-hour standard exceeded (expected) (35 $\mu g/m^3$)	0	2	1
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration	53.2	63.9	56.0
Annual average concentration	15	16	16
Days state standard exceeded (0.18 ppm)	0	0	0
Days national standard exceeded (0.100 ppm)	0	0	0

Pollutant Standards	2012	2013	2014

Source: California Air Resources Board, 2015b; U.S. Environmental Protection Agency, 2015b.
Notes:
ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
— = insufficient data available to determine the value

Attainment Status

Local monitoring data (Table 7) are used to designate areas as nonattainment, maintenance, attainment, or unclassified under the NAAQS and CAAQS. The four designations are further defined as:

- **Nonattainment:** Assigned to areas where monitored pollutant concentrations consistently violate the standard in question.
- **Maintenance:** Assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard.
- **Attainment:** Assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.
- **Unclassified:** Assigned to areas with insufficient data for determining whether a pollutant is violating the standard in question.

Table 8 summarizes the attainment status of the project area with regard to the NAAQS and CAAQS.

Table 8. Federal and State Attainment Status of the Project Area (Alameda County)

Pollutant	NAAQS	CAAQS
8-hour ozone	Marginal Nonattainment	Nonattainment
CO	Maintenance (P)	Attainment
PM10	Attainment	Nonattainment
PM2.5	Nonattainment	Nonattainment

Sources: California Air Resources Board, 2014; U.S. Environmental Protection Agency, 2015a.
Notes:
(P) = designation applies to portion of the county where the proposed project is located

Sensitive Receptors

Sensitive receptors are typically defined as facilities with children, the elderly, people with illnesses, or others who are sensitive to the effects of air pollution. Examples of sensitive receptors include residences, hospitals, schools, parks, and places of worship.

The Park would be located in the city of Oakland, Alameda County, adjacent to I-880 and I-80, at the eastern touchdown of the Bay Bridge. The project area includes underutilized industrial land on the south side of I-80, extending from the San Francisco Bay shoreline on the west to the Caltrans maintenance facility near the Bay Bridge toll plaza on the east. The project area also includes the Radio Beach area on the north side of I-80 and land beneath and adjacent to I-880 and the I-880/I-80/I-580 interchange. Local air pollutants in the project area are emitted primarily by vehicular traffic traveling on the freeways (I-880, I-80), including truck traffic, as well as railroad and port-related operations.

The nearest existing recreational use is the trail from the eastern span of the Bay Bridge to Emeryville that crosses the north edge of the proposed Park. There is also limited informal recreational use of the Radio Beach area north of I-80. The proposed Park would attract new users to the passive and active recreational opportunities.

Other existing recreational uses include the bicycle/pedestrian pathway along Mandela Parkway and Raimondi Park on south side of 20th Street, between Wood Street and Campbell Street. The Mandela Parkway median includes informal seating areas within 100 feet of the intersection with West Grand Avenue. Raimondi Park is used primarily for active recreation, such as baseball and football. The closest residences are located on Peralta Street, about 0.9 mile southeast of the Bridge Yard portion of the project, between 12th Street and 14th Street. Additionally, some residences are located roughly 1 mile southeast of the Bridge Yard in the vicinity of 16th Street and Wood Street. Peralta Studios, a live/work space, is located about 1.2 miles southeast of the Bridge Yard at the corner of West Grand Avenue/Mandela Parkway. The nearest mixed-use (residential/commercial) land use is located about 1.25 miles east of the Bridge Yard area at 28th Street, between Mandela Parkway and Ettie Street. There are no schools, churches, or hospitals within 1,000 feet of the project area.

Operational Impact Assessment Methodology

The California Emissions Estimator Model (CalEEMod), version 2013.2.2, was used to estimate direct criteria pollutant and GHG emissions from motor vehicle trips and natural gas consumption as well as indirect GHG emissions from electricity, natural gas, and water consumption and waste generation associated with proposed facility use. Full-buildout (2030) indoor and outdoor water usage values were provided by T.Y. Lin and used to model project water usage conservatively after completion of Phase 1. Indoor water usage is conservatively assumed to be 400,000 gallons per year, and irrigation water usage is estimated to be 17,191,000 gallons per year after completion of Phase 1 construction (2017). Default values from CalEEMod for natural gas and electricity consumption, as well as waste generation, were used to model operational emissions for each sub-phase land use that includes those services. The default vehicle trip lengths and vehicle trip types from CalEEMod for the applicable land use for each sub-phase were also used for the analysis; project-specific values were not available.

Although default trip length and vehicle trip types were assumed in the project analysis, project-specific trip generation rates were used. These were based on the trip generation estimates in the

project's transportation impact analysis from the project traffic engineers, Fehr & Peers. In the *San Francisco–Oakland Bay Bridge Regional Bicycle & Pedestrian Connection: Gateway Park Report* (Fehr & Peers 2014), it is estimated that the Park would generate up to 5,490 local daily weekend trips and 5,150 local daily weekday trips at full buildout (2030), based on the projected 2 million annual visitors at buildout of the proposed project in 2030 (Fehr & Peers 2014). Because the project would be constructed in three phases, total trips at buildout in 2030 were apportioned equally amongst the three phases (one-third of the total 2030 full-buildout trips were attributed to Phase 1 after Phase 1 construction is completed, and two-thirds of the total full-buildout trips were attributed to Phase 2 after completion). For example, 1,830 weekend trips (5,490 multiplied by one-third) and 1,717 weekday trips (5,150 multiplied by one-third) were used for daily vehicle trips after Phase 1 of the project is complete (2017) (Lillie pers. comm.). The estimated number of daily vehicle trips to and from the Park is based on published trip rates from the Institute of Transportation Engineers (ITE), surveys of similar uses in the region, and visitor projections (Fehr & Peers 2014). The daily trip values mentioned above are based on 2 million annual visitors to the Park, assuming that 90 percent of the visitors arrive/depart by private vehicle, average vehicle occupancy is two people per vehicle on weekdays, and average vehicle occupancy is three people per vehicle on weekends.

With all Park areas developed, it is estimated that approximately 15 to 30 employees would be required, based on the assumptions that follow. There would be four to 10 employees at visitor-serving uses in the Key Point area, six to 13 employees at visitor-serving uses in the Port Playground area, and five to seven employees for other operational and maintenance needs elsewhere in the Park. Trips associated with staff and maintenance activities were included in the weekday and weekend trip generation values provided by the project traffic engineers (Fehr & Peers 2014).

Vegetation and land use changes associated with the project were also modeled with use of CalEEMod. An estimated 2,375 new trees are proposed to be planted on the project site over the three phases of construction, and 10.75 acres of grassland is assumed to be planted on the site as well, acting to sequester CO_2 and reduce the project's net GHG emissions. CalEEMod generates vegetation and land use change as total metric tons (MT) of carbon dioxide equivalent (CO_2e) sequestered over a 20-year active growth period. Therefore, total CO_2e sequestered by vegetation and land use change was divided by 20, resulting in units of MT CO_2e per year.

Construction Impact Assessment Methodology

Construction activity is a source of dust and exhaust emissions, which can have substantial temporary impacts on local air quality (i.e., exceeding state air quality standards for ozone, CO, PM10, and PM2.5). Such emissions would result from earthmoving and use of heavy equipment as well as land clearing, ground excavation, cut-and-fill operations, and roadway construction. Emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather. A portion of dust emissions for the project would be caused by construction traffic in temporary work areas.

CalEEMod was used to estimate construction emissions of reactive organic gas (ROG), NO_X, CO, PM10, PM2.5, and GHGs, based on the project-specific inputs regarding construction phases as well as the schedule, duration, equipment, demolition, and earthmoving volume associated with each phase. Construction data, including phases, schedule, construction equipment type and hours of operation per day, equipment horsepower, and imported fill volumes, were provided by the project's engineering consultant, T.Y. Lin International. Proposed fill volumes for each phase of construction were divided evenly amongst sub-phases that include grading activities.

Construction assumptions are provided in **Attachment 1**. CalEEMod inputs and outputs are provided in **Appendix E of the Draft EIR**. Construction equipment defaults, such as emissions factors, horsepower, and load factors, from CalEEMod were used for the analysis. The default vehicle trip lengths and the number of truck trips (i.e., for hauling) and worker trips from CalEEMod for the land uses of each sub-phase were also used for the analysis.

The excavation and fill estimates for project development are shown in **Table 9**.

Table 9. Estimated Excavation and Fill Material Required for Park Development

Phase	Excavated Material to Be Used as Fill On-site	Imported Fill Material	Off-Haul
1	11,000 cy	30,000 cy	0
2	41,000 cy	35,000 cy	0
3	15,000 cy	101,000 cy	0

cy = cubic yards
Note: See also Table 4 for volume of fill required for shoreline protection, which is included in the estimated totals shown in this table.

As described in **Table 9,** the Project would be developed in three phases over a 15-year period, although construction activities would occur over a 54-month period during seven years. For purposes of this analysis, it is assumed that Phase 1 would occur between June 2016 and February 2017, Phase 2 would occur between January 2018 and August 2019, and Phase 3 would occur between March 2028 and March 2030. **Attachment 1** includes the estimated construction duration and time frames for each phase and sub-phase of development.

The majority of construction activities would be limited to the hours between 8 a.m. and 6 p.m., Monday through Saturday. There would be no construction on Sundays or national holidays. Based on construction data provided by the project engineers, T.Y. Lin, it is anticipated that construction equipment would operate for a maximum of 8 hours per day. The actual construction activity data assumed in the analysis is presented in Attachment 1.

Environmental Consequences

Mixed Active/Passive Park Alternative

This section describes proposed air quality effects that could result from project implementation.

Impact AQ-1: Generate operations-related emissions of ozone precursors (ROG and NO_X), CO, PM10, and PM2.5

The project entails constructing a recreational park on 45 acres that surround the eastern touchdown of the Bay Bridge, including four parking lots with 755 spaces. Park users who use the parking lots could generate new vehicle trips to and from the parking lots.

Long-term project air quality impacts related to emissions would be limited to those associated with new vehicle trips to the Park. The project would not increase the capacity or traffic speed of the roadway system in the area. Long-term project operations would require the use of architectural coatings, consumer products, landscaping equipment, water for irrigation and sewage, and electricity for proposed lighting; solid waste would be generated as well. Therefore, the project would generate primarily indirect GHG emissions, with limited associated criteria pollutant emissions. **Table 10** summarizes the daily emissions from the project, using 1,830 daily weekend vehicle trips and 1,717 daily weekday vehicle trips after completion of Phase 1 (2017) and operational emissions from buildings and infrastructure associated with Phase 1. **Table 11** summarizes the daily emissions from the project, assuming 3,660 daily weekend vehicle trips and 3,434 daily weekday vehicle trips after completion of Phase 2 (2020) and operational emissions from buildings and infrastructure associated with Phases 1 and 2. **Table 12** summarizes the daily emissions from the project, assuming 5,490 daily weekend vehicle trips and 5,150 daily weekday vehicle trips at full buildout (2030) and operational emissions from buildings and infrastructure associated with Phases 1 through 3. **Table 13** summarizes the total daily emissions from the project at full buildout, including the buildings and infrastructure associated with all three phases.

As shown in Tables 10 through 12, building emissions account for the majority of operational ROG emissions, while mobile emissions account nearly all NOx, CO, PM10, and PM2.5 emissions for each phase. When building and mobile emissions are summed in Table 13, total emissions for Phase 1, Phase 2, and Phase 3/full buildout in 2030 are below BAAQMD thresholds for all criteria pollutants. No mitigation is required.

Table 10. Operational Criteria Pollutant Emissions after Phase 1 Completion (2017) (lbs/day)

Daily Emissions	ROG	NOx	CO	PM10	PM2.5
Building	8.8	< 0.1	< 0.1	< 0.1	< 0.1
Mobile	6.6	17.0	62.2	8.6	2.5
Total	**15.4**	**17.0**	**62.3**	**8.6**	**2.5**
BAAQMD Thresholds	*54*	*54*	*N/A*	*82*	*54*

Notes:
See Attachment 1 for operational assumptions.
See Appendix E of the Draft EIR for CalEEMod inputs and outputs.
Values may not add up because of rounding.

Table 11. Operational Criteria Pollutant Emissions after Phase 2 Completion (2020) (lbs/day)

Daily Emissions	ROG	NOx	CO	PM10	PM2.5
Building	24.5	0.3	0.3	< 0.1	< 0.1
Mobile	10.8	26.2	99.6	17.2	4.9
Total	**35.3**	**26.4**	**99.8**	**17.2**	**4.9**
BAAQMD Thresholds	*54*	*54*	*N/A*	*82*	*54*

Notes:
See Attachment 1 for operational assumptions.
See Appendix E of the Draft EIR for CalEEMod inputs and outputs.
Values may not add up because of rounding

Table 12. Operational Criteria Pollutant Emissions after Full Buildout/Phase 3 Completion (2030) (lbs/day)

Daily Emissions	ROG	NOx	CO	PM10	PM2.5
Building	31.9	0.5	0.5	< 0.1	< 0.1
Mobile	11.9	25.0	109.2	25.6	7.3
Total	**43.7**	**25.5**	**109.8**	**25.7**	**7.3**
BAAQMD Thresholds	*54*	*54*	*N/A*	*82*	*54*

Notes:
See Attachment 1 for operational assumptions.
See Appendix E of the Draft EIR for CalEEMod inputs and outputs.
Values may not add up because of rounding.

Table 13. Daily Operational Criteria Pollutant Emissions after Each Phase (lbs/day)

Daily Emissions	ROG	NOx	CO	PM10	PM2.5
Phase 1 (2017)	15.4	17.0	62.3	8.6	2.5
Phase 2 (2020)	35.3	26.4	99.8	17.2	4.9
Phase 3/Full Buildout (2030)	43.7	25.5	109.8	25.7	7.3
BAAQMD Thresholds	*54*	*54*	*N/A*	*82*	*54*

Notes:
See Attachment 1 for operational assumptions.
See Appendix E of the Draft EIR for CalEEMod inputs and outputs.

Impact AQ-2: Generate construction-related emissions of ozone precursors (ROG and NO_X), CO, PM10, and PM2.5

Construction activities associated with the project would generate short-term emissions of ROG, NO_x, CO, PM10, and PM2.5. Emissions would originate from on-road hauling trips, construction workers' commute trips, construction site fugitive dust, and off-road construction equipment. Construction-related emissions would vary substantially, depending on the level of activity, specific construction operations, and wind and precipitation conditions.

Table 14 summarizes the daily emissions from the project. Project construction is estimated to occur over a 15-year period (2016–2030), although construction activities would actually occur over seven years (2016–2019 and 2028–2030). Phase 1 (2016–2017), Phase 2 (2018–2019), and Phase 3 (2028–2030) emissions are summarized by year.

Table 14. Summary of Construction Criteria Pollutant Emissions (lbs/day)

				PM10			PM2.5		
Daily Emissions	ROG	NOx	CO	Dust	Exhaust	Total	Dust	Exhaust	Total
Phase 1									
2016	29.4	334.5	196.2	23.5	14.7	36.0	12.1	13.6	23.7
2017	11.2	90.1	52.3	0.3	3.7	4.0	0.1	3.5	3.6
Phase 2									
2018	42.0	456.0	267.7	51.6	19.4	71.0	26.1	18.0	44.1
2019	16.9	151.4	110.8	0.7	6.4	7.1	0.2	6.0	6.2
Phase 3									
2028	25.3	213.2	213.8	42.1	8.8	50.9	21.7	8.1	29.8
2029	21.6	65.0	87.7	2.4	2.6	5.0	0.6	2.4	3.1
2030	0.0	0.0	0.4	0.2	0.0	0.2	0.0	0.0	0.0
BAAQMD Thresholds	*54*	*54*	—	*BMPs*	*82*	—	*BMPs*	*54*	—

Results in underline exceed the BAAQMD thresholds.
Notes:
BMPs = best management practices.
See Attachment 1 for construction assumptions.
See Appendix E of the Draft EIR for CalEEMod inputs and outputs.

The BAAQMD air quality guidelines (2011) establish thresholds of significance for criteria pollutants, TACs, and odors. Table 14 indicates that daily emissions would exceed BAAQMD's NO_X threshold of 54 pounds per day for all years of construction for Phase 1 (2016 and 2017) and Phase 2 (2018 and 2019) and two years of construction for Phase 3 (2028 and 2029). BAAQMD recommends that construction contractors implement all basic construction mitigation measures listed in the CEQA air quality guidelines to reduce construction emissions from dust and diesel exhaust. These measures are outlined in Mitigation Measure AQ-1. In addition, BAAQMD also recommends additional construction mitigation measures to help reduce emissions in excess of its construction thresholds. These measures are outlined in Mitigation Measures AQ-2 and AQ-3. BAAQMD considers fugitive dust impacts to be less than significant through the application of best

management practices (BMPs). BAAQMD's fugitive dust BMPs are outlined in Mitigation Measure AQ-1.

Impact AQ-3: Generate combined operations- and construction-related emissions of ozone precursors (ROG and NO_X), CO, PM10, and PM2.5

Because of the phased construction schedule of the project, construction activities would be occurring while completed phases of the Park would be operating. Construction and operational criteria pollutant emissions would therefore overlap during years in which buildings and infrastructure that were built as part of the project are operational and construction activities are occurring.

Table 15 presents total (i.e., construction plus operational) criteria pollutant emissions for each year in which there is overlap between construction and operational emissions.

Table 15. Summary of Total Combined Construction and Operational Criteria Pollutant Emissions by Year (lbs/day)

				PM10			PM2.5		
Daily Emissions	ROG	NO_x	CO	Dust	Exhaust	Total	Dust	Exhaust	Total
Year 2018[1]									
Construction	42.0	456.0	267.7	51.6	19.4	71.0	26.1	18.0	44.1
Operational[2]	15.4	17.0	62.3	8.4	0.2	8.6	2.3	0.2	2.5
Total	**57.4**	**473.0**	**330.0**	**60.0**	**19.6**	**79.6**	**28.4**	**18.2**	**46.6**
Year 2019									
Construction	16.9	151.4	110.8	0.7	6.4	7.1	0.2	6.0	6.2
Operational[2]	15.4	17.0	62.3	8.4	0.2	8.6	2.3	0.2	2.5
Total	**32.3**	**168.4**	**173.1**	**9.1**	**6.6**	**15.7**	**2.5**	**6.2**	**8.7**
Year 2028									
Construction	25.3	213.2	213.8	42.1	8.8	50.9	21.7	8.1	29.8
Operational[3]	35.3	26.4	99.8	16.8	0.4	17.2	4.5	0.4	4.9
Total	**60.6**	**239.6**	**313.6**	**58.9**	**9.2**	**68.1**	**26.2**	**8.5**	**34.7**
Year 2029									
Construction	21.6	65.0	87.7	2.4	2.6	5.0	0.6	2.4	3.1
Operational[3]	35.3	26.4	99.8	16.8	0.4	17.2	4.5	0.4	4.9
Total	**56.9**	**91.4**	**187.5**	**19.2**	**3.0**	**22.2**	**5.1**	**2.8**	**8.0**
Year 2030									
Construction	0.0	0.0	0.4	0.2	0.0	0.2	0.0	0.0	0.0
Operational[4]	43.7	25.5	109.8	25.0	0.6	25.7	6.7	0.6	7.3
Total	**43.7**	**25.5**	**110.2**	**25.2**	**0.6**	**25.9**	**6.7**	**0.6**	**7.3**
BAAQMD Thresholds	*54*	*54*	—	*BMPs*	*82*	—	*BMPs*	*54*	—

				PM10			PM2.5		
Daily Emissions	ROG	NO_x	CO	Dust	Exhaust	Total	Dust	Exhaust	Total

Results in underline exceed the BAAQMD thresholds.
Notes:
BMPs = best management practices.
See Attachment 1 for construction assumptions.
See Appendix E of the Draft EIR for CalEEMod inputs and outputs.
[1] Years 2016–2017 are not included in this table because there are no operational emissions for these years; hence, no overlap in construction and operational emissions.
[2] Assumed Phase 1 (2017) operational emissions from Table 13.
[3] Assumed Phase 2 (2020) operational emissions from Table 13.
[4] Assumed Phase 3 (2030) operational emissions from Table 13.

Table 15 indicates that total daily overlap emissions would exceed BAAQMD's ROG threshold of 54 pounds per day in 2018, 2028, and 2029. BAAQMD's NO_X threshold of 54 pound per day would be exceeded in 2018, 2019, 2028, and 2029 in terms of total overlapping emissions.

Impact AQ-4: Expose receptors to naturally occurring asbestos during construction

Depending on a project's size and geographic location, BAAQMD may require mitigation to address potential impacts from naturally occurring asbestos (NOA). BAAQMD enforces ARB's applicable air toxic control measures (ATCMs), which require operations that are engaged in road construction and maintenance, grading, and quarrying and surface mining activities in areas where NOA is likely to be found to employ the best available dust mitigation measures to reduce and control dust emissions.

Projects in areas that are known to contain NOA or have the potential to disturb asbestos (from soil or building material) are required to prepare and submit applicable notification forms and comply with all the requirements of ARB's ATCM. For projects that do not involve earth-disturbing activity in areas that are known to contain NOA or are not located in an NOA area, it can be assumed that the projects would not have the potential to expose people to airborne asbestos particles.

The project is not located in an area that is known to contain NOA. Accordingly, the project is not required to submit NOA notification forms but must employ the best available dust mitigation measures to reduce and control dust emissions (as outlined in Mitigation Measure AQ-1).

Impact AQ-5: Generation of greenhouse gas emissions

Operational Emissions

Operational GHG emissions associated with motor vehicle trips and natural gas consumption as well as indirect GHG emissions from electricity, natural gas, and water consumption and waste generation were estimated with CalEEMod. These operational emissions would be partially offset by emissions reductions due to the proposed tree and vegetation plantings associated with the project.

Table 16 presents a summary of GHG emissions associated with project operations.

Table 16. Yearly Operational GHG Emissions per Phase (MT/yr)

Yearly Emissions	CO_2	CH_4	N_2O	CO_2e
Phase 1 (2017)	1,743	< 1	< 1	1,745
Phase 2 (2020)	3,744	<1	< 1	3,746
Phase 3 (2030)	4,704	2	< 1	4,745
Tree + Vegetation	-108	0	0	-108
Total (Full Buildout)	4,637	2	< 1	4,637
BAAQMD Stationary Source Threshold				*10,000*
BAAQMD Non-Stationary Land Use Source Threshold				*1,100*

Notes:
See Attachment 1 for operation assumptions.
See Appendix E of the Draft EIR for CalEEMod inputs and outputs.
Values may not add up because of rounding.
CH_4 = methane; N_2O = nitrous oxide.

Operational emissions would total 4,637 MT CO_2e per year at full buildout, which would equal yearly CO_2e emissions from 987 passenger vehicles, based on the assumption that each vehicle emits 4.7 MT CO_2e per year (EPA 2014). Currently, there are no federal or state standards for GHG emissions that would be applicable to this project. However, BAAQMD's stationary and non-stationary land use CEQA thresholds of significance, as indicated in its CEQA air quality guidelines, are presented in Table 16 for informational purposes and to provide context regarding GHG emissions associated with project operations.

Construction Emissions

GHG associated with construction activities are presented in Table 17.

Table 17. Yearly Construction-related GHG Emissions (MT/yr)

Yearly Emissions	CO_2e
Phase 1	
2016	1,746
2017	135
Phase 2	
2018	3,279
2019	349
Phase 3	
2028	2,162
2029	813
2030	<1
Total	**8,485**

Notes:
See Attachment 1 for construction assumptions.
See Appendix E of the Draft EIR for CalEEMod inputs and outputs.
Values may not add up because of rounding.

Total construction-related GHG emissions for the entire project would equal 8,485 MT CO_2e, which corresponds to CO_2e emissions from 1,806 passenger vehicles in one year, assuming that each vehicle emits 4.7 MT CO_2e per year (EPA 2014). As indicated above, there are no federal or state standards for GHG emissions that would be applicable to the project. In addition, BAAQMD has not established CEQA thresholds of significance for construction activities. However, BAAQMD recommends that BMPs be incorporated into construction practices to reduce GHG emissions during construction, as feasible and applicable. BAAQMD's GHG-related BMPs are outlined in Mitigation Measure AQ-5.

Passive Park Alternative

As described above, the Passive Park Alternative would include no active recreation areas and minimal parking improvements. Construction-related emissions can be assumed to be lower than they would be under the proposed project because less infrastructure is planned for the Passive Park Alternative, resulting in fewer construction activities for this alternative compared with the Mixed Active/Passive Park Alternative. Also, operational emissions produced by this alternative can be assumed to be lower because of a reduction in both area-source emissions from fewer buildings and mobile-source emissions from a presumed decrease in visitors to the Park area.

Active Park Alternative

The Active Park Alternative would include the same general improvements as the proposed project; therefore, construction emissions would be mostly similar between the two. One main difference between the Active Park Alternative and Mixed Active/Passive Park Alternative is the larger number of parking spaces associated with the Active Park Alternative, which could lead to minor increases in construction-related emissions between the Active Park Alternative and Mixed Active/Passive Park Alternative because of the increased number of parking spaces that would be constructed. It was conservatively assumed that mobile-source emissions would not differ relative to the Mixed Active/Passive Park Alternative, however, because the modeling assumptions for the Mixed Active/Passive Park Alternative conservatively assumed that 2 million visitors would visit the Park annually. The maximum number of annual visitors projected to visit the Park under several scenarios, including a range of passive to active uses, was 2 million (Fehr & Peers 2014), and the maximum number of trips was conservatively assigned to the Mixed Active/Passive Park Alternative to provide a maximal estimate of impacts related to the Mixed Active/Passive Park Alternative. Operational emissions associated with the Active Park Alternative would, therefore, be similar to the proposed project's operational emissions.

Avoidance, Minimization, and Mitigation Measures

Most of the construction impacts on air quality are short term in duration and, therefore, would not result in long-term adverse conditions. Implementation of the following mitigation measures would reduce any air quality impacts resulting from construction activities.

Mitigation Measure AQ-1: Implement BAAQMD Basic Control Measures to Control Construction-Related Dust Emissions

In accordance with BAAQMD's current air quality guidelines (2011), when practical, the project applicant will implement the following BAAQMD-recommended control measures to reduce particulate matter emissions from construction activities:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site will be covered.
- All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads will be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used.
- A publicly visible sign will be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action

within 48 hours. The air district's phone number will also be visible to ensure compliance with applicable regulations.

Mitigation Measure AQ-2: Implement BAAQMD Basic Control Measures to Reduce Exhaust Emissions during Construction

The project applicant will implement, to the extent feasible, the following measures to reduce exhaust emissions (NO_X and PM10) from construction equipment. These mitigation measures are based on measures proposed in the BAAQMD air quality guidelines (2011).

- Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure—13 California Code of Regulations [CCR] 2485). Clear signage will be provided for construction workers at all access points.
- All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified visible emissions evaluator.

Mitigation Measure AQ-3: Implement BAAQMD Additional Control Measures to Control Construction-Related Dust Emissions

In accordance with the BAAQMD's current air quality guidelines (2011), when practical, the project applicant will implement the following additional BAAQMD control measures to reduce particulate matter emissions from construction activities.

- All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture at 12 percent. Moisture content can be verified by lab samples or moisture probe.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than 1 percent.

Mitigation Measure AQ-4: Implement BAAQMD Additional Control Measures to Reduce Exhaust Emissions during Construction

The project applicant will implement, to the extent feasible, the following additional measures to reduce exhaust emissions (ROG, NO_X, and PM10) from construction equipment as well as architectural coating off gassing. These mitigation measures are based on measures proposed in the BAAQMD air quality guidelines (2011).

- Minimize the idling time of diesel-powered construction equipment to 2 minutes.
- Develop a plan that demonstrates that off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) will achieve a project-wide fleet-average 20 percent NO_X reduction and 45 percent PM reduction compared to the most-recent ARB fleet average. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices (such as particulate filters), and/or other options as such become available.
- Use low-VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
- Require all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of ROG, NO_X, and PM.
- Require all contractors use equipment that meets ARB's most recent certification standard for off-road heavy-duty diesel engines.

Mitigation Measure AQ-5: Implement BAAQMD's Best Management Practices for Construction GHG Emissions

Require all construction contractors to implement the following BAAQMD-recommended BMPs to reduce GHG emissions, as applicable.

- Use alternative fuel (e.g., biodiesel, electric) construction vehicles/equipment in at least 15 percent of the fleet.
- Use at least 10 percent local building materials.
- Recycle at least 50 percent of construction waste or demolition materials.

References Cited

Printed References

Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA.

California Air Resources Board. 2014. *Area Designations Maps/ State and National*. Last revised: August 22, 2014. Available: http://www.arb.ca.gov/desig/adm/adm.htm. Accessed: September 23, 2015.

California Air Resources Board. 2015a. *Ambient Air Quality Standards*. Last revised: October 1, 2015. Available: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed: October 23, 2015.

California Air Resources Board. 2015b. *iADAM Air Quality Data Statistics*. Available: http://www.arb.ca.gov/adam/index.html. Accessed: September 23, 2015.

Fehr & Peers. 2014. *San Francisco-Oakland Bay Bridge Regional Bicycle & Pedestrian Connection: Gateway Park Transportation Analysis Report*. October 2015.

U.S. Environmental Protection Agency. 2014. *Greenhouse Gas Emissions from a Typical Passenger Vehicle*. Last revised: May 2014. Available: http://www3.epa.gov/otaq/climate/documents/420f14040a.pdf. Accessed: October 29, 2015.

U.S. Environmental Protection Agency. 2015a. *The Green Book Nonattainment Areas for Criteria Pollutants*. Last revised: January 30, 2015. Available: http://www3.epa.gov/airquality/greenbk/. Accessed: September 24, 2015.

U.S. Environmental Protection Agency. 2015b. *Monitor Values Report*. Last revised: September 11, 2015. Available: http://www.epa.gov/airdata/ad_rep_mon.html. Accessed: September 23, 2015.

Personal Communications

Lillie, Eva. Professional engineer. T.Y. Lin International. October 20, 2015—email to Darrin Trageser, ICF International, Sacramento, CA, regarding vehicle trips generated by Gateway Park.

Attachment 1

Gateway Park - Phase 1 Bridge Yard Construction Duration Estimate

	2016							2017											
Phase	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1A Bridge Yard Arrival Plaza																			
Demolition																			
Site preparation																			
Grading																			
Asphalt Paving																			
1B Historic Display Plaza																			
Demolition																			
Site Grading																			
Excavation																			
Building construction																			
Asphalt Paving																			
Architectural Coatings																			
1C Outdoor Yard Event Space																			
Demolition																			
Site Grading																			
Excavation																			
Asphalt Paving																			
1D Bridge Yard Building Improvements																			
1E Indoor/Outdoor Auditorium																			
Demolition																			
Site Grading																			
Excavation																			
Asphalt Paving																			
Parking Area ~~B~~ A (west of Bridge Yard bldg)																			
Demolition																			
Site Grading																			
Excavation																			
Asphalt Paving																			

All construction 8am to 6pm, Monday through Saturday

Gateway Park - Phase 2 Key Point Construction Duration Estimate

Phase	2018 J	F	M	A	M	J	J	A	S	O	N	D	2019 J	F	M	A	M	J	J	A	S	O	N	D
2A Building Renovation (2 existing)																								
Demolition																								
Site preparation																								
Grading																								
Building construction																								
Asphalt Paving/Concrete Paths																								
Architectural Coatings																								
Landscaping																								
2B Path on Structure (720' long, 19' wide sf)																								
Demolition																								
Site Grading																								
Q1. Excavation																								
Building construction																								
Asphalt Paving/Concrete Paths																								
Landscaping																								
2C Pier (300' long, 30'wide)																								
Demolition																								
Site Grading																								
Excavation																								
Building construction																								
Asphalt Paving/Concrete Paths																								
Landscaping																								
Windbreak/Tree Buffer																								
Demolition																								
Site Grading																								
Excavation																								
Asphalt Paving/Concrete Paths																								
Landscaping																								
Parking Area ~~C~~ B (in Windbreak)																								
Demolition																								
Site Grading																								
Excavation																								
Asphalt Paving/Concrete Paths																								
Landscaping																								
Shoreline Protection (west end at Key Point only)																								
Demolition																								
Site Grading																								
Excavation																								
Asphalt Paving/Concrete Paths																								
Shoreline Improvements																								
Landscaping																								

All construction 8am to 6pm, Monday through Saturday

Q2. New Building (1) about 1250SF

Demolition																								
Site Grading																								
Excavation																								
Install Shoreline protection and paths																								
Landscaping																								

Gateway Park - Phase 3 Port Playground and Radio Beach Construction Duration Estimate

Phase	2028												2029												2030											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
3A Visitor Center (7,673 sf)																																				
Demolition																																				
Site preparation																																				
Grading																																				
Building construction																																				
Asphalt Paving																																				
Architectural Coatings																																				
Landscaping																																				
3B Play Areas: Main Playground (24,741 sf), Climbing Wall Area (26,506 sf), Skate Park (19,073 sf)																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Path and Site improvements construction																																				
Asphalt Paving																																				
Architectural Coatings																																				
Landscaping																																				
3C Kayak Beach (31,240 sf beach area with 200' long by 19'wide path from Visitor Center																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Path and site improvements construction																																				
Landscaping																																				
3D Boardwalk																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Boardwalk construction																																				
Landscaping																																				
3E Meadow View Point (76,864 sf)																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Path and Wall construction																																				
Landscaping																																				
3F Meadow and Bluff Walk (5.3 acres)																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Path construction																																				
Landscaping																																				
3G View Rides (unknown)																																				
4A Path to Radio Beach (4,000' long and 15' wide)																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Path construction																																				
Asphalt Paving																																				
4B/C Restoration/Fencing																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Fencing construction																																				
Asphalt Paving																																				
Parking Area ~~E~~ C Radio Beach informal parking																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Asphalt Paving																																				

Architectural Coatings
Parking Area ~~F~~ D Wood Street Parking Lot Expansion
Demolition
Site Grading
Excavation
Asphalt Paving
Landscaping
Shoreline protection (southern shoreline)
Demolition
Site Grading
Excavation
Install Shoreline protection and paths
Landscaping
Q3. Shoreline protection (Kayak Beach)
Demolition
Site Grading
Excavation
Install Shoreline protection and paths
Landscaping
Q3. Shoreline protection (Boardwalk)
Demolition
Site Grading
Excavation
Install Shoreline protection and paths
Landscaping
Q3. Shoreline protection (Play Areas)
Demolition
Site Grading
Excavation
Install Shoreline protection and paths
Landscaping
Q4. Landscaping beneath the freeway
Demolition
Site Grading
Excavation
Install Shoreline protection and paths
Landscaping

All construction 8am to 6pm, Monday through Saturday

Phase	Sub-Phase	Fill Imported (cy/day)	Fill Exported (cy/day)	Square Feet Demolished	Acres Graded	Building Square Footage	Square Feet Paved	Workers per Day	Haul Trucks per day	Trees Planted/ Landscaping	Water Consumed (gallons)
Phase 1 Bridge Yard		30,000 total	0 total								
	1A Bridge Yard Arrival Plaza										
	Demolition			pavement removal 50,100 sf							
	Site preparation			clearing 50,100 sf							
	Grading				minor grading 50,100 sf						
	Asphalt Paving						yes, 95% of area 47,595 sf				
	Landscaping									375 trees (35 of which are large oak trees)	
	1B Historic Display Plaza										
	Demolition			pavement removal 12,880 sf							
	Site Grading				minor grading 12,880 sf						
	Excavation				none						
	Building construction					none					
	Asphalt Paving						none				
	Pervious Paving						10% of area 1,288 sf				
	Architectural Coatings										
	1C Outdoor Yard Event Space										
	Demolition			pavement removal 281,404 sf							
	Site Grading				minor; fill for mound 5 ft average						
	Excavation				no major						
	Asphalt Paving						none				
	Landscaping									minor	
	1D Bridge Yard Building Improvements					24,300					
	1E Indoor/Outdoor Auditorium										
	Demolition			pavement removal 3,400 sf							
	Site Grading				minor grading 3,400 sf						
	Excavation				none						
	Asphalt Paving					3,400 sf					
	Parking Area A										
	Demolition			pavement removal 70,300 sf							
	Site Grading				minor grading 70,300 sf						
	Excavation				none						
	Asphalt Paving						70,300 sf				
Phase 2 Key Point	**2A Building Renovation**	35,000 total	0 total								
	Demolition			none							
	Site preparation				none						
	Grading				none						
	Building construction					5450					
	Asphalt Paving/Concrete Paths						none				
	Architectural Coatings										
	Landscaping									minor	
	2B Path on Structure										

Demolition			none	minor grading (10 footings, 6 ft diameter circles)						
Site Grading										
Excavation				minor excavation (3,000 - 5,000 cy)	none					
Building construction						none				
Asphalt Paving/Concrete Paths										
Landscaping									150 trees	
2C Pier (300' long, 30'wide)										
Demolition			none							
Site Grading				none						
Excavation				60-80 ft deep for 5 piles						
Building construction					11000					
Asphalt Paving/Concrete Paths						none				
Landscaping									none	
Windbreak/Tree Buffer										
Demolition			removal of misc pavement/ gravel/ junk (5% of area = 31,173 sf)							
Site Grading				minor						
Excavation				none						
Asphalt Paving/Concrete Paths						none				
Landscaping									1,500 trees	
Parking Area B (in Windbreak)										
Demolition			Accounted for in Windbreak above							
Site Grading				Accounted for in Windbreak above						
Excavation				none						
Asphalt Paving/Concrete Paths						Pervious surface 60,400 sf				
Landscaping									Accounted for in Windbreak above	
Shoreline Protection (west end at Key Point)										
Demolition			none							
Site Grading	4,100 cy fill			0.23 acres						
Excavation				none						
Asphalt Paving/Concrete Paths						none				
Shoreline Improvements						installing rock/ rip-rap/ retaining wall				
Landscaping									none	
Phase 3 Port Playground and Radio Beach										
3A Visitor Center	101,000 total	0 total								
Demolition			none							
Site preparation			clearing rock and debris (clean up) 6,500 sf							
Grading				minor 6,500 sf						
Building construction					6,475					
Asphalt Paving						none				
Architectural Coatings										
Landscaping									minor	
3B Play Areas										
Demolition			none							
Site Grading				clearing rock and debris (clean up) and minor grading 70,310 sf						

Excavation				none						
Path and Site improvements construction					Main = 24,740 sf Climbing = 26,500 Skate = 19,070					
Asphalt Paving						pervious; no asphalt				
Architectural Coatings										
Landscaping									minor	
3C Kayak Beach										
Demolition			none							
Site Grading				minor; add sand 31,240 sf						
Excavation				none						
Path and site improvements construction					minor; ramps	none				
Landscaping									none	
3D Boardwalk										
Demolition			none							
Site Grading				minor 10,990 sf						
Excavation				none						
Boardwalk construction					boardwalk	cement; no asphalt				
Landscaping									minimal	
3E Meadow View Point										
Demolition			none							
Site Grading				adding fill; area of treatment 76,860 sf						
Excavation				none						
Path and Wall construction					retaining wall 550 ft long x 0-10 ft high	pervious; no asphalt				
Landscaping									grasses/native plants also 950 trees on Boardwalk, Meadow View Point, Meadow and Bluff Walk	
3F Meadow and Bluff Walk										
Demolition			none							
Site Grading				minor smoothing 5.3 acres						
Excavation				none						
Path construction					path construction	pervious; no asphalt				
Landscaping									grasses/native plants	
3G View Rides				would need minor excavation for footings						
4A Path to Radio Beach										
Demolition			none							
Site Grading				minor smoothing 4,000 - 4,200 ft long (unsure of sf)						
Excavation				9 pilings for elevated portion (10,000 cy excavation)						
Path construction						concrete for rip-rap portion; remainder will be boardwalk				
Asphalt Paving						none				
4B/C Restoration/Fencing										
Demolition			none							

Site Grading				minor grading to remove non-natives and replace with native plants 1 acre of grading					4 acres of restoration	
Excavation				none						
Fencing construction					1,700 lf					
Asphalt Paving						none				
Parking Area C										
Demolition			none							
Site Grading				minor grading to smooth and add oyster shells 500 sf						
Excavation				none	none					
Asphalt Paving						pervious; no asphalt 500 sf				
Architectural Coatings										
Parking Area D										
Demolition			none							
Site Grading				minor 48,000 sf						
Excavation				none						
Asphalt Paving						48,000 sf				
Landscaping										minor
Shoreline protection (southern shoreline)										
Demolition			none							
Site Grading				minor smoothing						
Excavation				none						
Install Shoreline protection and paths					see figure showing shoreline types					
Landscaping										none
Q5. Shoreline protection (Kayak Beach)										
Demolition			none							
Site Grading				minor smoothing						
Excavation				none						
Install Shoreline protection and paths					see figure showing shoreline types					
Landscaping										none
Q5. Shoreline protection (Boardwalk)										
Demolition			none							
Site Grading				minor smoothing						
Excavation				none						
Install Shoreline protection and paths					see figure showing shoreline types					
Landscaping										none
Q5. Shoreline protection (Play Areas)										
Demolition			none							
Site Grading				minor smoothing						
Excavation				none						
Install Shoreline protection and paths					see figure showing shoreline types					
Landscaping										none

Master List of Construction Equipment

Phase	Type	#/Day	HP	Hr/Day
Q6. Demolition	Excavators	2	120	8
	Bulldozers	2	325	8
	Concrete/industrial saws	1	250	6
	Tractors/Loaders/Backhoes	3	300	8
Site preparation	Graders	1	250	8
	Tractors/Loaders/Backhoes	3	350	8
	Bulldozers	3	350	4
	Scraper	1	350	4
Q6. Grading	Bulldozers	1	250	8
	Graders	1	350	8
	Tractors/Loaders/Backhoes	3	300	8
	Excavators	1	350	4
	Scrapers	1	350	4
Building construction	Cranes	1	150	8
	Forklifts	1	150	6
	Tractors/Loaders/Backhoes	1	300	8
	Welders	1	150	6
	Generator sets	1	400	6
Architectural coating	Air Compressor	1	150	8
Paving	Pavers	1	150	8
	Cement/Mortar mixers	1	150	6
	Rollers	2	300	8
	Tractors/Loaders/Backhoes	1	150	6
	Paving equipment	1	400	6
Q6. Excavation	Excavators	1	120	6
Q6. Landscaping	Backhoe	2	120	4
Q6. Shoreline Improvements (west end at Key Point)	Assuming this is covered under site prep/construction/paving			
Q6. Path and Site improvements construction (2B play areas & 2C Kayak Beach)	Assuming this is covered under site paving			
Q6. Boardwalk construction (2D Boardwalk)	Assuming this is covered under site paving/building construction			

Phase	Type	#/Day	HP	Hr/Day
1A Bridge Yard Arrival Plaza				
Demolition	See master list			
Site preparation	See master list			
Grading	See master list			
Asphalt Paving	See master list			
1B Historic Display Plaza				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Building construction	See master list			
Asphalt Paving	See master list			
Architectural Coatings	See master list			
1C Outdoor Yard Event Space				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving	See master list			
1D Bridge Yard Building Improvements	See master list ("building construction")			
1E Indoor/Outdoor Auditorium				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving	See master list			
Parking Area A (west of Bridge Yard bldg)				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving	See master list			
3A Building Renovation				
Demolition	See master list			
Site preparation	See master list			
Grading	See master list			
Building construction	See master list			
Asphalt Paving/Concrete Paths	See master list			
Architectural Coatings	See master list			
Landscaping	See master list			
3B Path on Structure				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Building construction	See master list			
Asphalt Paving/Concrete Paths	See master list			
Landscaping	See master list			
3C Pier (300' long, 30'wide)				
Demolition	See master list			

Q6. Path and Wall construction (2E Meadow View Point)	Assuming this is covered under site paving			
Q6. Path construction (2F, 4A)	Assuming this is covered under site paving			
Q6. Fencing construction (4B, 4C)	Assuming this is covered under site paving			
Q6. Install Shoreline protection and paths (Shoreline protection/southern shoreline)	Assuming this is covered under site prep/paving			

Site Grading	See master list			
Excavation	See master list			
Building construction	See master list			
Asphalt Paving/Concrete Paths	See master list			
Landscaping	See master list			
Windbreak/Tree Buffer				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving/Concrete Paths	See master list			
Landscaping	See master list			
Parking Area B (in Windbreak)				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving/Concrete Paths	See master list			
Landscaping	See master list			
Shoreline Protection (west end at Key Point only)				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving/Concrete Paths	See master list			
Shoreline Improvements				
Landscaping	See master list			
2A Visitor Center				
Demolition	See master list			
Site preparation	See master list			
Grading	See master list			
Building construction	See master list			
Asphalt Paving	See master list			
Architectural Coatings	See master list			
Landscaping	See master list			
2B Play Areas				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Path and Site improvements construction				
Asphalt Paving	See master list			
Architectural Coatings	See master list			
Landscaping	See master list			
2C Kayak Beach				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Path and site improvements construction				
Landscaping	See master list			
2D Boardwalk				
Demolition	See master list			

Site Grading	See master list			
Excavation	See master list			
Boardwalk construction				
Landscaping	See master list			
2E Meadow View Point				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Path and Wall construction				
Landscaping	See master list			
2F Meadow and Bluff Walk				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Path construction				
Landscaping	See master list			
2G View Rides				
4A Path to Radio Beach				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Path construction				
Asphalt Paving	See master list			
4B/C Restoration/Fencing				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Fencing construction				
Asphalt Paving	See master list			
Parking Area C Radio Beach informal parking				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving	See master list			
Architectural Coatings	See master list			
Parking Area D Wood Street Parking Lot Expansion				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving	See master list			
Landscaping	See master list			
Shoreline protection (southern shoreline)				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Install Shoreline protection and paths				
Landscaping	See master list			

Appendix E

Construction and Operations Assumptions

Gateway Park - Phase 2 Key Point Construction Duration Estimate

Phase	2018 J	F	M	A	M	J	J	A	S	O	N	D	2019 J	F	M	A	M	J	J	A	S	O	N	D
2A Building Renovation (2 existing)																								
Demolition																								
Site preparation																								
Grading																								
Building construction																								
Asphalt Paving/Concrete Paths																								
Architectural Coatings																								
Landscaping																								
2B Path on Structure (720' long, 19' wide sf)																								
Demolition																								
Site Grading																								
Q1. Excavation																								
Building construction																								
Asphalt Paving/Concrete Paths																								
Landscaping																								
2C Pier (300' long, 30'wide)																								
Demolition																								
Site Grading																								
Excavation																								
Building construction																								
Asphalt Paving/Concrete Paths																								
Landscaping																								
Windbreak/Tree Buffer																								
Demolition																								
Site Grading																								
Excavation																								
Asphalt Paving/Concrete Paths																								
Landscaping																								
Parking Area ~~C~~ B (in Windbreak)																								
Demolition																								
Site Grading																								
Excavation																								
Asphalt Paving/Concrete Paths																								
Landscaping																								
Shoreline Protection (west end at Key Point only)																								
Demolition																								
Site Grading																								
Excavation																								
Asphalt Paving/Concrete Paths																								
Shoreline Improvements																								
Landscaping																								

All construction 8am to 6pm, Monday through Saturday

Q2. New Building (1) about 1250SF

Demolition																								
Site Grading																								
Excavation																								
Install Shoreline protection and paths																								
Landscaping																								

Gateway Park - Phase 3 Port Playground and Radio Beach Construction Duration Estimate

Phase	2028												2029												2030											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
3A Visitor Center (7,673 sf)																																				
Demolition																																				
Site preparation																																				
Grading																																				
Building construction																																				
Asphalt Paving																																				
Architectural Coatings																																				
Landscaping																																				
3B Play Areas: Main Playground (24,741 sf), Climbing Wall Area (26,506 sf), Skate Park (19,073 sf)																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Path and Site improvements construction																																				
Asphalt Paving																																				
Architectural Coatings																																				
Landscaping																																				
3C Kayak Beach (31,240 sf beach area with 200' long by 19'wide path from Visitor Center																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Path and site improvements construction																																				
Landscaping																																				
3D Boardwalk																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Boardwalk construction																																				
Landscaping																																				
3E Meadow View Point (76,864 sf)																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Path and Wall construction																																				
Landscaping																																				
3F Meadow and Bluff Walk (5.3 acres)																																				
Demolition																																				
Site Grading																																				
Excavation																																				
Path construction																																				
Landscaping																																				
3G View Rides (unknown)																																				

4A Path to Radio Beach (4,000' long and 15' wide)
Demolition
Site Grading
Excavation
Path construction
Asphalt Paving
4B/C Restoration/Fencing
Demolition
Site Grading
Excavation
Fencing construction
Asphalt Paving
Parking Area ~~E~~ C Radio Beach informal parking
Demolition
Site Grading
Excavation
Asphalt Paving
Architectural Coatings
Parking Area ~~F~~ D Wood Street Parking Lot Expansion
Demolition
Site Grading
Excavation
Asphalt Paving
Landscaping
Shoreline protection (southern shoreline)
Demolition
Site Grading
Excavation
Install Shoreline protection and paths
Landscaping
Q3. Shoreline protection (Kayak Beach)
Demolition
Site Grading
Excavation
Install Shoreline protection and paths
Landscaping
Q3. Shoreline protection (Boardwalk)
Demolition
Site Grading
Excavation
Install Shoreline protection and paths
Landscaping
Q3. Shoreline protection (Play Areas)
Demolition
Site Grading
Excavation
Install Shoreline protection and paths
Landscaping
Q4. Landscaping beneath the freeway
Demolition
Site Grading
Excavation
Install Shoreline protection and paths
Landscaping

All construction 8am to 6pm, Monday through Saturday

Phase	Sub-Phase	Fill Imported (cy/day)	Fill Exported (cy/day)	Square Feet Demolished	Acres Graded	Building Square Footage	Square Feet Paved	Workers per Day	Haul Trucks per day	Trees Planted/ Landscaping	Water Consumed (gallons)
Phase 1 Bridge Yard		30,000 total	0 total								
	1A Bridge Yard Arrival Plaza										
	Demolition			pavement removal 50,100 sf							
	Site preparation			clearing 50,100 sf							
	Grading				minor grading 50,100 sf						
	Asphalt Paving						yes, 95% of area 47,595 sf				
	Landscaping									375 trees (35 of which are large oak trees)	
	1B Historic Display Plaza										
	Demolition			pavement removal 12,880 sf							
	Site Grading				minor grading 12,880 sf						
	Excavation				none						
	Building construction					none					
	Asphalt Paving						none				
	Pervious Paving						10% of area 1,288 sf				
	Architectural Coatings										
	1C Outdoor Yard Event Space										
	Demolition			pavement removal 281,404 sf							
	Site Grading				minor; fill for mound 5 ft average						
	Excavation				no major						
	Asphalt Paving						none				
	Landscaping									minor	
	1D Bridge Yard Building Improvements					24,300					
	1E Indoor/Outdoor Auditorium										
	Demolition			pavement removal 3,400 sf							
	Site Grading				minor grading 3,400 sf						
	Excavation				none						
	Asphalt Paving					3,400 sf					
	Parking Area A										
	Demolition			pavement removal 70,300 sf							
	Site Grading				minor grading 70,300 sf						
	Excavation				none						
	Asphalt Paving						70,300 sf				
Phase 2 Key Point	**2A Building Renovation**	35,000 total	0 total								
	Demolition			none							
	Site preparation				none						
	Grading				none						
	Building construction					5450					
	Asphalt Paving/Concrete Paths						none				
	Architectural Coatings										
	Landscaping									minor	
	2B Path on Structure										

	Demolition			none	minor grading (10 footings, 6 ft diameter circles)						
	Site Grading										
	Excavation				minor excavation (3,000 - 5,000 cy)	none					
	Building construction						none				
	Asphalt Paving/Concrete Paths										
	Landscaping									150 trees	
	2C Pier (300' long, 30'wide)										
	Demolition			none							
	Site Grading				none						
	Excavation				60-80 ft deep for 5 piles						
	Building construction					11000					
	Asphalt Paving/Concrete Paths						none				
	Landscaping									none	
	Windbreak/Tree Buffer										
	Demolition			removal of misc pavement/ gravel/ junk (5% of area = 31,173 sf)							
	Site Grading				minor						
	Excavation				none						
	Asphalt Paving/Concrete Paths						none				
	Landscaping									1,500 trees	
	Parking Area B (in Windbreak)										
	Demolition			Accounted for in Windbreak above							
	Site Grading				Accounted for in Windbreak above						
	Excavation				none						
	Asphalt Paving/Concrete Paths						Pervious surface 60,400 sf				
	Landscaping									Accounted for in Windbreak above	
	Shoreline Protection (west end at Key Point)										
	Demolition			none							
	Site Grading	4,100 cy fill			0.23 acres						
	Excavation				none						
	Asphalt Paving/Concrete Paths						none				
	Shoreline Improvements						installing rock/ rip-rap/ retaining wall				
	Landscaping									none	
Phase 3 Port Playground and Radio Beach	**3A Visitor Center**	101,000 total	0 total								
	Demolition			none							
	Site preparation			clearing rock and debris (clean up) 6,500 sf							
	Grading				minor 6,500 sf						
	Building construction					6,475					
	Asphalt Paving						none				
	Architectural Coatings										
	Landscaping									minor	
	3B Play Areas										
	Demolition			none							

Site Grading				clearing rock and debris (clean up) and minor grading 70,310 sf						
Excavation				none						
Path and Site improvements construction					Main = 24,740 sf Climbing = 26,500 Skate = 19,070					
Asphalt Paving						pervious; no asphalt				
Architectural Coatings										
Landscaping									minor	
3C Kayak Beach										
Demolition			none							
Site Grading				minor; add sand 31,240 sf						
Excavation				none						
Path and site improvements construction					minor; ramps	none				
Landscaping									none	
3D Boardwalk										
Demolition			none							
Site Grading				minor 10,990 sf						
Excavation				none						
Boardwalk construction					boardwalk	cement; no asphalt				
Landscaping									minimal	
3E Meadow View Point										
Demolition			none							
Site Grading				adding fill; area of treatment 76,860 sf						
Excavation				none						
Path and Wall construction					retaining wall 550 ft long x 0-10 ft high	pervious; no asphalt				
Landscaping									grasses/native plants also 950 trees on Boardwalk, Meadow View Point, Meadow and Bluff Walk	
3F Meadow and Bluff Walk										
Demolition			none							
Site Grading				minor smoothing 5.3 acres						
Excavation				none						
Path construction					path construction	pervious; no asphalt				
Landscaping									grasses/native plants	
3G View Rides				would need minor excavation for footings						
4A Path to Radio Beach										
Demolition			none							
Site Grading				minor smoothing 4,000 - 4,200 ft long (unsure of sf)						
Excavation				9 pilings for elevated portion (10,000 cy excavation)						

Path construction						concrete for rip-rap portion; remainder will be boardwalk				
Asphalt Paving						none				
4B/C Restoration/Fencing										
Demolition			none							
Site Grading				minor grading to remove non-natives and replace with native plants 1 acre of grading					4 acres of restoration	
Excavation				none						
Fencing construction					1,700 lf					
Asphalt Paving						none				
Parking Area C										
Demolition			none							
Site Grading				minor grading to smooth and add oyster shells 500 sf						
Excavation				none	none					
Asphalt Paving						pervious; no asphalt 500 sf				
Architectural Coatings										
Parking Area D										
Demolition			none							
Site Grading				minor 48,000 sf						
Excavation				none						
Asphalt Paving						48,000 sf				
Landscaping										minor
Shoreline protection (southern shoreline)										
Demolition			none							
Site Grading				minor smoothing						
Excavation				none						
Install Shoreline protection and paths					see figure showing shoreline types					
Landscaping										none
Q5. Shoreline protection (Kayak Beach)										
Demolition			none							
Site Grading				minor smoothing						
Excavation				none						
Install Shoreline protection and paths					see figure showing shoreline types					
Landscaping										none
Q5. Shoreline protection (Boardwalk)										
Demolition			none							
Site Grading				minor smoothing						
Excavation				none						
Install Shoreline protection and paths					see figure showing shoreline types					
Landscaping										none
Q5. Shoreline protection (Play Areas)										
Demolition			none							
Site Grading				minor smoothing						
Excavation				none						
Install Shoreline protection and paths					see figure showing shoreline types					
Landscaping										none

Phase	Type	#/Day	HP	Hr/Day
Q6. Demolition	Excavators	2	120	8
	Bulldozers	2	325	8
	Concrete/industrial saws	1	250	6
	Tractors/Loaders/Backhoes	3	300	8
Site preparation	Graders	1	250	8
	Tractors/Loaders/Backhoes	3	350	8
	Bulldozers	3	350	4
	Scraper	1	350	4
Q6. Grading	Bulldozers	1	250	8
	Graders	1	350	8
	Tractors/Loaders/Backhoes	3	300	8
	Excavators	1	350	4
	Scrapers	1	350	4
Building construction	Cranes	1	150	8
	Forklifts	1	150	6
	Tractors/Loaders/Backhoes	1	300	8
	Welders	1	150	6
	Generator sets	1	400	6
Architectural coating	Air Compressor	1	150	8
Paving	Pavers	1	150	8
	Cement/Mortar mixers	1	150	6
	Rollers	2	300	8
	Tractors/Loaders/Backhoes	1	150	6
	Paving equipment	1	400	6
Q6. Excavation	Excavators	1	120	6
Q6. Landscaping	Backhoe	2	120	4

Phase	Type	#/Day	HP	Hr/Day
1A Bridge Yard Arrival Plaza				
Demolition	See master list			
Site preparation	See master list			
Grading	See master list			
Asphalt Paving	See master list			
1B Historic Display Plaza				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Building construction	See master list			
Asphalt Paving	See master list			
Architectural Coatings	See master list			
1C Outdoor Yard Event Space				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving	See master list			
1D Bridge Yard Building Improvements	See master list ("building construction")			
1E Indoor/Outdoor Auditorium				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving	See master list			
Parking Area A (west of Bridge Yard bldg)				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving	See master list			
3A Building Renovation				
Demolition	See master list			
Site preparation	See master list			
Grading	See master list			
Building construction	See master list			
Asphalt Paving/Concrete Paths	See master list			

Q6. Shoreline Improvements (west end at Key Point)	Assuming this is covered under site prep/construction/paving			
Q6. Path and Site improvements construction (2B play areas & 2C Kayak Beach)	Assuming this is covered under site paving			
Q6. Boardwalk construction (2D Boardwalk)	Assuming this is covered under site paving/building construction			
Q6. Path and Wall construction (2E Meadow View Point)	Assuming this is covered under site paving			
Q6. Path construction (2F, 4A)	Assuming this is covered under site paving			
Q6. Fencing construction (4B, 4C)	Assuming this is covered under site paving			
Q6. Install Shoreline protection and paths (Shoreline protection/southern shoreline)	Assuming this is covered under site prep/paving			

Architectural Coatings	See master list
Landscaping	See master list
3B Path on Structure	
Demolition	See master list
Site Grading	See master list
Excavation	See master list
Building construction	See master list
Asphalt Paving/Concrete Paths	See master list
Landscaping	See master list
3C Pier (300' long, 30'wide)	
Demolition	See master list
Site Grading	See master list
Excavation	See master list
Building construction	See master list
Asphalt Paving/Concrete Paths	See master list
Landscaping	See master list
Windbreak/Tree Buffer	
Demolition	See master list
Site Grading	See master list
Excavation	See master list
Asphalt Paving/Concrete Paths	See master list
Landscaping	See master list
Parking Area B (in Windbreak)	
Demolition	See master list
Site Grading	See master list
Excavation	See master list
Asphalt Paving/Concrete Paths	See master list
Landscaping	See master list

Shoreline Protection (west end at Key Point only)				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving/Concrete Paths	See master list			
Shoreline Improvements				
Landscaping	See master list			
2A Visitor Center				
Demolition	See master list			
Site preparation	See master list			
Grading	See master list			
Building construction	See master list			
Asphalt Paving	See master list			
Architectural Coatings	See master list			
Landscaping	See master list			
2B Play Areas				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Path and Site improvements construction				
Asphalt Paving	See master list			
Architectural Coatings	See master list			
Landscaping	See master list			
2C Kayak Beach				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Path and site improvements construction				
Landscaping	See master list			
2D Boardwalk				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Boardwalk construction				
Landscaping	See master list			
2E Meadow View Point				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Path and Wall construction				
Landscaping	See master list			
2F Meadow and Bluff Walk				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Path construction				
Landscaping	See master list			

2G View Rides				
4A Path to Radio Beach				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Path construction				
Asphalt Paving	See master list			
4B/C Restoration/Fencing				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Fencing construction				
Asphalt Paving	See master list			
Parking Area C Radio Beach informal parking				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving	See master list			
Architectural Coatings	See master list			
Parking Area D Wood Street Parking Lot Expansion				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Asphalt Paving	See master list			
Landscaping	See master list			
Shoreline protection (southern shoreline)				
Demolition	See master list			
Site Grading	See master list			
Excavation	See master list			
Install Shoreline protection and paths				
Landscaping	See master list			

Annual electricity consumption (for mobile offices and/or equipment):	kWh/year	Assume only one construction trailer per construction phase
Haul truck trip distance:	miles/trip (note, a default assumption of 20 miles per trip can be used if project-specific data is not available)	
	Use the default assumption of 20 miles per trip	

Total: 15-30 employees

Visitor Center (Key Point)	4-10
Port Playground	6-13
Other operations and maintenance	5-7

Daily estimated visitors is 1,370 - 5,479 (daily) or 500,000 - 2,000,000 (annually) 2,000,000

3,000 pedestrian

2,642 bicyclists

Utility	**Existing**	**Project**	**Passive Park Alternative**	**Active Park Alternative**
Potable Water Usage (gallons/year)		400,000		
Irrigation Water Usage (gallons/year)		17,191,000		
Wastewater Generation (gallons/year)		400,000		
Waste Generation (tons/year)				
Electricity Consumption (kWh/year) *				
Natural Gas Consumption (MMBtu/year) **				

** based on [XYZ] SF of conditioned space*

*** Small café within visitor center and warming hut*

Phase	Project	Passive Park Alternative	Active Park Alternative
Bridge Yard			
1A Arrival Plaza	X	X	X
1B Historic Display Plaza	X	X	X
1C Outdoor Yard Event Space	X	X	X
1D Bridge Yard Building Improvements	X	X	X
1E Indoor/Outdoor Auditorium	X	None	X
Parking Area A (west of Bridge Yard bldg)	X (200 spaces)	X (300 spaces)	X (200 spaces)
Key Point			
2A Building Renovation	X	None	X
2B Path to Bay Bridge Trail	X	X	X
2C Pier	X	None	X
2D Windbreak/Tree Buffer	X	X	I-80 and core park only
Parking Area B (in Windbreak)	X (50-150 spaces)	None	X (50-150 spaces)
Port Playground and Radio Beach			
2A Visitor Center	X	Bathrooms/kiosks only	X
2B Play Areas	X	Path/benches only	X
2C Kayak Beach	X	None	None
2D Boardwalk	X	Path/benches only	X
2E Meadow View Point	X	None	X
2F Meadow and Bluff Walk	X	X	X
2G Active View Feature	X	Path/benches only	X
4A Path to Radio Beach	X	None	X
4B/C Restoration/Fencing	X	X	X
Parking Area C Radio Beach informal parking	X (5 spaces)	None	20 spaces
Parking Area D Wood Street Parking Lot Expansion	X (additional 0-200 spaces)	None	200 spaces

For the items below, what phase?

Landscaping	X	Similar in Bridge Yard but little to none elsewhere	X or more
Shoreline Protection	X	None	X
Sea Level Rise Adaptation	X	None	X
Retention Basins/Stormwater Drainage	X	less	X
Hazardous Waste Clean-Up	X	X	X

25% less fill used in Passive Park Alternative

CalEEMod Output

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.15	Acre	1.15	47,595.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per Phase Assumptions # tab

Construction Phase - Per Phase 1 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,000 cy total divided by 5 Sub-phases in Phase 1 that include grading)

Construction Off-road Equipment Mitigation - per acre factors to acres

Sequestration -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	2.00	21.00
tblConstructionPhase	PhaseEndDate	12/30/2016	12/31/2016
tblGrading	AcresOfGrading	44.00	1.15
tblGrading	AcresOfGrading	10.50	0.00
tblGrading	MaterialImported	0.00	6,000.00
tblLandUse	LandUseSquareFeet	50,094.00	47,595.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	174.00	250.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	255.00	350.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	97.00	350.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblSequestration	NumberOfNewTrees	0.00	375.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.2343	2.8129	1.6058	3.1200e-003	0.2685	0.1117	0.3802	0.1330	0.1028	0.2358	0.0000	290.9521	290.9521	0.0762	0.0000	292.5524
2017	0.0213	0.2552	0.1901	3.4000e-004	1.5000e-003	0.0109	0.0124	4.0000e-004	9.9900e-003	0.0104	0.0000	30.7594	30.7594	9.0900e-003	0.0000	30.9503
Total	**0.2556**	**3.0681**	**1.7958**	**3.4600e-003**	**0.2700**	**0.1226**	**0.3926**	**0.1334**	**0.1128**	**0.2462**	**0.0000**	**321.7114**	**321.7114**	**0.0853**	**0.0000**	**323.5027**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.2343	2.8129	1.6058	3.1200e-003	0.2685	0.1117	0.3802	0.1330	0.1028	0.2358	0.0000	290.9518	290.9518	0.0762	0.0000	292.5521
2017	0.0213	0.2552	0.1901	3.4000e-004	1.5000e-003	0.0109	0.0124	4.0000e-004	9.9900e-003	0.0104	0.0000	30.7593	30.7593	9.0900e-003	0.0000	30.9503
Total	**0.2556**	**3.0681**	**1.7958**	**3.4600e-003**	**0.2700**	**0.1226**	**0.3926**	**0.1334**	**0.1128**	**0.2462**	**0.0000**	**321.7111**	**321.7111**	**0.0853**	**0.0000**	**323.5024**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2107	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.1700e-003	3.2400e-003	0.0122	2.0000e-005	1.4600e-003	4.0000e-005	1.5000e-003	3.9000e-004	4.0000e-005	4.3000e-004	0.0000	1.7520	1.7520	7.0000e-005	0.0000	1.7534
Waste						0.0000	0.0000		0.0000	0.0000	0.0203	0.0000	0.0203	1.2000e-003	0.0000	0.0455
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.3951	1.3951	6.0000e-005	1.0000e-005	1.4005
Total	**0.2119**	**3.2400e-003**	**0.0123**	**2.0000e-005**	**1.4600e-003**	**4.0000e-005**	**1.5000e-003**	**3.9000e-004**	**4.0000e-005**	**4.3000e-004**	**0.0203**	**3.1471**	**3.1674**	**1.3300e-003**	**1.0000e-005**	**3.1994**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2107	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.1700e-003	3.2400e-003	0.0122	2.0000e-005	1.4600e-003	4.0000e-005	1.5000e-003	3.9000e-004	4.0000e-005	4.3000e-004	0.0000	1.7520	1.7520	7.0000e-005	0.0000	1.7534
Waste						0.0000	0.0000		0.0000	0.0000	0.0203	0.0000	0.0203	1.2000e-003	0.0000	0.0455
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.3951	1.3951	6.0000e-005	1.0000e-005	1.4005
Total	**0.2119**	**3.2400e-003**	**0.0123**	**2.0000e-005**	**1.4600e-003**	**4.0000e-005**	**1.5000e-003**	**3.9000e-004**	**4.0000e-005**	**4.3000e-004**	**0.0203**	**3.1471**	**3.1674**	**1.3300e-003**	**1.0000e-005**	**3.1994**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	265.5000
Total	**265.5000**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2016	9/30/2016	5	22	
2	Site Preparation	Site Preparation	10/1/2016	10/31/2016	5	21	
3	Grading	Grading	11/1/2016	12/31/2016	5	44	
4	Paving	Paving	1/1/2017	1/31/2017	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.15

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Site Preparation	Graders	1	8.00	250	0.41
Site Preparation	Rubber Tired Dozers	3	4.00	350	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	350	0.37
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38

Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	228.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	750.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0247	0.0000	0.0247	3.7300e-003	0.0000	3.7300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0615	0.7169	0.4742	6.5000e-004		0.0327	0.0327		0.0300	0.0300	0.0000	61.1431	61.1431	0.0184	0.0000	61.5304
Total	**0.0615**	**0.7169**	**0.4742**	**6.5000e-004**	**0.0247**	**0.0327**	**0.0573**	**3.7300e-003**	**0.0300**	**0.0338**	**0.0000**	**61.1431**	**61.1431**	**0.0184**	**0.0000**	**61.5304**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	2.5500e-003	0.0342	0.0280	9.0000e-005	1.9200e-003	4.5000e-004	2.3700e-003	5.3000e-004	4.1000e-004	9.4000e-004	0.0000	7.8667	7.8667	6.0000e-005	0.0000	7.8680
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	1.2400e-003	0.0120	2.0000e-005	2.0000e-003	2.0000e-005	2.0100e-003	5.3000e-004	2.0000e-005	5.5000e-004	0.0000	1.8164	1.8164	1.0000e-004	0.0000	1.8186
Total	**3.3900e-003**	**0.0354**	**0.0400**	**1.1000e-004**	**3.9200e-003**	**4.7000e-004**	**4.3800e-003**	**1.0600e-003**	**4.3000e-004**	**1.4900e-003**	**0.0000**	**9.6831**	**9.6831**	**1.6000e-004**	**0.0000**	**9.6865**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0247	0.0000	0.0247	3.7300e-003	0.0000	3.7300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0615	0.7169	0.4742	6.5000e-004		0.0327	0.0327		0.0300	0.0300	0.0000	61.1430	61.1430	0.0184	0.0000	61.5303
Total	**0.0615**	**0.7169**	**0.4742**	**6.5000e-004**	**0.0247**	**0.0327**	**0.0573**	**3.7300e-003**	**0.0300**	**0.0338**	**0.0000**	**61.1430**	**61.1430**	**0.0184**	**0.0000**	**61.5303**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.5500e-003	0.0342	0.0280	9.0000e-005	1.9200e-003	4.5000e-004	2.3700e-003	5.3000e-004	4.1000e-004	9.4000e-004	0.0000	7.8667	7.8667	6.0000e-005	0.0000	7.8680
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	1.2400e-003	0.0120	2.0000e-005	2.0000e-003	2.0000e-005	2.0100e-003	5.3000e-004	2.0000e-005	5.5000e-004	0.0000	1.8164	1.8164	1.0000e-004	0.0000	1.8186
Total	**3.3900e-003**	**0.0354**	**0.0400**	**1.1000e-004**	**3.9200e-003**	**4.7000e-004**	**4.3800e-003**	**1.0600e-003**	**4.3000e-004**	**1.4900e-003**	**0.0000**	**9.6831**	**9.6831**	**1.6000e-004**	**0.0000**	**9.6865**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0949	0.0000	0.0949	0.0521	0.0000	0.0521	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0548	0.6798	0.3829	6.4000e-004		0.0269	0.0269		0.0247	0.0247	0.0000	59.8990	59.8990	0.0181	0.0000	60.2784
Total	**0.0548**	**0.6798**	**0.3829**	**6.4000e-004**	**0.0949**	**0.0269**	**0.1217**	**0.0521**	**0.0247**	**0.0769**	**0.0000**	**59.8990**	**59.8990**	**0.0181**	**0.0000**	**60.2784**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2000e-004	1.0700e-003	0.0103	2.0000e-005	1.7200e-003	1.0000e-005	1.7300e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.5605	1.5605	9.0000e-005	0.0000	1.5623
Total	**7.2000e-004**	**1.0700e-003**	**0.0103**	**2.0000e-005**	**1.7200e-003**	**1.0000e-005**	**1.7300e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.5605**	**1.5605**	**9.0000e-005**	**0.0000**	**1.5623**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					0.0949	0.0000	0.0949	0.0521	0.0000	0.0521	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0548	0.6798	0.3829	6.4000e-004		0.0269	0.0269		0.0247	0.0247	0.0000	59.8989	59.8989	0.0181	0.0000	60.2783
Total	**0.0548**	**0.6798**	**0.3829**	**6.4000e-004**	**0.0949**	**0.0269**	**0.1217**	**0.0521**	**0.0247**	**0.0769**	**0.0000**	**59.8989**	**59.8989**	**0.0181**	**0.0000**	**60.2783**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2000e-004	1.0700e-003	0.0103	2.0000e-005	1.7200e-003	1.0000e-005	1.7300e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.5605	1.5605	9.0000e-005	0.0000	1.5623
Total	**7.2000e-004**	**1.0700e-003**	**0.0103**	**2.0000e-005**	**1.7200e-003**	**1.0000e-005**	**1.7300e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.5605**	**1.5605**	**9.0000e-005**	**0.0000**	**1.5623**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1334	0.0000	0.1334	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1041	1.2650	0.5849	1.3700e-003		0.0502	0.0502		0.0462	0.0462	0.0000	129.5196	129.5196	0.0391	0.0000	130.3400
Total	**0.1041**	**1.2650**	**0.5849**	**1.3700e-003**	**0.1334**	**0.0502**	**0.1836**	**0.0729**	**0.0462**	**0.1191**	**0.0000**	**129.5196**	**129.5196**	**0.0391**	**0.0000**	**130.3400**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.3700e-003	0.1125	0.0920	2.8000e-004	6.3300e-003	1.4700e-003	7.8000e-003	1.7400e-003	1.3500e-003	3.0900e-003	0.0000	25.8774	25.8774	1.9000e-004	0.0000	25.8814
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5200e-003	2.2400e-003	0.0216	4.0000e-005	3.5900e-003	3.0000e-005	3.6300e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.2695	3.2695	1.9000e-004	0.0000	3.2734
Total	**9.8900e-003**	**0.1148**	**0.1136**	**3.2000e-004**	**9.9200e-003**	**1.5000e-003**	**0.0114**	**2.7000e-003**	**1.3800e-003**	**4.0700e-003**	**0.0000**	**29.1469**	**29.1469**	**3.8000e-004**	**0.0000**	**29.1548**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1334	0.0000	0.1334	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1041	1.2650	0.5849	1.3700e-003		0.0502	0.0502		0.0462	0.0462	0.0000	129.5194	129.5194	0.0391	0.0000	130.3399
Total	**0.1041**	**1.2650**	**0.5849**	**1.3700e-003**	**0.1334**	**0.0502**	**0.1836**	**0.0729**	**0.0462**	**0.1191**	**0.0000**	**129.5194**	**129.5194**	**0.0391**	**0.0000**	**130.3399**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	8.3700e-003	0.1125	0.0920	2.8000e-004	6.3300e-003	1.4700e-003	7.8000e-003	1.7400e-003	1.3500e-003	3.0900e-003	0.0000	25.8774	25.8774	1.9000e-004	0.0000	25.8814
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5200e-003	2.2400e-003	0.0216	4.0000e-005	3.5900e-003	3.0000e-005	3.6300e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.2695	3.2695	1.9000e-004	0.0000	3.2734
Total	**9.8900e-003**	**0.1148**	**0.1136**	**3.2000e-004**	**9.9200e-003**	**1.5000e-003**	**0.0114**	**2.7000e-003**	**1.3800e-003**	**4.0700e-003**	**0.0000**	**29.1469**	**29.1469**	**3.8000e-004**	**0.0000**	**29.1548**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0207	0.2544	0.1820	3.2000e-004		0.0109	0.0109		9.9800e-003	9.9800e-003	0.0000	29.4490	29.4490	9.0200e-003	0.0000	29.6385
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0207**	**0.2544**	**0.1820**	**3.2000e-004**		**0.0109**	**0.0109**		**9.9800e-003**	**9.9800e-003**	**0.0000**	**29.4490**	**29.4490**	**9.0200e-003**	**0.0000**	**29.6385**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	8.4000e-004	8.0100e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3104	1.3104	7.0000e-005	0.0000	1.3119

Total	**5.6000e-004**	**8.4000e-004**	**8.0100e-003**	**2.0000e-005**	**1.5000e-003**	**1.0000e-005**	**1.5100e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.3104**	**1.3104**	**7.0000e-005**	**0.0000**	**1.3119**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0207	0.2544	0.1820	3.2000e-004		0.0109	0.0109		9.9800e-003	9.9800e-003	0.0000	29.4489	29.4489	9.0200e-003	0.0000	29.6384
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0207**	**0.2544**	**0.1820**	**3.2000e-004**		**0.0109**	**0.0109**		**9.9800e-003**	**9.9800e-003**	**0.0000**	**29.4489**	**29.4489**	**9.0200e-003**	**0.0000**	**29.6384**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	8.4000e-004	8.0100e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3104	1.3104	7.0000e-005	0.0000	1.3119
Total	**5.6000e-004**	**8.4000e-004**	**8.0100e-003**	**2.0000e-005**	**1.5000e-003**	**1.0000e-005**	**1.5100e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.3104**	**1.3104**	**7.0000e-005**	**0.0000**	**1.3119**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1700e-003	3.2400e-003	0.0122	2.0000e-005	1.4600e-003	4.0000e-005	1.5000e-003	3.9000e-004	4.0000e-005	4.3000e-004	0.0000	1.7520	1.7520	7.0000e-005	0.0000	1.7534
Unmitigated	1.1700e-003	3.2400e-003	0.0122	2.0000e-005	1.4600e-003	4.0000e-005	1.5000e-003	3.9000e-004	4.0000e-005	4.3000e-004	0.0000	1.7520	1.7520	7.0000e-005	0.0000	1.7534

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.83	1.83	1.83	3,904	3,904
Total	1.83	1.83	1.83	3,904	3,904

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2107	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.2107	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0248					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1859					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.2107**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					

Architectural Coating	0.0248					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1859					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.2107**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.3951	6.0000e-005	1.0000e-005	1.4005
Unmitigated	1.3951	6.0000e-005	1.0000e-005	1.4005

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.3702	1.3951	6.0000e-005	1.0000e-005	1.4005
Total		**1.3951**	**6.0000e-005**	**1.0000e-005**	**1.4005**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.3702	1.3951	6.0000e-005	1.0000e-005	1.4005
Total		**1.3951**	**6.0000e-005**	**1.0000e-005**	**1.4005**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0203	1.2000e-003	0.0000	0.0455
Unmitigated	0.0203	1.2000e-003	0.0000	0.0455

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.1	0.0203	1.2000e-003	0.0000	0.0455
Total		**0.0203**	**1.2000e-003**	**0.0000**	**0.0455**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.1	0.0203	1.2000e-003	0.0000	0.0455
Total		**0.0203**	**1.2000e-003**	**0.0000**	**0.0455**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			

Unmitigated	265.5000	0.0000	0.0000	265.5000

10.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	375	265.5000	0.0000	0.0000	265.5000
Total		**265.5000**	**0.0000**	**0.0000**	**265.5000**

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.15	Acre	1.15	47,595.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per Phase Assumptions # tab

Construction Phase - Per Phase 1 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,000 cy total divided by 5 Sub-phases in Phase 1 that include grading)

Construction Off-road Equipment Mitigation - per acre factors to acres

Sequestration -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	2.00	21.00
tblConstructionPhase	PhaseEndDate	12/30/2016	12/31/2016
tblGrading	AcresOfGrading	44.00	1.15
tblGrading	AcresOfGrading	10.50	0.00
tblGrading	MaterialImported	0.00	6,000.00
tblLandUse	LandUseSquareFeet	50,094.00	47,595.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	174.00	250.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	255.00	350.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	97.00	350.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblSequestration	NumberOfNewTrees	0.00	375.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	5.8814	68.2659	46.2285	0.0775	9.2029	3.0104	11.7635	5.0104	2.7696	7.3661	0.0000	7,963.9458	7,963.9458	1.9764	0.0000	8,005.4495
2017	1.9402	23.1947	17.3294	0.0306	0.1415	0.9875	1.1289	0.0375	0.9085	0.9460	0.0000	3,092.5860	3,092.5860	0.9113	0.0000	3,111.7225
Total	**7.8216**	**91.4605**	**63.5579**	**0.1081**	**9.3443**	**3.9979**	**12.8924**	**5.0479**	**3.6781**	**8.3121**	**0.0000**	**11,056.5318**	**11,056.5318**	**2.8876**	**0.0000**	**11,117.1720**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	5.8814	68.2659	46.2285	0.0775	9.2029	3.0104	11.7635	5.0104	2.7696	7.3661	0.0000	7,963.9458	7,963.9458	1.9764	0.0000	8,005.4495
2017	1.9402	23.1947	17.3294	0.0306	0.1415	0.9875	1.1289	0.0375	0.9085	0.9460	0.0000	3,092.5860	3,092.5860	0.9113	0.0000	3,111.7225
Total	**7.8216**	**91.4605**	**63.5579**	**0.1081**	**9.3443**	**3.9979**	**12.8924**	**5.0479**	**3.6781**	**8.3121**	**0.0000**	**11,056.5318**	**11,056.5318**	**2.8876**	**0.0000**	**11,117.1720**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1545	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.5000e-004	2.5000e-004	0.0000		2.7000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	6.5500e-003	0.0168	0.0617	1.3000e-004	8.3300e-003	2.3000e-004	8.5500e-003	2.2300e-003	2.1000e-004	2.4400e-003		11.1753	11.1753	4.2000e-004		11.1840
Total	**1.1611**	**0.0168**	**0.0618**	**1.3000e-004**	**8.3300e-003**	**2.3000e-004**	**8.5500e-003**	**2.2300e-003**	**2.1000e-004**	**2.4400e-003**		**11.1756**	**11.1756**	**4.2000e-004**	**0.0000**	**11.1843**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Area	1.1545	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.5000e-004	2.5000e-004	0.0000		2.7000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	6.5500e-003	0.0168	0.0617	1.3000e-004	8.3300e-003	2.3000e-004	8.5500e-003	2.2300e-003	2.1000e-004	2.4400e-003		11.1753	11.1753	4.2000e-004		11.1840
Total	**1.1611**	**0.0168**	**0.0618**	**1.3000e-004**	**8.3300e-003**	**2.3000e-004**	**8.5500e-003**	**2.2300e-003**	**2.1000e-004**	**2.4400e-003**		**11.1756**	**11.1756**	**4.2000e-004**	**0.0000**	**11.1843**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2016	9/30/2016	5	22	
2	Site Preparation	Site Preparation	10/1/2016	10/31/2016	5	21	
3	Grading	Grading	11/1/2016	12/31/2016	5	44	
4	Paving	Paving	1/1/2017	1/31/2017	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.15

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38

Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Site Preparation	Graders	1	8.00	250	0.41
Site Preparation	Rubber Tired Dozers	3	4.00	350	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	350	0.37
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	228.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	750.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2416	0.0000	2.2416	0.3394	0.0000	0.3394			0.0000			0.0000
Off-Road	5.5884	65.1687	43.1063	0.0590		2.9682	2.9682		2.7308	2.7308		6,127.1537	6,127.1537	1.8482		6,165.9652
Total	**5.5884**	**65.1687**	**43.1063**	**0.0590**	**2.2416**	**2.9682**	**5.2099**	**0.3394**	**2.7308**	**3.0702**		**6,127.1537**	**6,127.1537**	**1.8482**		**6,165.9652**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2109	2.9976	1.9571	7.8300e-003	0.1808	0.0407	0.2214	0.0495	0.0374	0.0869		789.0943	789.0943	5.8400e-003		789.2169
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.2931**	**3.0972**	**3.1222**	**0.0102**	**0.3694**	**0.0422**	**0.4116**	**0.0995**	**0.0388**	**0.1384**		**985.2130**	**985.2130**	**0.0161**		**985.5520**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2416	0.0000	2.2416	0.3394	0.0000	0.3394			0.0000			0.0000
Off-Road	5.5884	65.1687	43.1063	0.0590		2.9682	2.9682		2.7308	2.7308	0.0000	6,127.1537	6,127.1537	1.8482		6,165.9652

Total	**5.5884**	**65.1687**	**43.1063**	**0.0590**	**2.2416**	**2.9682**	**5.2099**	**0.3394**	**2.7308**	**3.0702**	**0.0000**	**6,127.1537**	**6,127.1537**	**1.8482**		**6,165.9652**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2109	2.9976	1.9571	7.8300e-003	0.1808	0.0407	0.2214	0.0495	0.0374	0.0869		789.0943	789.0943	5.8400e-003		789.2169
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.2931**	**3.0972**	**3.1222**	**0.0102**	**0.3694**	**0.0422**	**0.4116**	**0.0995**	**0.0388**	**0.1384**		**985.2130**	**985.2130**	**0.0161**		**985.5520**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0331	0.0000	9.0331	4.9653	0.0000	4.9653			0.0000			0.0000
Off-Road	5.2142	64.7401	36.4649	0.0605		2.5592	2.5592		2.3545	2.3545		6,288.3145	6,288.3145	1.8968		6,328.1469
Total	**5.2142**	**64.7401**	**36.4649**	**0.0605**	**9.0331**	**2.5592**	**11.5923**	**4.9653**	**2.3545**	**7.3198**		**6,288.3145**	**6,288.3145**	**1.8968**		**6,328.1469**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.0739**	**0.0896**	**1.0486**	**2.1000e-003**	**0.1698**	**1.4000e-003**	**0.1711**	**0.0450**	**1.2800e-003**	**0.0463**		**176.5068**	**176.5068**	**9.2700e-003**		**176.7016**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0331	0.0000	9.0331	4.9653	0.0000	4.9653			0.0000			0.0000
Off-Road	5.2142	64.7401	36.4649	0.0605		2.5592	2.5592		2.3545	2.3545	0.0000	6,288.3145	6,288.3145	1.8968		6,328.1469
Total	**5.2142**	**64.7401**	**36.4649**	**0.0605**	**9.0331**	**2.5592**	**11.5923**	**4.9653**	**2.3545**	**7.3198**	**0.0000**	**6,288.3145**	**6,288.3145**	**1.8968**		**6,328.1469**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.0739**	**0.0896**	**1.0486**	**2.1000e-003**	**0.1698**	**1.4000e-003**	**0.1711**	**0.0450**	**1.2800e-003**	**0.0463**		**176.5068**	**176.5068**	**9.2700e-003**		**176.7016**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0652	0.0000	6.0652	3.3156	0.0000	3.3156			0.0000			0.0000
Off-Road	4.7308	57.4992	26.5844	0.0625		2.2813	2.2813		2.0988	2.0988		6,489.5865	6,489.5865	1.9575		6,530.6937
Total	**4.7308**	**57.4992**	**26.5844**	**0.0625**	**6.0652**	**2.2813**	**8.3465**	**3.3156**	**2.0988**	**5.4143**		**6,489.5865**	**6,489.5865**	**1.9575**		**6,530.6937**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3469	4.9303	3.2189	0.0129	0.2973	0.0669	0.3642	0.0814	0.0615	0.1429		1,297.8525	1,297.8525	9.6000e-003		1,298.0542
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.4208**	**5.0199**	**4.2675**	**0.0150**	**0.4671**	**0.0683**	**0.5354**	**0.1265**	**0.0628**	**0.1892**		**1,474.3593**	**1,474.3593**	**0.0189**		**1,474.7558**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0652	0.0000	6.0652	3.3156	0.0000	3.3156			0.0000			0.0000
Off-Road	4.7308	57.4992	26.5844	0.0625		2.2813	2.2813		2.0988	2.0988	0.0000	6,489.5865	6,489.5865	1.9575		6,530.6937
Total	**4.7308**	**57.4992**	**26.5844**	**0.0625**	**6.0652**	**2.2813**	**8.3465**	**3.3156**	**2.0988**	**5.4143**	**0.0000**	**6,489.5865**	**6,489.5865**	**1.9575**		**6,530.6937**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3469	4.9303	3.2189	0.0129	0.2973	0.0669	0.3642	0.0814	0.0615	0.1429		1,297.8525	1,297.8525	9.6000e-003		1,298.0542
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.4208**	**5.0199**	**4.2675**	**0.0150**	**0.4671**	**0.0683**	**0.5354**	**0.1265**	**0.0628**	**0.1892**		**1,474.3593**	**1,474.3593**	**0.0189**		**1,474.7558**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8853	23.1278	16.5486	0.0289		0.9864	0.9864		0.9075	0.9075		2,951.0840	2,951.0840	0.9042		2,970.0723

Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.8853**	**23.1278**	**16.5486**	**0.0289**		**0.9864**	**0.9864**		**0.9075**	**0.9075**		**2,951.0840**	**2,951.0840**	**0.9042**		**2,970.0723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0549	0.0668	0.7808	1.7500e-003	0.1415	1.1100e-003	0.1426	0.0375	1.0200e-003	0.0385		141.5020	141.5020	7.0500e-003		141.6502
Total	**0.0549**	**0.0668**	**0.7808**	**1.7500e-003**	**0.1415**	**1.1100e-003**	**0.1426**	**0.0375**	**1.0200e-003**	**0.0385**		**141.5020**	**141.5020**	**7.0500e-003**		**141.6502**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8853	23.1278	16.5486	0.0289		0.9864	0.9864		0.9075	0.9075	0.0000	2,951.0840	2,951.0840	0.9042		2,970.0723
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.8853**	**23.1278**	**16.5486**	**0.0289**		**0.9864**	**0.9864**		**0.9075**	**0.9075**	**0.0000**	**2,951.0840**	**2,951.0840**	**0.9042**		**2,970.0723**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0549	0.0668	0.7808	1.7500e-003	0.1415	1.1100e-003	0.1426	0.0375	1.0200e-003	0.0385		141.5020	141.5020	7.0500e-003		141.6502
Total	**0.0549**	**0.0668**	**0.7808**	**1.7500e-003**	**0.1415**	**1.1100e-003**	**0.1426**	**0.0375**	**1.0200e-003**	**0.0385**		**141.5020**	**141.5020**	**7.0500e-003**		**141.6502**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.5500e-003	0.0168	0.0617	1.3000e-004	8.3300e-003	2.3000e-004	8.5500e-003	2.2300e-003	2.1000e-004	2.4400e-003		11.1753	11.1753	4.2000e-004		11.1840
Unmitigated	6.5500e-003	0.0168	0.0617	1.3000e-004	8.3300e-003	2.3000e-004	8.5500e-003	2.2300e-003	2.1000e-004	2.4400e-003		11.1753	11.1753	4.2000e-004		11.1840

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.83	1.83	1.83	3,904	3,904
Total	1.83	1.83	1.83	3,904	3,904

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					

City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1545	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.5000e-004	2.5000e-004	0.0000		2.7000e-004
Unmitigated	1.1545	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.5000e-004	2.5000e-004	0.0000		2.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1360					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0185					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.5000e-004	2.5000e-004	0.0000		2.7000e-004
Total	**1.1545**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.5000e-004**	**2.5000e-004**	**0.0000**		**2.7000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1360					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0185					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.5000e-004	2.5000e-004	0.0000		2.7000e-004
Total	**1.1545**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.5000e-004**	**2.5000e-004**	**0.0000**		**2.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.30	Acre	0.30	13,068.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 1 lot acreage equals 10 but not sure how to break it up into 1a, 1b, etc.

Construction Phase - Per Phase 1 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions #

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,000 cy total divided by 5 Sub-phases in Phase 1 that include grading)
Conv. ated ov. ore factors to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	44.00
tblConstructionPhase	NumDays	100.00	132.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	44.00
tblConstructionPhase	PhaseEndDate	4/3/2017	1/31/2017
tblConstructionPhase	PhaseEndDate	3/3/2017	1/31/2017
tblConstructionPhase	PhaseEndDate	11/1/2016	8/31/2016
tblConstructionPhase	PhaseStartDate	2/1/2017	12/1/2016
tblConstructionPhase	PhaseStartDate	9/1/2016	8/1/2016
tblConstructionPhase	PhaseStartDate	9/1/2016	7/1/2016
tblGrading	AcresOfGrading	44.00	0.30
tblGrading	MaterialImported	0.00	6,000.00
tblOffRoadEquipment	HorsePower	78.00	150.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00

tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	1.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.4192	4.3190	2.3658	5.1300e-003	0.1647	0.1854	0.3501	0.0788	0.1737	0.2525	0.0000	486.2862	486.2862	0.0973	0.0000	488.3291
2017	0.0883	0.5914	0.3809	8.4000e-004	1.5000e-003	0.0250	0.0265	4.0000e-004	0.0236	0.0240	0.0000	78.4254	78.4254	0.0147	0.0000	78.7341
Total	**0.5074**	**4.9105**	**2.7467**	**5.9700e-003**	**0.1662**	**0.2103**	**0.3765**	**0.0792**	**0.1972**	**0.2765**	**0.0000**	**564.7116**	**564.7116**	**0.1120**	**0.0000**	**567.0632**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.4192	4.3190	2.3658	5.1300e-003	0.1647	0.1854	0.3501	0.0788	0.1737	0.2525	0.0000	486.2857	486.2857	0.0973	0.0000	488.3285
2017	0.0883	0.5914	0.3809	8.4000e-004	1.5000e-003	0.0250	0.0265	4.0000e-004	0.0236	0.0240	0.0000	78.4253	78.4253	0.0147	0.0000	78.7340
Total	**0.5074**	**4.9105**	**2.7467**	**5.9700e-003**	**0.1662**	**0.2103**	**0.3765**	**0.0792**	**0.1972**	**0.2765**	**0.0000**	**564.7110**	**564.7110**	**0.1120**	**0.0000**	**567.0626**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0579	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.1000e-004	8.5000e-004	3.1900e-003	1.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	0.4570	0.4570	2.0000e-005	0.0000	0.4574
Waste						0.0000	0.0000		0.0000	0.0000	6.0900e-003	0.0000	6.0900e-003	3.6000e-004	0.0000	0.0137
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.3640	0.3640	2.0000e-005	0.0000	0.3654
Total	**0.0582**	**8.5000e-004**	**3.1900e-003**	**1.0000e-005**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**1.0000e-004**	**1.0000e-005**	**1.1000e-004**	**6.0900e-003**	**0.8210**	**0.8271**	**4.0000e-004**	**0.0000**	**0.8364**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0579	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.1000e-004	8.5000e-004	3.1900e-003	1.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	0.4570	0.4570	2.0000e-005	0.0000	0.4574
Waste						0.0000	0.0000		0.0000	0.0000	6.0900e-003	0.0000	6.0900e-003	3.6000e-004	0.0000	0.0137
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.3640	0.3640	2.0000e-005	0.0000	0.3654
Total	**0.0582**	**8.5000e-004**	**3.1900e-003**	**1.0000e-005**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**1.0000e-004**	**1.0000e-005**	**1.1000e-004**	**6.0900e-003**	**0.8210**	**0.8271**	**4.0000e-004**	**0.0000**	**0.8364**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2016	6/30/2016	5	22	
2	Excavation	Site Preparation	7/1/2016	8/31/2016	5	44	
3	Grading	Grading	7/1/2016	8/31/2016	5	44	
4	Building Construction	Building Construction	8/1/2016	1/31/2017	5	132	
5	Architectural Coatings	Architectural Coating	12/1/2016	1/31/2017	5	44	
6	Paving	Paving	2/1/2017	2/28/2017	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,602; Non-Residential Outdoor: 6,534 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29

Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Architectural Coatings	Air Compressors	1	8.00	150	0.48
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	59.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	750.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	2.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.3400e-003	0.0000	6.3400e-003	9.6000e-004	0.0000	9.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0615	0.7169	0.4742	6.5000e-004		0.0327	0.0327		0.0300	0.0300	0.0000	61.1431	61.1431	0.0184	0.0000	61.5304
Total	**0.0615**	**0.7169**	**0.4742**	**6.5000e-004**	**6.3400e-003**	**0.0327**	**0.0390**	**9.6000e-004**	**0.0300**	**0.0310**	**0.0000**	**61.1431**	**61.1431**	**0.0184**	**0.0000**	**61.5304**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.6000e-004	8.8500e-003	7.2300e-003	2.0000e-005	5.0000e-004	1.2000e-004	6.1000e-004	1.4000e-004	1.1000e-004	2.4000e-004	0.0000	2.0357	2.0357	2.0000e-005	0.0000	2.0360
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	1.2400e-003	0.0120	2.0000e-005	2.0000e-003	2.0000e-005	2.0100e-003	5.3000e-004	2.0000e-005	5.5000e-004	0.0000	1.8164	1.8164	1.0000e-004	0.0000	1.8186
Total	**1.5000e-003**	**0.0101**	**0.0193**	**4.0000e-005**	**2.5000e-003**	**1.4000e-004**	**2.6200e-003**	**6.7000e-004**	**1.3000e-004**	**7.9000e-004**	**0.0000**	**3.8521**	**3.8521**	**1.2000e-004**	**0.0000**	**3.8546**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.3400e-003	0.0000	6.3400e-003	9.6000e-004	0.0000	9.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0615	0.7169	0.4742	6.5000e-004		0.0327	0.0327		0.0300	0.0300	0.0000	61.1430	61.1430	0.0184	0.0000	61.5303

Total	**0.0615**	**0.7169**	**0.4742**	**6.5000e-004**	**6.3400e-003**	**0.0327**	**0.0390**	**9.6000e-004**	**0.0300**	**0.0310**	**0.0000**	**61.1430**	**61.1430**	**0.0184**	**0.0000**	**61.5303**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.6000e-004	8.8500e-003	7.2300e-003	2.0000e-005	5.0000e-004	1.2000e-004	6.1000e-004	1.4000e-004	1.1000e-004	2.4000e-004	0.0000	2.0357	2.0357	2.0000e-005	0.0000	2.0360
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	1.2400e-003	0.0120	2.0000e-005	2.0000e-003	2.0000e-005	2.0100e-003	5.3000e-004	2.0000e-005	5.5000e-004	0.0000	1.8164	1.8164	1.0000e-004	0.0000	1.8186
Total	**1.5000e-003**	**0.0101**	**0.0193**	**4.0000e-005**	**2.5000e-003**	**1.4000e-004**	**2.6200e-003**	**6.7000e-004**	**1.3000e-004**	**7.9000e-004**	**0.0000**	**3.8521**	**3.8521**	**1.2000e-004**	**0.0000**	**3.8546**

3.3 Excavation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0117	0.0000	0.0117	1.2600e-003	0.0000	1.2600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0362	0.3625	0.2101	2.7000e-004		0.0229	0.0229		0.0211	0.0211	0.0000	25.4517	25.4517	7.6800e-003	0.0000	25.6129
Total	**0.0362**	**0.3625**	**0.2101**	**2.7000e-004**	**0.0117**	**0.0229**	**0.0346**	**1.2600e-003**	**0.0211**	**0.0223**	**0.0000**	**25.4517**	**25.4517**	**7.6800e-003**	**0.0000**	**25.6129**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.7000e-004	3.6000e-003	1.0000e-005	6.0000e-004	1.0000e-005	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5449	0.5449	3.0000e-005	0.0000	0.5456
Total	**2.5000e-004**	**3.7000e-004**	**3.6000e-003**	**1.0000e-005**	**6.0000e-004**	**1.0000e-005**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5449**	**0.5449**	**3.0000e-005**	**0.0000**	**0.5456**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0117	0.0000	0.0117	1.2600e-003	0.0000	1.2600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0362	0.3625	0.2101	2.7000e-004		0.0229	0.0229		0.0211	0.0211	0.0000	25.4517	25.4517	7.6800e-003	0.0000	25.6129
Total	**0.0362**	**0.3625**	**0.2101**	**2.7000e-004**	**0.0117**	**0.0229**	**0.0346**	**1.2600e-003**	**0.0211**	**0.0223**	**0.0000**	**25.4517**	**25.4517**	**7.6800e-003**	**0.0000**	**25.6129**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	2.5000e-004	3.7000e-004	3.6000e-003	1.0000e-005	6.0000e-004	1.0000e-005	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5449	0.5449	3.0000e-005	0.0000	0.5456
Total	**2.5000e-004**	**3.7000e-004**	**3.6000e-003**	**1.0000e-005**	**6.0000e-004**	**1.0000e-005**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5449**	**0.5449**	**3.0000e-005**	**0.0000**	**0.5456**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1330	0.0000	0.1330	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1183	1.3667	0.6679	1.5100e-003		0.0578	0.0578		0.0538	0.0538	0.0000	141.3480	141.3480	0.0402	0.0000	142.1925
Total	**0.1183**	**1.3667**	**0.6679**	**1.5100e-003**	**0.1330**	**0.0578**	**0.1908**	**0.0729**	**0.0538**	**0.1267**	**0.0000**	**141.3480**	**141.3480**	**0.0402**	**0.0000**	**142.1925**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.3700e-003	0.1125	0.0920	2.8000e-004	6.3300e-003	1.4700e-003	7.8000e-003	1.7400e-003	1.3500e-003	3.0900e-003	0.0000	25.8774	25.8774	1.9000e-004	0.0000	25.8814
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5200e-003	2.2400e-003	0.0216	4.0000e-005	3.5900e-003	3.0000e-005	3.6300e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.2695	3.2695	1.9000e-004	0.0000	3.2734
Total	**9.8900e-003**	**0.1148**	**0.1136**	**3.2000e-004**	**9.9200e-003**	**1.5000e-003**	**0.0114**	**2.7000e-003**	**1.3800e-003**	**4.0700e-003**	**0.0000**	**29.1469**	**29.1469**	**3.8000e-004**	**0.0000**	**29.1548**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1330	0.0000	0.1330	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1183	1.3667	0.6679	1.5100e-003		0.0578	0.0578		0.0538	0.0538	0.0000	141.3479	141.3479	0.0402	0.0000	142.1923
Total	**0.1183**	**1.3667**	**0.6679**	**1.5100e-003**	**0.1330**	**0.0578**	**0.1908**	**0.0729**	**0.0538**	**0.1267**	**0.0000**	**141.3479**	**141.3479**	**0.0402**	**0.0000**	**142.1923**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.3700e-003	0.1125	0.0920	2.8000e-004	6.3300e-003	1.4700e-003	7.8000e-003	1.7400e-003	1.3500e-003	3.0900e-003	0.0000	25.8774	25.8774	1.9000e-004	0.0000	25.8814
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5200e-003	2.2400e-003	0.0216	4.0000e-005	3.5900e-003	3.0000e-005	3.6300e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.2695	3.2695	1.9000e-004	0.0000	3.2734
Total	**9.8900e-003**	**0.1148**	**0.1136**	**3.2000e-004**	**9.9200e-003**	**1.5000e-003**	**0.0114**	**2.7000e-003**	**1.3800e-003**	**4.0700e-003**	**0.0000**	**29.1469**	**29.1469**	**3.8000e-004**	**0.0000**	**29.1548**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1488	1.6801	0.8166	2.2100e-003		0.0671	0.0671		0.0640	0.0640	0.0000	215.2008	215.2008	0.0298	0.0000	215.8268

Total	**0.1488**	**1.6801**	**0.8166**	**2.2100e-003**		**0.0671**	**0.0671**		**0.0640**	**0.0640**	**0.0000**	**215.2008**	**215.2008**	**0.0298**	**0.0000**	**215.8268**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3200e-003	0.0111	0.0158	3.0000e-005	7.1000e-004	1.7000e-004	8.8000e-004	2.0000e-004	1.5000e-004	3.6000e-004	0.0000	2.3972	2.3972	2.0000e-005	0.0000	2.3976
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3200e-003**	**0.0111**	**0.0158**	**3.0000e-005**	**7.1000e-004**	**1.7000e-004**	**8.8000e-004**	**2.0000e-004**	**1.5000e-004**	**3.6000e-004**	**0.0000**	**2.3972**	**2.3972**	**2.0000e-005**	**0.0000**	**2.3976**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1488	1.6801	0.8166	2.2100e-003		0.0671	0.0671		0.0640	0.0640	0.0000	215.2006	215.2006	0.0298	0.0000	215.8265
Total	**0.1488**	**1.6801**	**0.8166**	**2.2100e-003**		**0.0671**	**0.0671**		**0.0640**	**0.0640**	**0.0000**	**215.2006**	**215.2006**	**0.0298**	**0.0000**	**215.8265**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3200e-003	0.0111	0.0158	3.0000e-005	7.1000e-004	1.7000e-004	8.8000e-004	2.0000e-004	1.5000e-004	3.6000e-004	0.0000	2.3972	2.3972	2.0000e-005	0.0000	2.3976
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3200e-003**	**0.0111**	**0.0158**	**3.0000e-005**	**7.1000e-004**	**1.7000e-004**	**8.8000e-004**	**2.0000e-004**	**1.5000e-004**	**3.6000e-004**	**0.0000**	**2.3972**	**2.3972**	**2.0000e-005**	**0.0000**	**2.3976**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0279	0.3067	0.1603	4.4000e-004		0.0123	0.0123		0.0118	0.0118	0.0000	42.7895	42.7895	5.8800e-003	0.0000	42.9131
Total	**0.0279**	**0.3067**	**0.1603**	**4.4000e-004**		**0.0123**	**0.0123**		**0.0118**	**0.0118**	**0.0000**	**42.7895**	**42.7895**	**5.8800e-003**	**0.0000**	**42.9131**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	2.5000e-004	1.9900e-003	3.0200e-003	1.0000e-005	1.4000e-004	3.0000e-005	1.7000e-004	4.0000e-005	3.0000e-005	7.0000e-005	0.0000	0.4714	0.4714	0.0000	0.0000	0.4715
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5000e-004**	**1.9900e-003**	**3.0200e-003**	**1.0000e-005**	**1.4000e-004**	**3.0000e-005**	**1.7000e-004**	**4.0000e-005**	**3.0000e-005**	**7.0000e-005**	**0.0000**	**0.4714**	**0.4714**	**0.0000**	**0.0000**	**0.4715**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0279	0.3067	0.1603	4.4000e-004		0.0123	0.0123		0.0118	0.0118	0.0000	42.7894	42.7894	5.8800e-003	0.0000	42.9130
Total	**0.0279**	**0.3067**	**0.1603**	**4.4000e-004**		**0.0123**	**0.0123**		**0.0118**	**0.0118**	**0.0000**	**42.7894**	**42.7894**	**5.8800e-003**	**0.0000**	**42.9130**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	1.9900e-003	3.0200e-003	1.0000e-005	1.4000e-004	3.0000e-005	1.7000e-004	4.0000e-005	3.0000e-005	7.0000e-005	0.0000	0.4714	0.4714	0.0000	0.0000	0.4715
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5000e-004**	**1.9900e-003**	**3.0200e-003**	**1.0000e-005**	**1.4000e-004**	**3.0000e-005**	**1.7000e-004**	**4.0000e-005**	**3.0000e-005**	**7.0000e-005**	**0.0000**	**0.4714**	**0.4714**	**0.0000**	**0.0000**	**0.4715**

3.6 Architectural Coatings - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0341					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2900e-003	0.0566	0.0449	8.0000e-005		3.0600e-003	3.0600e-003		3.0600e-003	3.0600e-003	0.0000	7.2015	7.2015	6.0000e-004	0.0000	7.2140
Total	**0.0414**	**0.0566**	**0.0449**	**8.0000e-005**		**3.0600e-003**	**3.0600e-003**		**3.0600e-003**	**3.0600e-003**	**0.0000**	**7.2015**	**7.2015**	**6.0000e-004**	**0.0000**	**7.2140**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Archit. Coating	0.0341					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2900e-003	0.0566	0.0449	8.0000e-005		3.0600e-003	3.0600e-003		3.0600e-003	3.0600e-003	0.0000	7.2015	7.2015	6.0000e-004	0.0000	7.2140
Total	**0.0414**	**0.0566**	**0.0449**	**8.0000e-005**		**3.0600e-003**	**3.0600e-003**		**3.0600e-003**	**3.0600e-003**	**0.0000**	**7.2015**	**7.2015**	**6.0000e-004**	**0.0000**	**7.2140**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Architectural Coatings - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0341					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6600e-003	0.0507	0.0448	8.0000e-005		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	7.2015	7.2015	5.4000e-004	0.0000	7.2129
Total	**0.0407**	**0.0507**	**0.0448**	**8.0000e-005**		**2.7100e-003**	**2.7100e-003**		**2.7100e-003**	**2.7100e-003**	**0.0000**	**7.2015**	**7.2015**	**5.4000e-004**	**0.0000**	**7.2129**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0341					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6600e-003	0.0507	0.0448	8.0000e-005		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	7.2015	7.2015	5.4000e-004	0.0000	7.2129
Total	**0.0407**	**0.0507**	**0.0448**	**8.0000e-005**		**2.7100e-003**	**2.7100e-003**		**2.7100e-003**	**2.7100e-003**	**0.0000**	**7.2015**	**7.2015**	**5.4000e-004**	**0.0000**	**7.2129**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0189	0.2313	0.1655	2.9000e-004		9.8600e-003	9.8600e-003		9.0700e-003	9.0700e-003	0.0000	26.7718	26.7718	8.2000e-003	0.0000	26.9440
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0189**	**0.2313**	**0.1655**	**2.9000e-004**		**9.8600e-003**	**9.8600e-003**		**9.0700e-003**	**9.0700e-003**	**0.0000**	**26.7718**	**26.7718**	**8.2000e-003**	**0.0000**	**26.9440**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	7.6000e-004	7.2800e-003	2.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.1913	1.1913	6.0000e-005	0.0000	1.1926
Total	**5.1000e-004**	**7.6000e-004**	**7.2800e-003**	**2.0000e-005**	**1.3600e-003**	**1.0000e-005**	**1.3700e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.1913**	**1.1913**	**6.0000e-005**	**0.0000**	**1.1926**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0189	0.2313	0.1655	2.9000e-004		9.8600e-003	9.8600e-003		9.0700e-003	9.0700e-003	0.0000	26.7718	26.7718	8.2000e-003	0.0000	26.9440
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0189**	**0.2313**	**0.1655**	**2.9000e-004**		**9.8600e-003**	**9.8600e-003**		**9.0700e-003**	**9.0700e-003**	**0.0000**	**26.7718**	**26.7718**	**8.2000e-003**	**0.0000**	**26.9440**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	7.6000e-004	7.2800e-003	2.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.1913	1.1913	6.0000e-005	0.0000	1.1926
Total	**5.1000e-004**	**7.6000e-004**	**7.2800e-003**	**2.0000e-005**	**1.3600e-003**	**1.0000e-005**	**1.3700e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.1913**	**1.1913**	**6.0000e-005**	**0.0000**	**1.1926**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.1000e-004	8.5000e-004	3.1900e-003	1.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	0.4570	0.4570	2.0000e-005	0.0000	0.4574
Unmitigated	3.1000e-004	8.5000e-004	3.1900e-003	1.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	0.4570	0.4570	2.0000e-005	0.0000	0.4574

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.48	0.48	0.48	1,018	1,018
Total	0.48	0.48	0.48	1,018	1,018

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0579	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Unmitigated	0.0579	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.8100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0510					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**0.0579**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					

Architectural Coating	6.8100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0510					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**0.0579**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.3640	2.0000e-005	0.0000	0.3654
Unmitigated	0.3640	2.0000e-005	0.0000	0.3654

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.357444	0.3640	2.0000e-005	0.0000	0.3654
Total		**0.3640**	**2.0000e-005**	**0.0000**	**0.3654**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.357444	0.3640	2.0000e-005	0.0000	0.3654
Total		**0.3640**	**2.0000e-005**	**0.0000**	**0.3654**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.0900e-003	3.6000e-004	0.0000	0.0137
Unmitigated	6.0900e-003	3.6000e-004	0.0000	0.0137

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0137
Total		**6.0900e-003**	**3.6000e-004**	**0.0000**	**0.0137**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0137
Total		**6.0900e-003**	**3.6000e-004**	**0.0000**	**0.0137**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.30	Acre	0.30	13,068.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 1 lot acreage equals 10 but not sure how to break it up into 1a, 1b, etc.

Construction Phase - Per Phase 1 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions #

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,000 cy total divided by 5 Sub-phases in Phase 1 that include grading)
Converted cy cubic feet to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	44.00
tblConstructionPhase	NumDays	100.00	132.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	44.00
tblConstructionPhase	PhaseEndDate	4/3/2017	1/31/2017
tblConstructionPhase	PhaseEndDate	3/3/2017	1/31/2017
tblConstructionPhase	PhaseEndDate	11/1/2016	8/31/2016
tblConstructionPhase	PhaseStartDate	2/1/2017	12/1/2016
tblConstructionPhase	PhaseStartDate	9/1/2016	8/1/2016
tblConstructionPhase	PhaseStartDate	9/1/2016	7/1/2016
tblGrading	AcresOfGrading	44.00	0.30
tblGrading	MaterialImported	0.00	6,000.00
tblOffRoadEquipment	HorsePower	78.00	150.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00

tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	1.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	10.1841	114.3741	59.4102	0.1369	7.0837	4.9616	12.0453	3.5084	4.6334	8.1418	0.0000	14,222.5468	14,222.5468	3.0177	0.0000	14,285.9181
2017	6.2629	32.6661	18.8471	0.0482	0.1415	1.3702	1.3836	0.0375	1.3172	1.3210	0.0000	5,056.9904	5,056.9904	0.9113	0.0000	5,076.1269
Total	**16.4470**	**147.0402**	**78.2574**	**0.1852**	**7.2252**	**6.3318**	**13.4289**	**3.5459**	**5.9507**	**9.4628**	**0.0000**	**19,279.5372**	**19,279.5372**	**3.9289**	**0.0000**	**19,362.0449**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	10.1841	114.3741	59.4102	0.1369	7.0837	4.9616	12.0453	3.5084	4.6334	8.1418	0.0000	14,222.5468	14,222.5468	3.0177	0.0000	14,285.9180
2017	6.2629	32.6661	18.8471	0.0482	0.1415	1.3702	1.3836	0.0375	1.3172	1.3210	0.0000	5,056.9904	5,056.9904	0.9113	0.0000	5,076.1269
Total	**16.4470**	**147.0402**	**78.2574**	**0.1852**	**7.2252**	**6.3318**	**13.4289**	**3.5459**	**5.9507**	**9.4628**	**0.0000**	**19,279.5372**	**19,279.5372**	**3.9289**	**0.0000**	**19,362.0449**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3170	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		7.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.7100e-003	4.3900e-003	0.0161	3.0000e-005	2.1700e-003	6.0000e-005	2.2300e-003	5.8000e-004	5.0000e-005	6.4000e-004		2.9153	2.9153	1.1000e-004		2.9176
Total	**0.3187**	**4.3900e-003**	**0.0161**	**3.0000e-005**	**2.1700e-003**	**6.0000e-005**	**2.2300e-003**	**5.8000e-004**	**5.0000e-005**	**6.4000e-004**		**2.9154**	**2.9154**	**1.1000e-004**	**0.0000**	**2.9176**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3170	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		7.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.7100e-003	4.3900e-003	0.0161	3.0000e-005	2.1700e-003	6.0000e-005	2.2300e-003	5.8000e-004	5.0000e-005	6.4000e-004		2.9153	2.9153	1.1000e-004		2.9176
Total	**0.3187**	**4.3900e-003**	**0.0161**	**3.0000e-005**	**2.1700e-003**	**6.0000e-005**	**2.2300e-003**	**5.8000e-004**	**5.0000e-005**	**6.4000e-004**		**2.9154**	**2.9154**	**1.1000e-004**	**0.0000**	**2.9176**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description

1	Demolition	Demolition	6/1/2016	6/30/2016	5	22	
2	Excavation	Site Preparation	7/1/2016	8/31/2016	5	44	
3	Grading	Grading	7/1/2016	8/31/2016	5	44	
4	Building Construction	Building Construction	8/1/2016	1/31/2017	5	132	
5	Architectural Coatings	Architectural Coating	12/1/2016	1/31/2017	5	44	
6	Paving	Paving	2/1/2017	2/28/2017	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,602; Non-Residential Outdoor: 6,534 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Architectural Coatings	Air Compressors	1	8.00	150	0.48
Paving	Cement and Mortar Mixers	1	6.00	150	0.56

Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	59.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	750.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	2.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5763	0.0000	0.5763	0.0873	0.0000	0.0873			0.0000			0.0000
Off-Road	5.5884	65.1687	43.1063	0.0590		2.9682	2.9682		2.7308	2.7308		6,127.1537	6,127.1537	1.8482		6,165.9652
Total	**5.5884**	**65.1687**	**43.1063**	**0.0590**	**0.5763**	**2.9682**	**3.5445**	**0.0873**	**2.7308**	**2.8180**		**6,127.1537**	**6,127.1537**	**1.8482**		**6,165.9652**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0546	0.7757	0.5064	2.0300e-003	0.0468	0.0105	0.0573	0.0128	9.6800e-003	0.0225		204.1955	204.1955	1.5100e-003		204.2272
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.1367**	**0.8753**	**1.6716**	**4.3700e-003**	**0.2354**	**0.0121**	**0.2475**	**0.0628**	**0.0111**	**0.0739**		**400.3142**	**400.3142**	**0.0118**		**400.5623**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5763	0.0000	0.5763	0.0873	0.0000	0.0873			0.0000			0.0000
Off-Road	5.5884	65.1687	43.1063	0.0590		2.9682	2.9682		2.7308	2.7308	0.0000	6,127.1537	6,127.1537	1.8482		6,165.9652
Total	**5.5884**	**65.1687**	**43.1063**	**0.0590**	**0.5763**	**2.9682**	**3.5445**	**0.0873**	**2.7308**	**2.8180**	**0.0000**	**6,127.1537**	**6,127.1537**	**1.8482**		**6,165.9652**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Hauling	0.0546	0.7757	0.5064	2.0300e-003	0.0468	0.0105	0.0573	0.0128	9.6800e-003	0.0225		204.1955	204.1955	1.5100e-003		204.2272
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.1367**	**0.8753**	**1.6716**	**4.3700e-003**	**0.2354**	**0.0121**	**0.2475**	**0.0628**	**0.0111**	**0.0739**		**400.3142**	**400.3142**	**0.0118**		**400.5623**

3.3 Excavation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.6462	16.4748	9.5482	0.0123		1.0413	1.0413		0.9580	0.9580		1,275.2592	1,275.2592	0.3847		1,283.3371
Total	**1.6462**	**16.4748**	**9.5482**	**0.0123**	**0.5303**	**1.0413**	**1.5716**	**0.0573**	**0.9580**	**1.0153**		**1,275.2592**	**1,275.2592**	**0.3847**		**1,283.3371**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0123	0.0149	0.1748	3.5000e-004	0.0283	2.3000e-004	0.0285	7.5000e-003	2.1000e-004	7.7200e-003		29.4178	29.4178	1.5500e-003		29.4503

Total	**0.0123**	**0.0149**	**0.1748**	**3.5000e-004**	**0.0283**	**2.3000e-004**	**0.0285**	**7.5000e-003**	**2.1000e-004**	**7.7200e-003**		**29.4178**	**29.4178**	**1.5500e-003**		**29.4503**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.6462	16.4748	9.5482	0.0123		1.0413	1.0413		0.9580	0.9580	0.0000	1,275.2592	1,275.2592	0.3847		1,283.3371
Total	**1.6462**	**16.4748**	**9.5482**	**0.0123**	**0.5303**	**1.0413**	**1.5716**	**0.0573**	**0.9580**	**1.0153**	**0.0000**	**1,275.2592**	**1,275.2592**	**0.3847**		**1,283.3371**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0123	0.0149	0.1748	3.5000e-004	0.0283	2.3000e-004	0.0285	7.5000e-003	2.1000e-004	7.7200e-003		29.4178	29.4178	1.5500e-003		29.4503
Total	**0.0123**	**0.0149**	**0.1748**	**3.5000e-004**	**0.0283**	**2.3000e-004**	**0.0285**	**7.5000e-003**	**2.1000e-004**	**7.7200e-003**		**29.4178**	**29.4178**	**1.5500e-003**		**29.4503**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0447	0.0000	6.0447	3.3133	0.0000	3.3133			0.0000			0.0000
Off-Road	5.3774	62.1212	30.3596	0.0687		2.6285	2.6285		2.4460	2.4460		7,082.2521	7,082.2521	2.0149		7,124.5639
Total	**5.3774**	**62.1212**	**30.3596**	**0.0687**	**6.0447**	**2.6285**	**8.6733**	**3.3133**	**2.4460**	**5.7594**		**7,082.2521**	**7,082.2521**	**2.0149**		**7,124.5639**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3469	4.9303	3.2189	0.0129	0.2973	0.0669	0.3642	0.0814	0.0615	0.1429		1,297.8525	1,297.8525	9.6000e-003		1,298.0542
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.4208**	**5.0199**	**4.2675**	**0.0150**	**0.4671**	**0.0683**	**0.5354**	**0.1265**	**0.0628**	**0.1892**		**1,474.3593**	**1,474.3593**	**0.0189**		**1,474.7558**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0447	0.0000	6.0447	3.3133	0.0000	3.3133			0.0000			0.0000
Off-Road	5.3774	62.1212	30.3596	0.0687		2.6285	2.6285		2.4460	2.4460	0.0000	7,082.2521	7,082.2521	2.0149		7,124.5639

Total	**5.3774**	**62.1212**	**30.3596**	**0.0687**	**6.0447**	**2.6285**	**8.6733**	**3.3133**	**2.4460**	**5.7594**	**0.0000**	**7,082.2521**	**7,082.2521**	**2.0149**		**7,124.5639**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3469	4.9303	3.2189	0.0129	0.2973	0.0669	0.3642	0.0814	0.0615	0.1429		1,297.8525	1,297.8525	9.6000e-003		1,298.0542
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.4208**	**5.0199**	**4.2675**	**0.0150**	**0.4671**	**0.0683**	**0.5354**	**0.1265**	**0.0628**	**0.1892**		**1,474.3593**	**1,474.3593**	**0.0189**		**1,474.7558**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7062	30.5476	14.8477	0.0402		1.2202	1.2202		1.1636	1.1636		4,313.0605	4,313.0605	0.5974		4,325.6050
Total	**2.7062**	**30.5476**	**14.8477**	**0.0402**		**1.2202**	**1.2202**		**1.1636**	**1.1636**		**4,313.0605**	**4,313.0605**	**0.5974**		**4,325.6050**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0212	0.1956	0.2125	4.8000e-004	0.0134	3.0300e-003	0.0164	3.8200e-003	2.7900e-003	6.6000e-003		48.1979	48.1979	3.8000e-004		48.2060
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0212**	**0.1956**	**0.2125**	**4.8000e-004**	**0.0134**	**3.0300e-003**	**0.0164**	**3.8200e-003**	**2.7900e-003**	**6.6000e-003**		**48.1979**	**48.1979**	**3.8000e-004**		**48.2060**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7062	30.5476	14.8477	0.0402		1.2202	1.2202		1.1636	1.1636	0.0000	4,313.0605	4,313.0605	0.5974		4,325.6050
Total	**2.7062**	**30.5476**	**14.8477**	**0.0402**		**1.2202**	**1.2202**		**1.1636**	**1.1636**	**0.0000**	**4,313.0605**	**4,313.0605**	**0.5974**		**4,325.6050**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0212	0.1956	0.2125	4.8000e-004	0.0134	3.0300e-003	0.0164	3.8200e-003	2.7900e-003	6.6000e-003		48.1979	48.1979	3.8000e-004		48.2060

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0212**	**0.1956**	**0.2125**	**4.8000e-004**	**0.0134**	**3.0300e-003**	**0.0164**	**3.8200e-003**	**2.7900e-003**	**6.6000e-003**		**48.1979**	**48.1979**	**3.8000e-004**		**48.2060**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5399	27.8850	14.5717	0.0401		1.1213	1.1213		1.0684	1.0684		4,287.9401	4,287.9401	0.5897		4,300.3238
Total	**2.5399**	**27.8850**	**14.5717**	**0.0401**		**1.1213**	**1.1213**		**1.0684**	**1.0684**		**4,287.9401**	**4,287.9401**	**0.5897**		**4,300.3238**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0200	0.1753	0.2030	4.8000e-004	0.0134	2.6200e-003	0.0160	3.8200e-003	2.4100e-003	6.2300e-003		47.3886	47.3886	3.6000e-004		47.3963
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0200**	**0.1753**	**0.2030**	**4.8000e-004**	**0.0134**	**2.6200e-003**	**0.0160**	**3.8200e-003**	**2.4100e-003**	**6.2300e-003**		**47.3886**	**47.3886**	**3.6000e-004**		**47.3963**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5399	27.8850	14.5717	0.0401		1.1213	1.1213		1.0684	1.0684	0.0000	4,287.9401	4,287.9401	0.5897		4,300.3238
Total	**2.5399**	**27.8850**	**14.5717**	**0.0401**		**1.1213**	**1.1213**		**1.0684**	**1.0684**	**0.0000**	**4,287.9401**	**4,287.9401**	**0.5897**		**4,300.3238**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0200	0.1753	0.2030	4.8000e-004	0.0134	2.6200e-003	0.0160	3.8200e-003	2.4100e-003	6.2300e-003		47.3886	47.3886	3.6000e-004		47.3963
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0200**	**0.1753**	**0.2030**	**4.8000e-004**	**0.0134**	**2.6200e-003**	**0.0160**	**3.8200e-003**	**2.4100e-003**	**6.2300e-003**		**47.3886**	**47.3886**	**3.6000e-004**		**47.3963**

3.6 Architectural Coatings - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.0973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.6629	5.1455	4.0775	7.6200e-003		0.2781	0.2781		0.2781	0.2781		721.6617	721.6617	0.0597		722.9150
Total	**3.7602**	**5.1455**	**4.0775**	**7.6200e-003**		**0.2781**	**0.2781**		**0.2781**	**0.2781**		**721.6617**	**721.6617**	**0.0597**		**722.9150**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.0973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.6629	5.1455	4.0775	7.6200e-003		0.2781	0.2781		0.2781	0.2781	0.0000	721.6617	721.6617	0.0597		722.9150
Total	**3.7602**	**5.1455**	**4.0775**	**7.6200e-003**		**0.2781**	**0.2781**		**0.2781**	**0.2781**	**0.0000**	**721.6617**	**721.6617**	**0.0597**		**722.9150**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Architectural Coatings - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.0973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.6057	4.6058	4.0725	7.6200e-003		0.2464	0.2464		0.2464	0.2464		721.6617	721.6617	0.0546		722.8084
Total	**3.7031**	**4.6058**	**4.0725**	**7.6200e-003**		**0.2464**	**0.2464**		**0.2464**	**0.2464**		**721.6617**	**721.6617**	**0.0546**		**722.8084**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.0973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.6057	4.6058	4.0725	7.6200e-003		0.2464	0.2464		0.2464	0.2464	0.0000	721.6617	721.6617	0.0546		722.8084
Total	**3.7031**	**4.6058**	**4.0725**	**7.6200e-003**		**0.2464**	**0.2464**		**0.2464**	**0.2464**	**0.0000**	**721.6617**	**721.6617**	**0.0546**		**722.8084**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.7 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8853	23.1278	16.5486	0.0289		0.9864	0.9864		0.9075	0.9075		2,951.0840	2,951.0840	0.9042		2,970.0723
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.8853**	**23.1278**	**16.5486**	**0.0289**		**0.9864**	**0.9864**		**0.9075**	**0.9075**		**2,951.0840**	**2,951.0840**	**0.9042**		**2,970.0723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0549	0.0668	0.7808	1.7500e-003	0.1415	1.1100e-003	0.1426	0.0375	1.0200e-003	0.0385		141.5020	141.5020	7.0500e-003		141.6502
Total	**0.0549**	**0.0668**	**0.7808**	**1.7500e-003**	**0.1415**	**1.1100e-003**	**0.1426**	**0.0375**	**1.0200e-003**	**0.0385**		**141.5020**	**141.5020**	**7.0500e-003**		**141.6502**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	1.8853	23.1278	16.5486	0.0289		0.9864	0.9864		0.9075	0.9075	0.0000	2,951.0840	2,951.0840	0.9042		2,970.0723
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.8853**	**23.1278**	**16.5486**	**0.0289**		**0.9864**	**0.9864**		**0.9075**	**0.9075**	**0.0000**	**2,951.0840**	**2,951.0840**	**0.9042**		**2,970.0723**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0549	0.0668	0.7808	1.7500e-003	0.1415	1.1100e-003	0.1426	0.0375	1.0200e-003	0.0385		141.5020	141.5020	7.0500e-003		141.6502
Total	**0.0549**	**0.0668**	**0.7808**	**1.7500e-003**	**0.1415**	**1.1100e-003**	**0.1426**	**0.0375**	**1.0200e-003**	**0.0385**		**141.5020**	**141.5020**	**7.0500e-003**		**141.6502**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7100e-003	4.3900e-003	0.0161	3.0000e-005	2.1700e-003	6.0000e-005	2.2300e-003	5.8000e-004	5.0000e-005	6.4000e-004		2.9153	2.9153	1.1000e-004		2.9176
Unmitigated	1.7100e-003	4.3900e-003	0.0161	3.0000e-005	2.1700e-003	6.0000e-005	2.2300e-003	5.8000e-004	5.0000e-005	6.4000e-004		2.9153	2.9153	1.1000e-004		2.9176

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.48	0.48	0.48	1,018	1,018
Total	0.48	0.48	0.48	1,018	1,018

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Mitigated	0.3170	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		7.0000e-005
Unmitigated	0.3170	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		7.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0373					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		7.0000e-005
Total	**0.3170**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**7.0000e-005**	**7.0000e-005**	**0.0000**		**7.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0373					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		7.0000e-005

Total	**0.3170**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**7.0000e-005**	**7.0000e-005**	**0.0000**		**7.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	4.85	Acre	4.85	211,266.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 1 lot acreage equals 10 but not sure how to break it up into 1a, 1b, etc.

Construction Phase - Per Phase 1 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab (281,404 SF minus 70,300 SF of parking lot A)

Grading - Per Phase Assumptions # tab (Material imported = 30,000 cy total divided by 5 Sub-phases in Phase 1 that include grading)

Con. acted sq. ure footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	8.00	43.00
tblConstructionPhase	NumDays	18.00	22.00
tblConstructionPhase	NumDays	5.00	43.00
tblConstructionPhase	PhaseEndDate	12/29/2016	10/31/2016
tblConstructionPhase	PhaseStartDate	11/1/2016	9/1/2016
tblGrading	AcresOfGrading	43.00	0.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2017

tblTripsAndVMT	WorkerTripNumber	20.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.3185	3.6622	2.3570	3.7000e-003	0.6376	0.1652	0.8028	0.3047	0.1520	0.4567	0.0000	345.6910	345.6910	0.0928	0.0000	347.6401
Total	**0.3185**	**3.6622**	**2.3570**	**3.7000e-003**	**0.6376**	**0.1652**	**0.8028**	**0.3047**	**0.1520**	**0.4567**	**0.0000**	**345.6910**	**345.6910**	**0.0928**	**0.0000**	**347.6401**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.3185	3.6622	2.3570	3.7000e-003	0.6376	0.1652	0.8028	0.3047	0.1520	0.4567	0.0000	345.6906	345.6906	0.0928	0.0000	347.6397
Total	**0.3185**	**3.6622**	**2.3570**	**3.7000e-003**	**0.6376**	**0.1652**	**0.8028**	**0.3047**	**0.1520**	**0.4567**	**0.0000**	**345.6906**	**345.6906**	**0.0928**	**0.0000**	**347.6397**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9353	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.9400e-003	0.0137	0.0516	9.0000e-005	6.1600e-003	1.7000e-004	6.3300e-003	1.6500e-003	1.6000e-004	1.8100e-003	0.0000	7.3887	7.3887	2.9000e-004	0.0000	7.3948
Waste						0.0000	0.0000		0.0000	0.0000	0.0853	0.0000	0.0853	5.0400e-003	0.0000	0.1911
Water						0.0000	0.0000		0.0000	0.0000	0.0000	5.8838	5.8838	2.7000e-004	6.0000e-005	5.9065
Total	**0.9402**	**0.0137**	**0.0517**	**9.0000e-005**	**6.1600e-003**	**1.7000e-004**	**6.3300e-003**	**1.6500e-003**	**1.6000e-004**	**1.8100e-003**	**0.0853**	**13.2726**	**13.3579**	**5.6000e-003**	**6.0000e-005**	**13.4924**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9353	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.9400e-003	0.0137	0.0516	9.0000e-005	6.1600e-003	1.7000e-004	6.3300e-003	1.6500e-003	1.6000e-004	1.8100e-003	0.0000	7.3887	7.3887	2.9000e-004	0.0000	7.3948
Waste						0.0000	0.0000		0.0000	0.0000	0.0853	0.0000	0.0853	5.0400e-003	0.0000	0.1911
Water						0.0000	0.0000		0.0000	0.0000	0.0000	5.8838	5.8838	2.7000e-004	6.0000e-005	5.9065
Total	**0.9402**	**0.0137**	**0.0517**	**9.0000e-005**	**6.1600e-003**	**1.7000e-004**	**6.3300e-003**	**1.6500e-003**	**1.6000e-004**	**1.8100e-003**	**0.0853**	**13.2726**	**13.3579**	**5.6000e-003**	**6.0000e-005**	**13.4924**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2016	8/31/2016	5	23	
2	Excavation	Site Preparation	9/1/2016	10/31/2016	5	43	
3	Grading	Grading	9/1/2016	10/31/2016	5	43	
4	Paving	Paving	11/1/2016	11/30/2016	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37

Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Excavation	Rubber Tired Dozers	3	8.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	960.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	8	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1039	0.0000	0.1039	0.0157	0.0000	0.0157	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0643	0.7494	0.4957	6.8000e-004		0.0341	0.0341		0.0314	0.0314	0.0000	63.9223	63.9223	0.0193	0.0000	64.3272
Total	**0.0643**	**0.7494**	**0.4957**	**6.8000e-004**	**0.1039**	**0.0341**	**0.1380**	**0.0157**	**0.0314**	**0.0471**	**0.0000**	**63.9223**	**63.9223**	**0.0193**	**0.0000**	**64.3272**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0107	0.1440	0.1177	3.6000e-004	8.1000e-003	1.8900e-003	9.9800e-003	2.2300e-003	1.7300e-003	3.9600e-003	0.0000	33.1230	33.1230	2.5000e-004	0.0000	33.1282
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	1.3000e-003	0.0126	2.0000e-005	2.0900e-003	2.0000e-005	2.1100e-003	5.6000e-004	2.0000e-005	5.7000e-004	0.0000	1.8990	1.8990	1.1000e-004	0.0000	1.9012
Total	**0.0116**	**0.1453**	**0.1303**	**3.8000e-004**	**0.0102**	**1.9100e-003**	**0.0121**	**2.7900e-003**	**1.7500e-003**	**4.5300e-003**	**0.0000**	**35.0220**	**35.0220**	**3.6000e-004**	**0.0000**	**35.0294**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1039	0.0000	0.1039	0.0157	0.0000	0.0157	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0643	0.7494	0.4957	6.8000e-004		0.0341	0.0341		0.0314	0.0314	0.0000	63.9222	63.9222	0.0193	0.0000	64.3271
Total	**0.0643**	**0.7494**	**0.4957**	**6.8000e-004**	**0.1039**	**0.0341**	**0.1380**	**0.0157**	**0.0314**	**0.0471**	**0.0000**	**63.9222**	**63.9222**	**0.0193**	**0.0000**	**64.3271**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0107	0.1440	0.1177	3.6000e-004	8.1000e-003	1.8900e-003	9.9800e-003	2.2300e-003	1.7300e-003	3.9600e-003	0.0000	33.1230	33.1230	2.5000e-004	0.0000	33.1282
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	1.3000e-003	0.0126	2.0000e-005	2.0900e-003	2.0000e-005	2.1100e-003	5.6000e-004	2.0000e-005	5.7000e-004	0.0000	1.8990	1.8990	1.1000e-004	0.0000	1.9012
Total	**0.0116**	**0.1453**	**0.1303**	**3.8000e-004**	**0.0102**	**1.9100e-003**	**0.0121**	**2.7900e-003**	**1.7500e-003**	**4.5300e-003**	**0.0000**	**35.0220**	**35.0220**	**3.6000e-004**	**0.0000**	**35.0294**

3.3 Excavation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3884	0.0000	0.3884	0.2135	0.0000	0.2135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1153	1.2357	0.9312	9.0000e-004		0.0676	0.0676		0.0622	0.0622	0.0000	85.1795	85.1795	0.0257	0.0000	85.7191
Total	**0.1153**	**1.2357**	**0.9312**	**9.0000e-004**	**0.3884**	**0.0676**	**0.4561**	**0.2135**	**0.0622**	**0.2757**	**0.0000**	**85.1795**	**85.1795**	**0.0257**	**0.0000**	**85.7191**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.6000e-004	3.5200e-003	1.0000e-005	5.9000e-004	1.0000e-005	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5325	0.5325	3.0000e-005	0.0000	0.5332
Total	**2.5000e-004**	**3.6000e-004**	**3.5200e-003**	**1.0000e-005**	**5.9000e-004**	**1.0000e-005**	**5.9000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5325**	**0.5325**	**3.0000e-005**	**0.0000**	**0.5332**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3884	0.0000	0.3884	0.2135	0.0000	0.2135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1153	1.2357	0.9312	9.0000e-004		0.0676	0.0676		0.0622	0.0622	0.0000	85.1794	85.1794	0.0257	0.0000	85.7190
Total	**0.1153**	**1.2357**	**0.9312**	**9.0000e-004**	**0.3884**	**0.0676**	**0.4561**	**0.2135**	**0.0622**	**0.2757**	**0.0000**	**85.1794**	**85.1794**	**0.0257**	**0.0000**	**85.7190**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.6000e-004	3.5200e-003	1.0000e-005	5.9000e-004	1.0000e-005	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5325	0.5325	3.0000e-005	0.0000	0.5332
Total	**2.5000e-004**	**3.6000e-004**	**3.5200e-003**	**1.0000e-005**	**5.9000e-004**	**1.0000e-005**	**5.9000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5325**	**0.5325**	**3.0000e-005**	**0.0000**	**0.5332**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					0.1295	0.0000	0.1295	0.0712	0.0000	0.0712	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1017	1.2362	0.5716	1.3400e-003		0.0491	0.0491		0.0451	0.0451	0.0000	126.5760	126.5760	0.0382	0.0000	127.3777
Total	**0.1017**	**1.2362**	**0.5716**	**1.3400e-003**	**0.1295**	**0.0491**	**0.1785**	**0.0712**	**0.0451**	**0.1163**	**0.0000**	**126.5760**	**126.5760**	**0.0382**	**0.0000**	**127.3777**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4800e-003	2.1900e-003	0.0211	4.0000e-005	3.5100e-003	3.0000e-005	3.5400e-003	9.3000e-004	3.0000e-005	9.6000e-004	0.0000	3.1952	3.1952	1.8000e-004	0.0000	3.1990
Total	**1.4800e-003**	**2.1900e-003**	**0.0211**	**4.0000e-005**	**3.5100e-003**	**3.0000e-005**	**3.5400e-003**	**9.3000e-004**	**3.0000e-005**	**9.6000e-004**	**0.0000**	**3.1952**	**3.1952**	**1.8000e-004**	**0.0000**	**3.1990**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1295	0.0000	0.1295	0.0712	0.0000	0.0712	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1017	1.2362	0.5716	1.3400e-003		0.0491	0.0491		0.0451	0.0451	0.0000	126.5758	126.5758	0.0382	0.0000	127.3776
Total	**0.1017**	**1.2362**	**0.5716**	**1.3400e-003**	**0.1295**	**0.0491**	**0.1785**	**0.0712**	**0.0451**	**0.1163**	**0.0000**	**126.5758**	**126.5758**	**0.0382**	**0.0000**	**127.3776**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4800e-003	2.1900e-003	0.0211	4.0000e-005	3.5100e-003	3.0000e-005	3.5400e-003	9.3000e-004	3.0000e-005	9.6000e-004	0.0000	3.1952	3.1952	1.8000e-004	0.0000	3.1990
Total	**1.4800e-003**	**2.1900e-003**	**0.0211**	**4.0000e-005**	**3.5100e-003**	**3.0000e-005**	**3.5400e-003**	**9.3000e-004**	**3.0000e-005**	**9.6000e-004**	**0.0000**	**3.1952**	**3.1952**	**1.8000e-004**	**0.0000**	**3.1990**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2921	0.1945	3.2000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	29.9011	29.9011	9.0200e-003	0.0000	30.0905
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2921**	**0.1945**	**3.2000e-004**		**0.0124**	**0.0124**		**0.0114**	**0.0114**	**0.0000**	**29.9011**	**29.9011**	**9.0200e-003**	**0.0000**	**30.0905**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	9.3000e-004	9.0100e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3623	1.3623	8.0000e-005	0.0000	1.3639
Total	**6.3000e-004**	**9.3000e-004**	**9.0100e-003**	**2.0000e-005**	**1.5000e-003**	**1.0000e-005**	**1.5100e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.3623**	**1.3623**	**8.0000e-005**	**0.0000**	**1.3639**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2921	0.1945	3.2000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	29.9011	29.9011	9.0200e-003	0.0000	30.0905
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2921**	**0.1945**	**3.2000e-004**		**0.0124**	**0.0124**		**0.0114**	**0.0114**	**0.0000**	**29.9011**	**29.9011**	**9.0200e-003**	**0.0000**	**30.0905**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	9.3000e-004	9.0100e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3623	1.3623	8.0000e-005	0.0000	1.3639

Total	**6.3000e-004**	**9.3000e-004**	**9.0100e-003**	**2.0000e-005**	**1.5000e-003**	**1.0000e-005**	**1.5100e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.3623**	**1.3623**	**8.0000e-005**	**0.0000**	**1.3639**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.9400e-003	0.0137	0.0516	9.0000e-005	6.1600e-003	1.7000e-004	6.3300e-003	1.6500e-003	1.6000e-004	1.8100e-003	0.0000	7.3887	7.3887	2.9000e-004	0.0000	7.3948
Unmitigated	4.9400e-003	0.0137	0.0516	9.0000e-005	6.1600e-003	1.7000e-004	6.3300e-003	1.6500e-003	1.6000e-004	1.8100e-003	0.0000	7.3887	7.3887	2.9000e-004	0.0000	7.3948

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	7.71	7.71	7.71	16,463	16,463
Total	7.71	7.71	7.71	16,463	16,463

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9353	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Unmitigated	0.9353	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1102					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8251					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Total	**0.9353**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**9.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1102					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8251					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Total	**0.9353**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**9.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.8838	2.7000e-004	6.0000e-005	5.9065
Unmitigated	5.8838	2.7000e-004	6.0000e-005	5.9065

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
City Park	0 / 5.77868	5.8838	2.7000e-004	6.0000e-005	5.9065
Total		**5.8838**	**2.7000e-004**	**6.0000e-005**	**5.9065**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 5.77868	5.8838	2.7000e-004	6.0000e-005	5.9065
Total		**5.8838**	**2.7000e-004**	**6.0000e-005**	**5.9065**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0853	5.0400e-003	0.0000	0.1911
Unmitigated	0.0853	5.0400e-003	0.0000	0.1911

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.42	0.0853	5.0400e-003	0.0000	0.1911
Total		**0.0853**	**5.0400e-003**	**0.0000**	**0.1911**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.42	0.0853	5.0400e-003	0.0000	0.1911
Total		**0.0853**	**5.0400e-003**	**0.0000**	**0.1911**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	4.85	Acre	4.85	211,266.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 1 lot acreage equals 10 but not sure how to break it up into 1a, 1b, etc.

Construction Phase - Per Phase 1 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab (281,404 SF minus 70,300 SF of parking lot A)

Grading - Per Phase Assumptions # tab (Material imported = 30,000 cy total divided by 5 Sub-phases in Phase 1 that include grading)

Cap-rated sq. ave footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	8.00	43.00
tblConstructionPhase	NumDays	18.00	22.00
tblConstructionPhase	NumDays	5.00	43.00
tblConstructionPhase	PhaseEndDate	12/29/2016	10/31/2016
tblConstructionPhase	PhaseStartDate	11/1/2016	9/1/2016
tblGrading	AcresOfGrading	43.00	0.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2017

tblTripsAndVMT	WorkerTripNumber	20.00	3.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	10.1810	115.0759	71.1211	0.1069	24.2864	5.4291	29.7155	13.2934	4.9948	18.2882	0.0000	11,062.6913	11,062.6913	3.2856	0.0000	11,131.6890
Total	**10.1810**	**115.0759**	**71.1211**	**0.1069**	**24.2864**	**5.4291**	**29.7155**	**13.2934**	**4.9948**	**18.2882**	**0.0000**	**11,062.6913**	**11,062.6913**	**3.2856**	**0.0000**	**11,131.6890**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	10.1810	115.0759	71.1211	0.1069	24.2864	5.4291	29.7155	13.2934	4.9948	18.2882	0.0000	11,062.6913	11,062.6913	3.2856	0.0000	11,131.6890
Total	**10.1810**	**115.0759**	**71.1211**	**0.1069**	**24.2864**	**5.4291**	**29.7155**	**13.2934**	**4.9948**	**18.2882**	**0.0000**	**11,062.6913**	**11,062.6913**	**3.2856**	**0.0000**	**11,131.6890**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.1248	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0600e-003	1.0600e-003	0.0000		1.1200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0276	0.0710	0.2601	5.5000e-004	0.0351	9.5000e-004	0.0361	9.4100e-003	8.7000e-004	0.0103		47.1306	47.1306	1.7500e-003		47.1674
Total	**5.1524**	**0.0710**	**0.2606**	**5.5000e-004**	**0.0351**	**9.5000e-004**	**0.0361**	**9.4100e-003**	**8.7000e-004**	**0.0103**		**47.1317**	**47.1317**	**1.7500e-003**	**0.0000**	**47.1685**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.1248	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0600e-003	1.0600e-003	0.0000		1.1200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0276	0.0710	0.2601	5.5000e-004	0.0351	9.5000e-004	0.0361	9.4100e-003	8.7000e-004	0.0103		47.1306	47.1306	1.7500e-003		47.1674
Total	**5.1524**	**0.0710**	**0.2606**	**5.5000e-004**	**0.0351**	**9.5000e-004**	**0.0361**	**9.4100e-003**	**8.7000e-004**	**0.0103**		**47.1317**	**47.1317**	**1.7500e-003**	**0.0000**	**47.1685**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2016	8/31/2016	5	23	
2	Excavation	Site Preparation	9/1/2016	10/31/2016	5	43	
3	Grading	Grading	9/1/2016	10/31/2016	5	43	
4	Paving	Paving	11/1/2016	11/30/2016	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37

Excavation	Rubber Tired Dozers	3	8.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	960.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	8	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0348	0.0000	9.0348	1.3680	0.0000	1.3680			0.0000			0.0000
Off-Road	5.5884	65.1687	43.1063	0.0590		2.9682	2.9682		2.7308	2.7308		6,127.1537	6,127.1537	1.8482		6,165.9652
Total	**5.5884**	**65.1687**	**43.1063**	**0.0590**	**9.0348**	**2.9682**	**12.0030**	**1.3680**	**2.7308**	**4.0987**		**6,127.1537**	**6,127.1537**	**1.8482**		**6,165.9652**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Hauling	0.8494	12.0728	7.8821	0.0315	0.7281	0.1637	0.8918	0.1994	0.1506	0.3500		3,178.0458	3,178.0458	0.0235		3,178.5396
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.9315**	**12.1724**	**9.0472**	**0.0339**	**0.9167**	**0.1653**	**1.0820**	**0.2494**	**0.1520**	**0.4015**		**3,374.1645**	**3,374.1645**	**0.0338**		**3,374.8747**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0348	0.0000	9.0348	1.3680	0.0000	1.3680			0.0000			0.0000
Off-Road	5.5884	65.1687	43.1063	0.0590		2.9682	2.9682		2.7308	2.7308	0.0000	6,127.1537	6,127.1537	1.8482		6,165.9652
Total	**5.5884**	**65.1687**	**43.1063**	**0.0590**	**9.0348**	**2.9682**	**12.0030**	**1.3680**	**2.7308**	**4.0987**	**0.0000**	**6,127.1537**	**6,127.1537**	**1.8482**		**6,165.9652**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8494	12.0728	7.8821	0.0315	0.7281	0.1637	0.8918	0.1994	0.1506	0.3500		3,178.0458	3,178.0458	0.0235		3,178.5396
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351

Total	**0.9315**	**12.1724**	**9.0472**	**0.0339**	**0.9167**	**0.1653**	**1.0820**	**0.2494**	**0.1520**	**0.4015**		**3,374.1645**	**3,374.1645**	**0.0338**		**3,374.8747**

3.3 Excavation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.3639	57.4722	43.3133	0.0420		3.1462	3.1462		2.8945	2.8945		4,367.1802	4,367.1802	1.3173		4,394.8435
Total	**5.3639**	**57.4722**	**43.3133**	**0.0420**	**18.0663**	**3.1462**	**21.2125**	**9.9307**	**2.8945**	**12.8252**		**4,367.1802**	**4,367.1802**	**1.3173**		**4,394.8435**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0123	0.0149	0.1748	3.5000e-004	0.0283	2.3000e-004	0.0285	7.5000e-003	2.1000e-004	7.7200e-003		29.4178	29.4178	1.5500e-003		29.4503
Total	**0.0123**	**0.0149**	**0.1748**	**3.5000e-004**	**0.0283**	**2.3000e-004**	**0.0285**	**7.5000e-003**	**2.1000e-004**	**7.7200e-003**		**29.4178**	**29.4178**	**1.5500e-003**		**29.4503**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.3639	57.4722	43.3133	0.0420		3.1462	3.1462		2.8945	2.8945	0.0000	4,367.1802	4,367.1802	1.3173		4,394.8435
Total	**5.3639**	**57.4722**	**43.3133**	**0.0420**	**18.0663**	**3.1462**	**21.2125**	**9.9307**	**2.8945**	**12.8252**	**0.0000**	**4,367.1802**	**4,367.1802**	**1.3173**		**4,394.8435**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0123	0.0149	0.1748	3.5000e-004	0.0283	2.3000e-004	0.0285	7.5000e-003	2.1000e-004	7.7200e-003		29.4178	29.4178	1.5500e-003		29.4503
Total	**0.0123**	**0.0149**	**0.1748**	**3.5000e-004**	**0.0283**	**2.3000e-004**	**0.0285**	**7.5000e-003**	**2.1000e-004**	**7.7200e-003**		**29.4178**	**29.4178**	**1.5500e-003**		**29.4503**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	4.7308	57.4992	26.5844	0.0625		2.2813	2.2813		2.0988	2.0988		6,489.5865	6,489.5865	1.9575		6,530.6937

Total	**4.7308**	**57.4992**	**26.5844**	**0.0625**	**6.0221**	**2.2813**	**8.3034**	**3.3102**	**2.0988**	**5.4090**		**6,489.5865**	**6,489.5865**	**1.9575**		**6,530.6937**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.0739**	**0.0896**	**1.0486**	**2.1000e-003**	**0.1698**	**1.4000e-003**	**0.1711**	**0.0450**	**1.2800e-003**	**0.0463**		**176.5068**	**176.5068**	**9.2700e-003**		**176.7016**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	4.7308	57.4992	26.5844	0.0625		2.2813	2.2813		2.0988	2.0988	0.0000	6,489.5865	6,489.5865	1.9575		6,530.6937
Total	**4.7308**	**57.4992**	**26.5844**	**0.0625**	**6.0221**	**2.2813**	**8.3034**	**3.3102**	**2.0988**	**5.4090**	**0.0000**	**6,489.5865**	**6,489.5865**	**1.9575**		**6,530.6937**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.0739**	**0.0896**	**1.0486**	**2.1000e-003**	**0.1698**	**1.4000e-003**	**0.1711**	**0.0450**	**1.2800e-003**	**0.0463**		**176.5068**	**176.5068**	**9.2700e-003**		**176.7016**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1102	26.5500	17.6842	0.0289		1.1281	1.1281		1.0379	1.0379		2,996.3939	2,996.3939	0.9038		3,015.3741
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1102**	**26.5500**	**17.6842**	**0.0289**		**1.1281**	**1.1281**		**1.0379**	**1.0379**		**2,996.3939**	**2,996.3939**	**0.9038**		**3,015.3741**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0616	0.0747	0.8738	1.7500e-003	0.1415	1.1600e-003	0.1426	0.0375	1.0700e-003	0.0386		147.0890	147.0890	7.7300e-003		147.2513
Total	**0.0616**	**0.0747**	**0.8738**	**1.7500e-003**	**0.1415**	**1.1600e-003**	**0.1426**	**0.0375**	**1.0700e-003**	**0.0386**		**147.0890**	**147.0890**	**7.7300e-003**		**147.2513**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1102	26.5500	17.6842	0.0289		1.1281	1.1281		1.0379	1.0379	0.0000	2,996.3939	2,996.3939	0.9038		3,015.3741
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1102**	**26.5500**	**17.6842**	**0.0289**		**1.1281**	**1.1281**		**1.0379**	**1.0379**	**0.0000**	**2,996.3939**	**2,996.3939**	**0.9038**		**3,015.3741**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0747	0.8738	1.7500e-003	0.1415	1.1600e-003	0.1426	0.0375	1.0700e-003	0.0386		147.0890	147.0890	7.7300e-003		147.2513
Total	**0.0616**	**0.0747**	**0.8738**	**1.7500e-003**	**0.1415**	**1.1600e-003**	**0.1426**	**0.0375**	**1.0700e-003**	**0.0386**		**147.0890**	**147.0890**	**7.7300e-003**		**147.2513**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0276	0.0710	0.2601	5.5000e-004	0.0351	9.5000e-004	0.0361	9.4100e-003	8.7000e-004	0.0103		47.1306	47.1306	1.7500e-003		47.1674
Unmitigated	0.0276	0.0710	0.2601	5.5000e-004	0.0351	9.5000e-004	0.0361	9.4100e-003	8.7000e-004	0.0103		47.1306	47.1306	1.7500e-003		47.1674

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	7.71	7.71	7.71	16,463	16,463
Total	7.71	7.71	7.71	16,463	16,463

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.1248	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0600e-003	1.0600e-003	0.0000		1.1200e-003
Unmitigated	5.1248	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0600e-003	1.0600e-003	0.0000		1.1200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.5211					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0600e-003	1.0600e-003	0.0000		1.1200e-003
Total	**5.1248**	**0.0000**	**5.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.0600e-003**	**1.0600e-003**	**0.0000**		**1.1200e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.5211					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0600e-003	1.0600e-003	0.0000		1.1200e-003
Total	**5.1248**	**0.0000**	**5.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.0600e-003**	**1.0600e-003**	**0.0000**		**1.1200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.00	24,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 1 lot acreage equals 10 but not sure how to break it up into 1a, 1b, etc.

Construction Phase - Per Phase 1 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 11,000 cy total divided by 6 Sub-phases in Phase 1)

Converted sq. ft. to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	87.00
tblLandUse	LandUseSquareFeet	0.00	24,300.00

tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.0908	1.0078	0.5189	1.3700e-003	3.7900e-003	0.0399	0.0437	1.0300e-003	0.0380	0.0391	0.0000	132.6805	132.6805	0.0178	0.0000	133.0540
2017	0.0288	0.3113	0.1717	4.6000e-004	1.2800e-003	0.0124	0.0137	3.5000e-004	0.0118	0.0122	0.0000	44.6059	44.6059	5.9400e-003	0.0000	44.7306
Total	**0.1196**	**1.3191**	**0.6906**	**1.8300e-003**	**5.0700e-003**	**0.0523**	**0.0574**	**1.3800e-003**	**0.0498**	**0.0512**	**0.0000**	**177.2863**	**177.2863**	**0.0237**	**0.0000**	**177.7846**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					

2016	0.0908	1.0078	0.5189	1.3700e-003	3.7900e-003	0.0399	0.0437	1.0300e-003	0.0380	0.0391	0.0000	132.6803	132.6803	0.0178	0.0000	133.0539
2017	0.0288	0.3113	0.1717	4.6000e-004	1.2800e-003	0.0124	0.0137	3.5000e-004	0.0118	0.0122	0.0000	44.6058	44.6058	5.9400e-003	0.0000	44.7305
Total	**0.1196**	**1.3191**	**0.6906**	**1.8300e-003**	**5.0700e-003**	**0.0523**	**0.0574**	**1.3800e-003**	**0.0498**	**0.0512**	**0.0000**	**177.2861**	**177.2861**	**0.0237**	**0.0000**	**177.7844**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1076	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1076**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Area	0.1076	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1076**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Renovation	Building Construction	10/1/2016	1/31/2017	5	87	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Renovation	Cranes	1	8.00	150	0.29
Building Renovation	Forklifts	1	6.00	150	0.20
Building Renovation	Generator Sets	1	6.00	400	0.74

Building Renovation	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Renovation	Welders	1	6.00	150	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Renovation	5	10.00	4.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Renovation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0880	0.9928	0.4826	1.3000e-003		0.0397	0.0397		0.0378	0.0378	0.0000	127.1641	127.1641	0.0176	0.0000	127.5340
Total	**0.0880**	**0.9928**	**0.4826**	**1.3000e-003**		**0.0397**	**0.0397**		**0.0378**	**0.0378**	**0.0000**	**127.1641**	**127.1641**	**0.0176**	**0.0000**	**127.5340**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	1.5600e-003	0.0132	0.0186	3.0000e-005	8.4000e-004	2.0000e-004	1.0400e-003	2.4000e-004	1.8000e-004	4.2000e-004	0.0000	2.8330	2.8330	2.0000e-005	0.0000	2.8335
Worker	1.2400e-003	1.8400e-003	0.0178	4.0000e-005	2.9500e-003	3.0000e-005	2.9800e-003	7.8000e-004	2.0000e-005	8.1000e-004	0.0000	2.6833	2.6833	1.5000e-004	0.0000	2.6865
Total	**2.8000e-003**	**0.0150**	**0.0364**	**7.0000e-005**	**3.7900e-003**	**2.3000e-004**	**4.0200e-003**	**1.0200e-003**	**2.0000e-004**	**1.2300e-003**	**0.0000**	**5.5164**	**5.5164**	**1.7000e-004**	**0.0000**	**5.5200**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0880	0.9928	0.4826	1.3000e-003		0.0397	0.0397		0.0378	0.0378	0.0000	127.1640	127.1640	0.0176	0.0000	127.5338
Total	**0.0880**	**0.9928**	**0.4826**	**1.3000e-003**		**0.0397**	**0.0397**		**0.0378**	**0.0378**	**0.0000**	**127.1640**	**127.1640**	**0.0176**	**0.0000**	**127.5338**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5600e-003	0.0132	0.0186	3.0000e-005	8.4000e-004	2.0000e-004	1.0400e-003	2.4000e-004	1.8000e-004	4.2000e-004	0.0000	2.8330	2.8330	2.0000e-005	0.0000	2.8335
Worker	1.2400e-003	1.8400e-003	0.0178	4.0000e-005	2.9500e-003	3.0000e-005	2.9800e-003	7.8000e-004	2.0000e-005	8.1000e-004	0.0000	2.6833	2.6833	1.5000e-004	0.0000	2.6865
Total	**2.8000e-003**	**0.0150**	**0.0364**	**7.0000e-005**	**3.7900e-003**	**2.3000e-004**	**4.0200e-003**	**1.0200e-003**	**2.0000e-004**	**1.2300e-003**	**0.0000**	**5.5164**	**5.5164**	**1.7000e-004**	**0.0000**	**5.5200**

3.2 Building Renovation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0279	0.3067	0.1603	4.4000e-004		0.0123	0.0123		0.0118	0.0118	0.0000	42.7895	42.7895	5.8800e-003	0.0000	42.9131
Total	**0.0279**	**0.3067**	**0.1603**	**4.4000e-004**		**0.0123**	**0.0123**		**0.0118**	**0.0118**	**0.0000**	**42.7895**	**42.7895**	**5.8800e-003**	**0.0000**	**42.9131**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9000e-004	3.9900e-003	6.0500e-003	1.0000e-005	2.8000e-004	6.0000e-005	3.4000e-004	8.0000e-005	5.0000e-005	1.4000e-004	0.0000	0.9428	0.9428	1.0000e-005	0.0000	0.9429
Worker	3.7000e-004	5.6000e-004	5.3400e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0100e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8736	0.8736	5.0000e-005	0.0000	0.8746
Total	**8.6000e-004**	**4.5500e-003**	**0.0114**	**2.0000e-005**	**1.2800e-003**	**7.0000e-005**	**1.3500e-003**	**3.5000e-004**	**6.0000e-005**	**4.1000e-004**	**0.0000**	**1.8164**	**1.8164**	**6.0000e-005**	**0.0000**	**1.8175**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.0279	0.3067	0.1603	4.4000e-004		0.0123	0.0123		0.0118	0.0118	0.0000	42.7894	42.7894	5.8800e-003	0.0000	42.9130
Total	**0.0279**	**0.3067**	**0.1603**	**4.4000e-004**		**0.0123**	**0.0123**		**0.0118**	**0.0118**	**0.0000**	**42.7894**	**42.7894**	**5.8800e-003**	**0.0000**	**42.9130**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9000e-004	3.9900e-003	6.0500e-003	1.0000e-005	2.8000e-004	6.0000e-005	3.4000e-004	8.0000e-005	5.0000e-005	1.4000e-004	0.0000	0.9428	0.9428	1.0000e-005	0.0000	0.9429
Worker	3.7000e-004	5.6000e-004	5.3400e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0100e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8736	0.8736	5.0000e-005	0.0000	0.8746
Total	**8.6000e-004**	**4.5500e-003**	**0.0114**	**2.0000e-005**	**1.2800e-003**	**7.0000e-005**	**1.3500e-003**	**3.5000e-004**	**6.0000e-005**	**4.1000e-004**	**0.0000**	**1.8164**	**1.8164**	**6.0000e-005**	**0.0000**	**1.8175**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1076	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.1076	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0127					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0949					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1076**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0127					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0949					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1076**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.00	24,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 1 lot acreage equals 10 but not sure how to break it up into 1a, 1b, etc.

Construction Phase - Per Phase 1 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 11,000 cy total divided by 6 Sub-phases in Phase 1)

Converted sq. ft. to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	87.00
tblLandUse	LandUseSquareFeet	0.00	24,300.00

tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	2.7897	30.9886	15.8552	0.0423	0.1210	1.2270	1.3480	0.0327	1.1699	1.2025	0.0000	4,507.5157	4,507.5157	0.6033	0.0000	4,520.1845
2017	2.6164	28.2801	15.4982	0.0423	0.1210	1.1273	1.2483	0.0327	1.0740	1.1066	0.0000	4,477.0520	4,477.0520	0.5951	0.0000	4,489.5498
Total	**5.4061**	**59.2687**	**31.3534**	**0.0845**	**0.2420**	**2.3543**	**2.5963**	**0.0653**	**2.2439**	**2.3091**	**0.0000**	**8,984.5677**	**8,984.5677**	**1.1984**	**0.0000**	**9,009.7344**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					

2016	2.7897	30.9886	15.8552	0.0423	0.1210	1.2270	1.3480	0.0327	1.1699	1.2025	0.0000	4,507.5157	4,507.5157	0.6033	0.0000	4,520.1845
2017	2.6164	28.2801	15.4982	0.0423	0.1210	1.1273	1.2483	0.0327	1.0740	1.1066	0.0000	4,477.0520	4,477.0520	0.5951	0.0000	4,489.5498
Total	**5.4061**	**59.2687**	**31.3534**	**0.0845**	**0.2420**	**2.3543**	**2.5963**	**0.0653**	**2.2439**	**2.3091**	**0.0000**	**8,984.5677**	**8,984.5677**	**1.1984**	**0.0000**	**9,009.7344**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5895	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.5895**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5895	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.5895**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Renovation	Building Construction	10/1/2016	1/31/2017	5	87	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Renovation	Cranes	1	8.00	150	0.29
Building Renovation	Forklifts	1	6.00	150	0.20
Building Renovation	Generator Sets	1	6.00	400	0.74
Building Renovation	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Renovation	Welders	1	6.00	150	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Renovation	5	10.00	4.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Renovation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7062	30.5476	14.8477	0.0402		1.2202	1.2202		1.1636	1.1636		4,313.0605	4,313.0605	0.5974		4,325.6050
Total	**2.7062**	**30.5476**	**14.8477**	**0.0402**		**1.2202**	**1.2202**		**1.1636**	**1.1636**		**4,313.0605**	**4,313.0605**	**0.5974**		**4,325.6050**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0425	0.3912	0.4249	9.6000e-004	0.0267	6.0600e-003	0.0328	7.6300e-003	5.5700e-003	0.0132		96.3959	96.3959	7.7000e-004		96.4120
Worker	0.0411	0.0498	0.5826	1.1700e-003	0.0943	7.8000e-004	0.0951	0.0250	7.1000e-004	0.0257		98.0593	98.0593	5.1500e-003		98.1675
Total	**0.0835**	**0.4410**	**1.0075**	**2.1300e-003**	**0.1210**	**6.8400e-003**	**0.1278**	**0.0326**	**6.2800e-003**	**0.0389**		**194.4552**	**194.4552**	**5.9200e-003**		**194.5796**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7062	30.5476	14.8477	0.0402		1.2202	1.2202		1.1636	1.1636	0.0000	4,313.0605	4,313.0605	0.5974		4,325.6050
Total	**2.7062**	**30.5476**	**14.8477**	**0.0402**		**1.2202**	**1.2202**		**1.1636**	**1.1636**	**0.0000**	**4,313.0605**	**4,313.0605**	**0.5974**		**4,325.6050**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0425	0.3912	0.4249	9.6000e-004	0.0267	6.0600e-003	0.0328	7.6300e-003	5.5700e-003	0.0132		96.3959	96.3959	7.7000e-004		96.4120
Worker	0.0411	0.0498	0.5826	1.1700e-003	0.0943	7.8000e-004	0.0951	0.0250	7.1000e-004	0.0257		98.0593	98.0593	5.1500e-003		98.1675
Total	**0.0835**	**0.4410**	**1.0075**	**2.1300e-003**	**0.1210**	**6.8400e-003**	**0.1278**	**0.0326**	**6.2800e-003**	**0.0389**		**194.4552**	**194.4552**	**5.9200e-003**		**194.5796**

3.2 Building Renovation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	2.5399	27.8850	14.5717	0.0401		1.1213	1.1213		1.0684	1.0684		4,287.9401	4,287.9401	0.5897		4,300.3238
Total	**2.5399**	**27.8850**	**14.5717**	**0.0401**		**1.1213**	**1.1213**		**1.0684**	**1.0684**		**4,287.9401**	**4,287.9401**	**0.5897**		**4,300.3238**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0399	0.3505	0.4059	9.6000e-004	0.0267	5.2500e-003	0.0319	7.6300e-003	4.8200e-003	0.0125		94.7773	94.7773	7.3000e-004		94.7926
Worker	0.0366	0.0446	0.5205	1.1700e-003	0.0943	7.4000e-004	0.0950	0.0250	6.8000e-004	0.0257		94.3347	94.3347	4.7000e-003		94.4334
Total	**0.0765**	**0.3951**	**0.9264**	**2.1300e-003**	**0.1210**	**5.9900e-003**	**0.1270**	**0.0326**	**5.5000e-003**	**0.0382**		**189.1119**	**189.1119**	**5.4300e-003**		**189.2260**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5399	27.8850	14.5717	0.0401		1.1213	1.1213		1.0684	1.0684	0.0000	4,287.9401	4,287.9401	0.5897		4,300.3238
Total	**2.5399**	**27.8850**	**14.5717**	**0.0401**		**1.1213**	**1.1213**		**1.0684**	**1.0684**	**0.0000**	**4,287.9401**	**4,287.9401**	**0.5897**		**4,300.3238**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0399	0.3505	0.4059	9.6000e-004	0.0267	5.2500e-003	0.0319	7.6300e-003	4.8200e-003	0.0125		94.7773	94.7773	7.3000e-004		94.7926
Worker	0.0366	0.0446	0.5205	1.1700e-003	0.0943	7.4000e-004	0.0950	0.0250	6.8000e-004	0.0257		94.3347	94.3347	4.7000e-003		94.4334
Total	**0.0765**	**0.3951**	**0.9264**	**2.1300e-003**	**0.1210**	**5.9900e-003**	**0.1270**	**0.0326**	**5.5000e-003**	**0.0382**		**189.1119**	**189.1119**	**5.4300e-003**		**189.2260**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	lb/day										lb/day					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5895	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.5895	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5200					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.5895**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.5200					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Architectural Coating	0.0694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5895**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.08	3,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 1 lot acreage equals 10 but not sure how to break it up into 1a, 1b, etc.

Construction Phase - Per Phase 1 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,000 cy total divided by 5 Sub-phases in Phase 1)

Con. acted sq. ure footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	2.00	43.00
tblConstructionPhase	NumDays	5.00	22.00
tblConstructionPhase	NumDays	1.00	43.00
tblConstructionPhase	PhaseEndDate	12/29/2016	10/31/2016
tblConstructionPhase	PhaseStartDate	11/1/2016	9/1/2016
tblGrading	AcresOfGrading	43.00	0.08
tblGrading	MaterialImported	0.00	6,000.00
tblLandUse	LandUseSquareFeet	0.00	3,400.00
tblLandUse	LotAcreage	0.00	0.08
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00

tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.2503	2.8509	1.6883	3.1200e-003	0.1571	0.1270	0.2841	0.0765	0.1175	0.1940	0.0000	290.2162	290.2162	0.0757	0.0000	291.8058
Total	**0.2503**	**2.8509**	**1.6883**	**3.1200e-003**	**0.1571**	**0.1270**	**0.2841**	**0.0765**	**0.1175**	**0.1940**	**0.0000**	**290.2162**	**290.2162**	**0.0757**	**0.0000**	**291.8058**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	tons/yr										MT/yr					
2016	0.2503	2.8509	1.6883	3.1200e-003	0.1571	0.1270	0.2841	0.0765	0.1175	0.1940	0.0000	290.2159	290.2159	0.0757	0.0000	291.8054
Total	**0.2503**	**2.8509**	**1.6883**	**3.1200e-003**	**0.1571**	**0.1270**	**0.2841**	**0.0765**	**0.1175**	**0.1940**	**0.0000**	**290.2159**	**290.2159**	**0.0757**	**0.0000**	**291.8054**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0151	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0151**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0151	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0151**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2016	8/31/2016	5	23	
2	Excavation	Site Preparation	9/1/2016	10/31/2016	5	43	
3	Grading	Grading	9/1/2016	10/31/2016	5	43	
4	Paving	Paving	11/1/2016	11/30/2016	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.08

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	15.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	750.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6700e-003	0.0000	1.6700e-003	2.5000e-004	0.0000	2.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0643	0.7494	0.4957	6.8000e-004		0.0341	0.0341		0.0314	0.0314	0.0000	63.9223	63.9223	0.0193	0.0000	64.3272
Total	**0.0643**	**0.7494**	**0.4957**	**6.8000e-004**	**1.6700e-003**	**0.0341**	**0.0358**	**2.5000e-004**	**0.0314**	**0.0317**	**0.0000**	**63.9223**	**63.9223**	**0.0193**	**0.0000**	**64.3272**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7000e-004	2.2500e-003	1.8400e-003	1.0000e-005	1.3000e-004	3.0000e-005	1.6000e-004	3.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.5176	0.5176	0.0000	0.0000	0.5176
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	1.3000e-003	0.0126	2.0000e-005	2.0900e-003	2.0000e-005	2.1100e-003	5.6000e-004	2.0000e-005	5.7000e-004	0.0000	1.8990	1.8990	1.1000e-004	0.0000	1.9012
Total	**1.0500e-003**	**3.5500e-003**	**0.0144**	**3.0000e-005**	**2.2200e-003**	**5.0000e-005**	**2.2700e-003**	**5.9000e-004**	**5.0000e-005**	**6.3000e-004**	**0.0000**	**2.4165**	**2.4165**	**1.1000e-004**	**0.0000**	**2.4189**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					1.6700e-003	0.0000	1.6700e-003	2.5000e-004	0.0000	2.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0643	0.7494	0.4957	6.8000e-004		0.0341	0.0341		0.0314	0.0314	0.0000	63.9222	63.9222	0.0193	0.0000	64.3271
Total	**0.0643**	**0.7494**	**0.4957**	**6.8000e-004**	**1.6700e-003**	**0.0341**	**0.0358**	**2.5000e-004**	**0.0314**	**0.0317**	**0.0000**	**63.9222**	**63.9222**	**0.0193**	**0.0000**	**64.3271**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7000e-004	2.2500e-003	1.8400e-003	1.0000e-005	1.3000e-004	3.0000e-005	1.6000e-004	3.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.5176	0.5176	0.0000	0.0000	0.5176
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	1.3000e-003	0.0126	2.0000e-005	2.0900e-003	2.0000e-005	2.1100e-003	5.6000e-004	2.0000e-005	5.7000e-004	0.0000	1.8990	1.8990	1.1000e-004	0.0000	1.9012
Total	**1.0500e-003**	**3.5500e-003**	**0.0144**	**3.0000e-005**	**2.2200e-003**	**5.0000e-005**	**2.2700e-003**	**5.9000e-004**	**5.0000e-005**	**6.3000e-004**	**0.0000**	**2.4165**	**2.4165**	**1.1000e-004**	**0.0000**	**2.4189**

3.3 Excavation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0114	0.0000	0.0114	1.2300e-003	0.0000	1.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0354	0.3542	0.2053	2.6000e-004		0.0224	0.0224		0.0206	0.0206	0.0000	24.8733	24.8733	7.5000e-003	0.0000	25.0308
Total	**0.0354**	**0.3542**	**0.2053**	**2.6000e-004**	**0.0114**	**0.0224**	**0.0338**	**1.2300e-003**	**0.0206**	**0.0218**	**0.0000**	**24.8733**	**24.8733**	**7.5000e-003**	**0.0000**	**25.0308**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.6000e-004	3.5200e-003	1.0000e-005	5.9000e-004	1.0000e-005	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5325	0.5325	3.0000e-005	0.0000	0.5332
Total	**2.5000e-004**	**3.6000e-004**	**3.5200e-003**	**1.0000e-005**	**5.9000e-004**	**1.0000e-005**	**5.9000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5325**	**0.5325**	**3.0000e-005**	**0.0000**	**0.5332**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0114	0.0000	0.0114	1.2300e-003	0.0000	1.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0354	0.3542	0.2053	2.6000e-004		0.0224	0.0224		0.0206	0.0206	0.0000	24.8732	24.8732	7.5000e-003	0.0000	25.0308
Total	**0.0354**	**0.3542**	**0.2053**	**2.6000e-004**	**0.0114**	**0.0224**	**0.0338**	**1.2300e-003**	**0.0206**	**0.0218**	**0.0000**	**24.8732**	**24.8732**	**7.5000e-003**	**0.0000**	**25.0308**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.6000e-004	3.5200e-003	1.0000e-005	5.9000e-004	1.0000e-005	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5325	0.5325	3.0000e-005	0.0000	0.5332
Total	**2.5000e-004**	**3.6000e-004**	**3.5200e-003**	**1.0000e-005**	**5.9000e-004**	**1.0000e-005**	**5.9000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5325**	**0.5325**	**3.0000e-005**	**0.0000**	**0.5332**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1299	0.0000	0.1299	0.0712	0.0000	0.0712	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1156	1.3356	0.6527	1.4800e-003		0.0565	0.0565		0.0526	0.0526	0.0000	138.1356	138.1356	0.0393	0.0000	138.9609
Total	**0.1156**	**1.3356**	**0.6527**	**1.4800e-003**	**0.1299**	**0.0565**	**0.1864**	**0.0712**	**0.0526**	**0.1238**	**0.0000**	**138.1356**	**138.1356**	**0.0393**	**0.0000**	**138.9609**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.3700e-003	0.1125	0.0920	2.8000e-004	6.3300e-003	1.4700e-003	7.8000e-003	1.7400e-003	1.3500e-003	3.0900e-003	0.0000	25.8774	25.8774	1.9000e-004	0.0000	25.8814
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4800e-003	2.1900e-003	0.0211	4.0000e-005	3.5100e-003	3.0000e-005	3.5400e-003	9.3000e-004	3.0000e-005	9.6000e-004	0.0000	3.1952	3.1952	1.8000e-004	0.0000	3.1990

Total	**9.8500e-003**	**0.1147**	**0.1131**	**3.2000e-004**	**9.8400e-003**	**1.5000e-003**	**0.0113**	**2.6700e-003**	**1.3800e-003**	**4.0500e-003**	**0.0000**	**29.0726**	**29.0726**	**3.7000e-004**	**0.0000**	**29.0804**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1299	0.0000	0.1299	0.0712	0.0000	0.0712	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1156	1.3356	0.6527	1.4800e-003		0.0565	0.0565		0.0526	0.0526	0.0000	138.1354	138.1354	0.0393	0.0000	138.9607
Total	**0.1156**	**1.3356**	**0.6527**	**1.4800e-003**	**0.1299**	**0.0565**	**0.1864**	**0.0712**	**0.0526**	**0.1238**	**0.0000**	**138.1354**	**138.1354**	**0.0393**	**0.0000**	**138.9607**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.3700e-003	0.1125	0.0920	2.8000e-004	6.3300e-003	1.4700e-003	7.8000e-003	1.7400e-003	1.3500e-003	3.0900e-003	0.0000	25.8774	25.8774	1.9000e-004	0.0000	25.8814
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4800e-003	2.1900e-003	0.0211	4.0000e-005	3.5100e-003	3.0000e-005	3.5400e-003	9.3000e-004	3.0000e-005	9.6000e-004	0.0000	3.1952	3.1952	1.8000e-004	0.0000	3.1990
Total	**9.8500e-003**	**0.1147**	**0.1131**	**3.2000e-004**	**9.8400e-003**	**1.5000e-003**	**0.0113**	**2.6700e-003**	**1.3800e-003**	**4.0500e-003**	**0.0000**	**29.0726**	**29.0726**	**3.7000e-004**	**0.0000**	**29.0804**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2921	0.1945	3.2000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	29.9011	29.9011	9.0200e-003	0.0000	30.0905
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2921**	**0.1945**	**3.2000e-004**		**0.0124**	**0.0124**		**0.0114**	**0.0114**	**0.0000**	**29.9011**	**29.9011**	**9.0200e-003**	**0.0000**	**30.0905**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	9.3000e-004	9.0100e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3623	1.3623	8.0000e-005	0.0000	1.3639
Total	**6.3000e-004**	**9.3000e-004**	**9.0100e-003**	**2.0000e-005**	**1.5000e-003**	**1.0000e-005**	**1.5100e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.3623**	**1.3623**	**8.0000e-005**	**0.0000**	**1.3639**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2921	0.1945	3.2000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	29.9011	29.9011	9.0200e-003	0.0000	30.0905
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.0232**	**0.2921**	**0.1945**	**3.2000e-004**		**0.0124**	**0.0124**		**0.0114**	**0.0114**	**0.0000**	**29.9011**	**29.9011**	**9.0200e-003**	**0.0000**	**30.0905**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	9.3000e-004	9.0100e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3623	1.3623	8.0000e-005	0.0000	1.3639
Total	**6.3000e-004**	**9.3000e-004**	**9.0100e-003**	**2.0000e-005**	**1.5000e-003**	**1.0000e-005**	**1.5100e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.3623**	**1.3623**	**8.0000e-005**	**0.0000**	**1.3639**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0151	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0151	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0151**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0151**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e

Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.08	3,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 1 lot acreage equals 10 but not sure how to break it up into 1a, 1b, etc.

Construction Phase - Per Phase 1 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,000 cy total divided by 5 Sub-phases in Phase 1)

Con. acted sq. ure footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	2.00	43.00
tblConstructionPhase	NumDays	5.00	22.00
tblConstructionPhase	NumDays	1.00	43.00
tblConstructionPhase	PhaseEndDate	12/29/2016	10/31/2016
tblConstructionPhase	PhaseStartDate	11/1/2016	9/1/2016
tblGrading	AcresOfGrading	43.00	0.08
tblGrading	MaterialImported	0.00	6,000.00
tblLandUse	LandUseSquareFeet	0.00	3,400.00
tblLandUse	LotAcreage	0.00	0.08
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00

tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	7.4647	83.7456	44.4249	0.0966	7.0724	3.7399	10.8123	3.5059	3.4685	6.9744	0.0000	9,891.4711	9,891.4711	2.4202	0.0000	9,942.2944
Total	**7.4647**	**83.7456**	**44.4249**	**0.0966**	**7.0724**	**3.7399**	**10.8123**	**3.5059**	**3.4685**	**6.9744**	**0.0000**	**9,891.4711**	**9,891.4711**	**2.4202**	**0.0000**	**9,942.2944**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	lb/day										lb/day					
2016	7.4647	83.7456	44.4249	0.0966	7.0724	3.7399	10.8123	3.5059	3.4685	6.9744	0.0000	9,891.4711	9,891.4711	2.4202	0.0000	9,942.2944
Total	**7.4647**	**83.7456**	**44.4249**	**0.0966**	**7.0724**	**3.7399**	**10.8123**	**3.5059**	**3.4685**	**6.9744**	**0.0000**	**9,891.4711**	**9,891.4711**	**2.4202**	**0.0000**	**9,942.2944**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0825	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0825**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Area	0.0825	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0825**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2016	8/31/2016	5	23	
2	Excavation	Site Preparation	9/1/2016	10/31/2016	5	43	
3	Grading	Grading	9/1/2016	10/31/2016	5	43	
4	Paving	Paving	11/1/2016	11/30/2016	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.08

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37

Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	15.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	750.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Fugitive Dust					0.1455	0.0000	0.1455	0.0220	0.0000	0.0220			0.0000			0.0000
Off-Road	5.5884	65.1687	43.1063	0.0590		2.9682	2.9682		2.7308	2.7308		6,127.1537	6,127.1537	1.8482		6,165.9652
Total	**5.5884**	**65.1687**	**43.1063**	**0.0590**	**0.1455**	**2.9682**	**3.1137**	**0.0220**	**2.7308**	**2.7528**		**6,127.1537**	**6,127.1537**	**1.8482**		**6,165.9652**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0133	0.1886	0.1232	4.9000e-004	0.0114	2.5600e-003	0.0139	3.1200e-003	2.3500e-003	5.4700e-003		49.6570	49.6570	3.7000e-004		49.6647
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.0954**	**0.2882**	**1.2883**	**2.8300e-003**	**0.2000**	**4.1100e-003**	**0.2041**	**0.0531**	**3.7700e-003**	**0.0569**		**245.7757**	**245.7757**	**0.0107**		**245.9998**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1455	0.0000	0.1455	0.0220	0.0000	0.0220			0.0000			0.0000
Off-Road	5.5884	65.1687	43.1063	0.0590		2.9682	2.9682		2.7308	2.7308	0.0000	6,127.1537	6,127.1537	1.8482		6,165.9652
Total	**5.5884**	**65.1687**	**43.1063**	**0.0590**	**0.1455**	**2.9682**	**3.1137**	**0.0220**	**2.7308**	**2.7528**	**0.0000**	**6,127.1537**	**6,127.1537**	**1.8482**		**6,165.9652**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0133	0.1886	0.1232	4.9000e-004	0.0114	2.5600e-003	0.0139	3.1200e-003	2.3500e-003	5.4700e-003		49.6570	49.6570	3.7000e-004		49.6647
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.0954**	**0.2882**	**1.2883**	**2.8300e-003**	**0.2000**	**4.1100e-003**	**0.2041**	**0.0531**	**3.7700e-003**	**0.0569**		**245.7757**	**245.7757**	**0.0107**		**245.9998**

3.3 Excavation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.6462	16.4748	9.5482	0.0123		1.0413	1.0413		0.9580	0.9580		1,275.2592	1,275.2592	0.3847		1,283.3371
Total	**1.6462**	**16.4748**	**9.5482**	**0.0123**	**0.5303**	**1.0413**	**1.5716**	**0.0573**	**0.9580**	**1.0153**		**1,275.2592**	**1,275.2592**	**0.3847**		**1,283.3371**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0123	0.0149	0.1748	3.5000e-004	0.0283	2.3000e-004	0.0285	7.5000e-003	2.1000e-004	7.7200e-003		29.4178	29.4178	1.5500e-003		29.4503
Total	**0.0123**	**0.0149**	**0.1748**	**3.5000e-004**	**0.0283**	**2.3000e-004**	**0.0285**	**7.5000e-003**	**2.1000e-004**	**7.7200e-003**		**29.4178**	**29.4178**	**1.5500e-003**		**29.4503**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.6462	16.4748	9.5482	0.0123		1.0413	1.0413		0.9580	0.9580	0.0000	1,275.2592	1,275.2592	0.3847		1,283.3371
Total	**1.6462**	**16.4748**	**9.5482**	**0.0123**	**0.5303**	**1.0413**	**1.5716**	**0.0573**	**0.9580**	**1.0153**	**0.0000**	**1,275.2592**	**1,275.2592**	**0.3847**		**1,283.3371**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0123	0.0149	0.1748	3.5000e-004	0.0283	2.3000e-004	0.0285	7.5000e-003	2.1000e-004	7.7200e-003		29.4178	29.4178	1.5500e-003		29.4503

Total	**0.0123**	**0.0149**	**0.1748**	**3.5000e-004**	**0.0283**	**2.3000e-004**	**0.0285**	**7.5000e-003**	**2.1000e-004**	**7.7200e-003**		**29.4178**	**29.4178**	**1.5500e-003**		**29.4503**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0398	0.0000	6.0398	3.3128	0.0000	3.3128			0.0000			0.0000
Off-Road	5.3774	62.1212	30.3596	0.0687		2.6285	2.6285		2.4460	2.4460		7,082.2521	7,082.2521	2.0149		7,124.5639
Total	**5.3774**	**62.1212**	**30.3596**	**0.0687**	**6.0398**	**2.6285**	**8.6684**	**3.3128**	**2.4460**	**5.7589**		**7,082.2521**	**7,082.2521**	**2.0149**		**7,124.5639**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3549	5.0450	3.2938	0.0132	0.3043	0.0684	0.3727	0.0833	0.0629	0.1463		1,328.0351	1,328.0351	9.8300e-003		1,328.2415
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.4289**	**5.1346**	**4.3424**	**0.0153**	**0.4740**	**0.0698**	**0.5438**	**0.1284**	**0.0642**	**0.1926**		**1,504.5419**	**1,504.5419**	**0.0191**		**1,504.9431**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0398	0.0000	6.0398	3.3128	0.0000	3.3128			0.0000			0.0000
Off-Road	5.3774	62.1212	30.3596	0.0687		2.6285	2.6285		2.4460	2.4460	0.0000	7,082.2521	7,082.2521	2.0149		7,124.5639
Total	**5.3774**	**62.1212**	**30.3596**	**0.0687**	**6.0398**	**2.6285**	**8.6684**	**3.3128**	**2.4460**	**5.7589**	**0.0000**	**7,082.2521**	**7,082.2521**	**2.0149**		**7,124.5639**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3549	5.0450	3.2938	0.0132	0.3043	0.0684	0.3727	0.0833	0.0629	0.1463		1,328.0351	1,328.0351	9.8300e-003		1,328.2415
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.4289**	**5.1346**	**4.3424**	**0.0153**	**0.4740**	**0.0698**	**0.5438**	**0.1284**	**0.0642**	**0.1926**		**1,504.5419**	**1,504.5419**	**0.0191**		**1,504.9431**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1102	26.5500	17.6842	0.0289		1.1281	1.1281		1.0379	1.0379		2,996.3939	2,996.3939	0.9038		3,015.3741
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**2.1102**	**26.5500**	**17.6842**	**0.0289**		**1.1281**	**1.1281**		**1.0379**	**1.0379**		**2,996.3939**	**2,996.3939**	**0.9038**		**3,015.3741**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0747	0.8738	1.7500e-003	0.1415	1.1600e-003	0.1426	0.0375	1.0700e-003	0.0386		147.0890	147.0890	7.7300e-003		147.2513
Total	**0.0616**	**0.0747**	**0.8738**	**1.7500e-003**	**0.1415**	**1.1600e-003**	**0.1426**	**0.0375**	**1.0700e-003**	**0.0386**		**147.0890**	**147.0890**	**7.7300e-003**		**147.2513**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1102	26.5500	17.6842	0.0289		1.1281	1.1281		1.0379	1.0379	0.0000	2,996.3939	2,996.3939	0.9038		3,015.3741
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1102**	**26.5500**	**17.6842**	**0.0289**		**1.1281**	**1.1281**		**1.0379**	**1.0379**	**0.0000**	**2,996.3939**	**2,996.3939**	**0.9038**		**3,015.3741**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0747	0.8738	1.7500e-003	0.1415	1.1600e-003	0.1426	0.0375	1.0700e-003	0.0386		147.0890	147.0890	7.7300e-003		147.2513
Total	**0.0616**	**0.0747**	**0.8738**	**1.7500e-003**	**0.1415**	**1.1600e-003**	**0.1426**	**0.0375**	**1.0700e-003**	**0.0386**		**147.0890**	**147.0890**	**7.7300e-003**		**147.2513**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles	Trip %	Trip Purpose %

Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0825	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0825	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0825**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0825**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	200.00	Space	1.80	70,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 1 lot acreage equals 10 but not sure how to break it up into 1a, 1b, etc.

Construction Phase - Per Phase 1 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,000 cy total divided by 5 Sub-phases in Phase 1)

Cap-rated sq. ara footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	PhaseEndDate	11/1/2016	8/31/2016
tblConstructionPhase	PhaseStartDate	9/1/2016	7/1/2016
tblGrading	AcresOfGrading	44.00	1.61
tblGrading	MaterialImported	0.00	6,000.00
tblLandUse	LandUseSquareFeet	80,000.00	70,300.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00

tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.2664	3.0687	1.8429	3.2800e-003	0.3126	0.1328	0.4453	0.1477	0.1221	0.2698	0.0000	306.0532	306.0532	0.0797	0.0000	307.7277
Total	**0.2664**	**3.0687**	**1.8429**	**3.2800e-003**	**0.3126**	**0.1328**	**0.4453**	**0.1477**	**0.1221**	**0.2698**	**0.0000**	**306.0532**	**306.0532**	**0.0797**	**0.0000**	**307.7277**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.2664	3.0687	1.8429	3.2800e-003	0.3126	0.1328	0.4453	0.1477	0.1221	0.2698	0.0000	306.0529	306.0529	0.0797	0.0000	307.7274

Total	**0.2664**	**3.0687**	**1.8429**	**3.2800e-003**	**0.3126**	**0.1328**	**0.4453**	**0.1477**	**0.1221**	**0.2698**	**0.0000**	**306.0529**	**306.0529**	**0.0797**	**0.0000**	**307.7274**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2758	2.0000e-005	1.8700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	17.9970	17.9970	8.1000e-004	1.7000e-004	18.0662
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2758**	**2.0000e-005**	**1.8700e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**18.0005**	**18.0005**	**8.2000e-004**	**1.7000e-004**	**18.0700**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Area	0.2758	2.0000e-005	1.8700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	17.9970	17.9970	8.1000e-004	1.7000e-004	18.0662
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2758**	**2.0000e-005**	**1.8700e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**18.0005**	**18.0005**	**8.2000e-004**	**1.7000e-004**	**18.0700**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2016	6/30/2016	5	22	
2	Excavation	Site Preparation	7/1/2016	8/31/2016	5	44	
3	Grading	Grading	7/1/2016	8/31/2016	5	44	
4	Paving	Paving	9/1/2016	9/30/2016	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.61

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73

Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Excavation	Graders	1	8.00	174	0.41
Excavation	Rubber Tired Dozers	1	7.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	320.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	750.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0346	0.0000	0.0346	5.2400e-003	0.0000	5.2400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0615	0.7169	0.4742	6.5000e-004		0.0327	0.0327		0.0300	0.0300	0.0000	61.1431	61.1431	0.0184	0.0000	61.5304
Total	**0.0615**	**0.7169**	**0.4742**	**6.5000e-004**	**0.0346**	**0.0327**	**0.0673**	**5.2400e-003**	**0.0300**	**0.0353**	**0.0000**	**61.1431**	**61.1431**	**0.0184**	**0.0000**	**61.5304**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5700e-003	0.0480	0.0392	1.2000e-004	2.7000e-003	6.3000e-004	3.3300e-003	7.4000e-004	5.8000e-004	1.3200e-003	0.0000	11.0410	11.0410	8.0000e-005	0.0000	11.0427
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	1.2400e-003	0.0120	2.0000e-005	2.0000e-003	2.0000e-005	2.0100e-003	5.3000e-004	2.0000e-005	5.5000e-004	0.0000	1.8164	1.8164	1.0000e-004	0.0000	1.8186
Total	**4.4100e-003**	**0.0492**	**0.0513**	**1.4000e-004**	**4.7000e-003**	**6.5000e-004**	**5.3400e-003**	**1.2700e-003**	**6.0000e-004**	**1.8700e-003**	**0.0000**	**12.8574**	**12.8574**	**1.8000e-004**	**0.0000**	**12.8613**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0346	0.0000	0.0346	5.2400e-003	0.0000	5.2400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0615	0.7169	0.4742	6.5000e-004		0.0327	0.0327		0.0300	0.0300	0.0000	61.1430	61.1430	0.0184	0.0000	61.5303
Total	**0.0615**	**0.7169**	**0.4742**	**6.5000e-004**	**0.0346**	**0.0327**	**0.0673**	**5.2400e-003**	**0.0300**	**0.0353**	**0.0000**	**61.1430**	**61.1430**	**0.0184**	**0.0000**	**61.5303**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5700e-003	0.0480	0.0392	1.2000e-004	2.7000e-003	6.3000e-004	3.3300e-003	7.4000e-004	5.8000e-004	1.3200e-003	0.0000	11.0410	11.0410	8.0000e-005	0.0000	11.0427
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	1.2400e-003	0.0120	2.0000e-005	2.0000e-003	2.0000e-005	2.0100e-003	5.3000e-004	2.0000e-005	5.5000e-004	0.0000	1.8164	1.8164	1.0000e-004	0.0000	1.8186
Total	**4.4100e-003**	**0.0492**	**0.0513**	**1.4000e-004**	**4.7000e-003**	**6.5000e-004**	**5.3400e-003**	**1.2700e-003**	**6.0000e-004**	**1.8700e-003**	**0.0000**	**12.8574**	**12.8574**	**1.8000e-004**	**0.0000**	**12.8613**

3.3 Excavation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1276	0.0000	0.1276	0.0650	0.0000	0.0650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0601	0.6295	0.4119	4.4000e-004		0.0353	0.0353		0.0325	0.0325	0.0000	41.5779	41.5779	0.0125	0.0000	41.8413
Total	**0.0601**	**0.6295**	**0.4119**	**4.4000e-004**	**0.1276**	**0.0353**	**0.1629**	**0.0650**	**0.0325**	**0.0975**	**0.0000**	**41.5779**	**41.5779**	**0.0125**	**0.0000**	**41.8413**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.7000e-004	3.6000e-003	1.0000e-005	6.0000e-004	1.0000e-005	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5449	0.5449	3.0000e-005	0.0000	0.5456
Total	**2.5000e-004**	**3.7000e-004**	**3.6000e-003**	**1.0000e-005**	**6.0000e-004**	**1.0000e-005**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5449**	**0.5449**	**3.0000e-005**	**0.0000**	**0.5456**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1276	0.0000	0.1276	0.0650	0.0000	0.0650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0601	0.6295	0.4119	4.4000e-004		0.0353	0.0353		0.0325	0.0325	0.0000	41.5778	41.5778	0.0125	0.0000	41.8412
Total	**0.0601**	**0.6295**	**0.4119**	**4.4000e-004**	**0.1276**	**0.0353**	**0.1629**	**0.0650**	**0.0325**	**0.0975**	**0.0000**	**41.5778**	**41.5778**	**0.0125**	**0.0000**	**41.8412**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.7000e-004	3.6000e-003	1.0000e-005	6.0000e-004	1.0000e-005	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5449	0.5449	3.0000e-005	0.0000	0.5456
Total	**2.5000e-004**	**3.7000e-004**	**3.6000e-003**	**1.0000e-005**	**6.0000e-004**	**1.0000e-005**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5449**	**0.5449**	**3.0000e-005**	**0.0000**	**0.5456**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1337	0.0000	0.1337	0.0730	0.0000	0.0730	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1041	1.2650	0.5849	1.3700e-003		0.0502	0.0502		0.0462	0.0462	0.0000	129.5196	129.5196	0.0391	0.0000	130.3400
Total	**0.1041**	**1.2650**	**0.5849**	**1.3700e-003**	**0.1337**	**0.0502**	**0.1839**	**0.0730**	**0.0462**	**0.1191**	**0.0000**	**129.5196**	**129.5196**	**0.0391**	**0.0000**	**130.3400**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.3700e-003	0.1125	0.0920	2.8000e-004	6.3300e-003	1.4700e-003	7.8000e-003	1.7400e-003	1.3500e-003	3.0900e-003	0.0000	25.8774	25.8774	1.9000e-004	0.0000	25.8814
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5200e-003	2.2400e-003	0.0216	4.0000e-005	3.5900e-003	3.0000e-005	3.6300e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.2695	3.2695	1.9000e-004	0.0000	3.2734
Total	**9.8900e-003**	**0.1148**	**0.1136**	**3.2000e-004**	**9.9200e-003**	**1.5000e-003**	**0.0114**	**2.7000e-003**	**1.3800e-003**	**4.0700e-003**	**0.0000**	**29.1469**	**29.1469**	**3.8000e-004**	**0.0000**	**29.1548**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1337	0.0000	0.1337	0.0730	0.0000	0.0730	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1041	1.2650	0.5849	1.3700e-003		0.0502	0.0502		0.0462	0.0462	0.0000	129.5194	129.5194	0.0391	0.0000	130.3399
Total	**0.1041**	**1.2650**	**0.5849**	**1.3700e-003**	**0.1337**	**0.0502**	**0.1839**	**0.0730**	**0.0462**	**0.1191**	**0.0000**	**129.5194**	**129.5194**	**0.0391**	**0.0000**	**130.3399**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.3700e-003	0.1125	0.0920	2.8000e-004	6.3300e-003	1.4700e-003	7.8000e-003	1.7400e-003	1.3500e-003	3.0900e-003	0.0000	25.8774	25.8774	1.9000e-004	0.0000	25.8814
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5200e-003	2.2400e-003	0.0216	4.0000e-005	3.5900e-003	3.0000e-005	3.6300e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.2695	3.2695	1.9000e-004	0.0000	3.2734
Total	**9.8900e-003**	**0.1148**	**0.1136**	**3.2000e-004**	**9.9200e-003**	**1.5000e-003**	**0.0114**	**2.7000e-003**	**1.3800e-003**	**4.0700e-003**	**0.0000**	**29.1469**	**29.1469**	**3.8000e-004**	**0.0000**	**29.1548**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.0232	0.2921	0.1945	3.2000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	29.9011	29.9011	9.0200e-003	0.0000	30.0905
Paving	2.3600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0256**	**0.2921**	**0.1945**	**3.2000e-004**		**0.0124**	**0.0124**		**0.0114**	**0.0114**	**0.0000**	**29.9011**	**29.9011**	**9.0200e-003**	**0.0000**	**30.0905**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	9.3000e-004	9.0100e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3623	1.3623	8.0000e-005	0.0000	1.3639
Total	**6.3000e-004**	**9.3000e-004**	**9.0100e-003**	**2.0000e-005**	**1.5000e-003**	**1.0000e-005**	**1.5100e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.3623**	**1.3623**	**8.0000e-005**	**0.0000**	**1.3639**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2921	0.1945	3.2000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	29.9011	29.9011	9.0200e-003	0.0000	30.0905
Paving	2.3600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0256**	**0.2921**	**0.1945**	**3.2000e-004**		**0.0124**	**0.0124**		**0.0114**	**0.0114**	**0.0000**	**29.9011**	**29.9011**	**9.0200e-003**	**0.0000**	**30.0905**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	9.3000e-004	9.0100e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3623	1.3623	8.0000e-005	0.0000	1.3639
Total	**6.3000e-004**	**9.3000e-004**	**9.0100e-003**	**2.0000e-005**	**1.5000e-003**	**1.0000e-005**	**1.5100e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.3623**	**1.3623**	**8.0000e-005**	**0.0000**	**1.3639**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	17.9970	17.9970	8.1000e-004	1.7000e-004	18.0662
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	17.9970	17.9970	8.1000e-004	1.7000e-004	18.0662
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	61864	17.9970	8.1000e-004	1.7000e-004	18.0662
Total		**17.9970**	**8.1000e-004**	**1.7000e-004**	**18.0662**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	61864	17.9970	8.1000e-004	1.7000e-004	18.0662
Total		**17.9970**	**8.1000e-004**	**1.7000e-004**	**18.0662**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2758	2.0000e-005	1.8700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7800e-003
Unmitigated	0.2758	2.0000e-005	1.8700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2746					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.8000e-004	2.0000e-005	1.8700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7800e-003
Total	**0.2758**	**2.0000e-005**	**1.8700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5700e-003**	**3.5700e-003**	**1.0000e-005**	**0.0000**	**3.7800e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2746					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.8000e-004	2.0000e-005	1.8700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7800e-003
Total	**0.2758**	**2.0000e-005**	**1.8700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5700e-003**	**3.5700e-003**	**1.0000e-005**	**0.0000**	**3.7800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000

Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	200.00	Space	1.80	70,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 1 lot acreage equals 10 but not sure how to break it up into 1a, 1b, etc.

Construction Phase - Per Phase 1 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,000 cy total divided by 5 Sub-phases in Phase 1)

Cap-rated sq. ave footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	PhaseEndDate	11/1/2016	8/31/2016
tblConstructionPhase	PhaseStartDate	9/1/2016	7/1/2016
tblGrading	AcresOfGrading	44.00	1.61
tblGrading	MaterialImported	0.00	6,000.00
tblLandUse	LandUseSquareFeet	80,000.00	70,300.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00

tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	7.8936	91.1457	49.7491	0.0978	12.3713	3.9558	16.3271	6.4044	3.6393	10.0437	0.0000	10,076.6258	10,076.6258	2.6063	0.0000	10,131.3581
Total	**7.8936**	**91.1457**	**49.7491**	**0.0978**	**12.3713**	**3.9558**	**16.3271**	**6.4044**	**3.6393**	**10.0437**	**0.0000**	**10,076.6258**	**10,076.6258**	**2.6063**	**0.0000**	**10,131.3581**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	7.8936	91.1457	49.7491	0.0978	12.3713	3.9558	16.3271	6.4044	3.6393	10.0437	0.0000	10,076.6258	10,076.6258	2.6063	0.0000	10,131.3581

Total	**7.8936**	**91.1457**	**49.7491**	**0.0978**	**12.3713**	**3.9558**	**16.3271**	**6.4044**	**3.6393**	**10.0437**	**0.0000**	**10,076.6258**	**10,076.6258**	**2.6063**	**0.0000**	**10,131.3581**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.5125	2.0000e-004	0.0208	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0438	0.0438	1.2000e-004		0.0463
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.5125**	**2.0000e-004**	**0.0208**	**0.0000**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**8.0000e-005**		**0.0438**	**0.0438**	**1.2000e-004**	**0.0000**	**0.0463**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.5125	2.0000e-004	0.0208	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0438	0.0438	1.2000e-004		0.0463
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.5125**	**2.0000e-004**	**0.0208**	**0.0000**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**8.0000e-005**		**0.0438**	**0.0438**	**1.2000e-004**	**0.0000**	**0.0463**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2016	6/30/2016	5	22	
2	Excavation	Site Preparation	7/1/2016	8/31/2016	5	44	
3	Grading	Grading	7/1/2016	8/31/2016	5	44	
4	Paving	Paving	9/1/2016	9/30/2016	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.61

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41

Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Excavation	Graders	1	8.00	174	0.41
Excavation	Rubber Tired Dozers	1	7.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	320.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	750.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1455	0.0000	3.1455	0.4763	0.0000	0.4763			0.0000			0.0000

Off-Road	5.5884	65.1687	43.1063	0.0590		2.9682	2.9682		2.7308	2.7308		6,127.1537	6,127.1537	1.8482		6,165.9652
Total	**5.5884**	**65.1687**	**43.1063**	**0.0590**	**3.1455**	**2.9682**	**6.1137**	**0.4763**	**2.7308**	**3.2070**		**6,127.1537**	**6,127.1537**	**1.8482**		**6,165.9652**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2960	4.2072	2.7468	0.0110	0.2537	0.0571	0.3108	0.0695	0.0525	0.1220		1,107.5008	1,107.5008	8.2000e-003		1,107.6729
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.3782**	**4.3068**	**3.9119**	**0.0133**	**0.4423**	**0.0586**	**0.5010**	**0.1195**	**0.0539**	**0.1734**		**1,303.6195**	**1,303.6195**	**0.0185**		**1,304.0080**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1455	0.0000	3.1455	0.4763	0.0000	0.4763			0.0000			0.0000
Off-Road	5.5884	65.1687	43.1063	0.0590		2.9682	2.9682		2.7308	2.7308	0.0000	6,127.1537	6,127.1537	1.8482		6,165.9652
Total	**5.5884**	**65.1687**	**43.1063**	**0.0590**	**3.1455**	**2.9682**	**6.1137**	**0.4763**	**2.7308**	**3.2070**	**0.0000**	**6,127.1537**	**6,127.1537**	**1.8482**		**6,165.9652**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2960	4.2072	2.7468	0.0110	0.2537	0.0571	0.3108	0.0695	0.0525	0.1220		1,107.5008	1,107.5008	8.2000e-003		1,107.6729
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.3782**	**4.3068**	**3.9119**	**0.0133**	**0.4423**	**0.0586**	**0.5010**	**0.1195**	**0.0539**	**0.1734**		**1,303.6195**	**1,303.6195**	**0.0185**		**1,304.0080**

3.3 Excavation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	2.7297	28.6117	18.7225	0.0200		1.6060	1.6060		1.4776	1.4776		2,083.2622	2,083.2622	0.6284		2,096.4583
Total	**2.7297**	**28.6117**	**18.7225**	**0.0200**	**5.7996**	**1.6060**	**7.4056**	**2.9537**	**1.4776**	**4.4313**		**2,083.2622**	**2,083.2622**	**0.6284**		**2,096.4583**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0123	0.0149	0.1748	3.5000e-004	0.0283	2.3000e-004	0.0285	7.5000e-003	2.1000e-004	7.7200e-003		29.4178	29.4178	1.5500e-003		29.4503
Total	**0.0123**	**0.0149**	**0.1748**	**3.5000e-004**	**0.0283**	**2.3000e-004**	**0.0285**	**7.5000e-003**	**2.1000e-004**	**7.7200e-003**		**29.4178**	**29.4178**	**1.5500e-003**		**29.4503**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	2.7297	28.6117	18.7225	0.0200		1.6060	1.6060		1.4776	1.4776	0.0000	2,083.2622	2,083.2622	0.6284		2,096.4583
Total	**2.7297**	**28.6117**	**18.7225**	**0.0200**	**5.7996**	**1.6060**	**7.4056**	**2.9537**	**1.4776**	**4.4313**	**0.0000**	**2,083.2622**	**2,083.2622**	**0.6284**		**2,096.4583**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0123	0.0149	0.1748	3.5000e-004	0.0283	2.3000e-004	0.0285	7.5000e-003	2.1000e-004	7.7200e-003		29.4178	29.4178	1.5500e-003		29.4503
Total	**0.0123**	**0.0149**	**0.1748**	**3.5000e-004**	**0.0283**	**2.3000e-004**	**0.0285**	**7.5000e-003**	**2.1000e-004**	**7.7200e-003**		**29.4178**	**29.4178**	**1.5500e-003**		**29.4503**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0763	0.0000	6.0763	3.3168	0.0000	3.3168			0.0000			0.0000
Off-Road	4.7308	57.4992	26.5844	0.0625		2.2813	2.2813		2.0988	2.0988		6,489.5865	6,489.5865	1.9575		6,530.6937
Total	**4.7308**	**57.4992**	**26.5844**	**0.0625**	**6.0763**	**2.2813**	**8.3576**	**3.3168**	**2.0988**	**5.4155**		**6,489.5865**	**6,489.5865**	**1.9575**		**6,530.6937**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3469	4.9303	3.2189	0.0129	0.2973	0.0669	0.3642	0.0814	0.0615	0.1429		1,297.8525	1,297.8525	9.6000e-003		1,298.0542
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.4208**	**5.0199**	**4.2675**	**0.0150**	**0.4671**	**0.0683**	**0.5354**	**0.1265**	**0.0628**	**0.1892**		**1,474.3593**	**1,474.3593**	**0.0189**		**1,474.7558**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					6.0763	0.0000	6.0763	3.3168	0.0000	3.3168			0.0000			0.0000
Off-Road	4.7308	57.4992	26.5844	0.0625		2.2813	2.2813		2.0988	2.0988	0.0000	6,489.5865	6,489.5865	1.9575		6,530.6937
Total	**4.7308**	**57.4992**	**26.5844**	**0.0625**	**6.0763**	**2.2813**	**8.3576**	**3.3168**	**2.0988**	**5.4155**	**0.0000**	**6,489.5865**	**6,489.5865**	**1.9575**		**6,530.6937**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3469	4.9303	3.2189	0.0129	0.2973	0.0669	0.3642	0.0814	0.0615	0.1429		1,297.8525	1,297.8525	9.6000e-003		1,298.0542
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.4208**	**5.0199**	**4.2675**	**0.0150**	**0.4671**	**0.0683**	**0.5354**	**0.1265**	**0.0628**	**0.1892**		**1,474.3593**	**1,474.3593**	**0.0189**		**1,474.7558**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1102	26.5500	17.6842	0.0289		1.1281	1.1281		1.0379	1.0379		2,996.3939	2,996.3939	0.9038		3,015.3741
Paving	0.2144					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3246**	**26.5500**	**17.6842**	**0.0289**		**1.1281**	**1.1281**		**1.0379**	**1.0379**		**2,996.3939**	**2,996.3939**	**0.9038**		**3,015.3741**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0747	0.8738	1.7500e-003	0.1415	1.1600e-003	0.1426	0.0375	1.0700e-003	0.0386		147.0890	147.0890	7.7300e-003		147.2513
Total	**0.0616**	**0.0747**	**0.8738**	**1.7500e-003**	**0.1415**	**1.1600e-003**	**0.1426**	**0.0375**	**1.0700e-003**	**0.0386**		**147.0890**	**147.0890**	**7.7300e-003**		**147.2513**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1102	26.5500	17.6842	0.0289		1.1281	1.1281		1.0379	1.0379	0.0000	2,996.3939	2,996.3939	0.9038		3,015.3741
Paving	0.2144					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3246**	**26.5500**	**17.6842**	**0.0289**		**1.1281**	**1.1281**		**1.0379**	**1.0379**	**0.0000**	**2,996.3939**	**2,996.3939**	**0.9038**		**3,015.3741**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0747	0.8738	1.7500e-003	0.1415	1.1600e-003	0.1426	0.0375	1.0700e-003	0.0386		147.0890	147.0890	7.7300e-003		147.2513
Total	**0.0616**	**0.0747**	**0.8738**	**1.7500e-003**	**0.1415**	**1.1600e-003**	**0.1426**	**0.0375**	**1.0700e-003**	**0.0386**		**147.0890**	**147.0890**	**7.7300e-003**		**147.2513**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5125	2.0000e-004	0.0208	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0438	0.0438	1.2000e-004		0.0463
Unmitigated	1.5125	2.0000e-004	0.0208	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0438	0.0438	1.2000e-004		0.0463

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Architectural Coating	6.0300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5044					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0100e-003	2.0000e-004	0.0208	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0438	0.0438	1.2000e-004		0.0463
Total	**1.5125**	**2.0000e-004**	**0.0208**	**0.0000**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**0.0438**	**0.0438**	**1.2000e-004**		**0.0463**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5044					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0100e-003	2.0000e-004	0.0208	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0438	0.0438	1.2000e-004		0.0463
Total	**1.5125**	**2.0000e-004**	**0.0208**	**0.0000**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**0.0438**	**0.0438**	**1.2000e-004**		**0.0463**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High Turnover (Sit Down Restaurant)	5.45	1000sqft	0.13	5,450.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 2 lot acreage equals 6 but not sure how to break it up into 2a, 2b, etc.

Construction Phase - Per Phase 2 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,900 (35,000 minus 4,100 shore protection) cy total divided by 4 Sub-phases in Phase 2)
Converted cy - cy factored to acres

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblConstructionPhase	NumDays	5.00	44.00
tblConstructionPhase	NumDays	100.00	175.00
tblConstructionPhase	NumDays	10.00	65.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	5.00	41.00
tblConstructionPhase	NumDays	1.00	43.00
tblConstructionPhase	PhaseEndDate	4/3/2019	1/31/2019
tblConstructionPhase	PhaseEndDate	3/30/2018	3/31/2018
tblConstructionPhase	PhaseEndDate	6/29/2018	5/31/2018
tblConstructionPhase	PhaseEndDate	3/29/2019	3/31/2019
tblConstructionPhase	PhaseEndDate	5/30/2018	4/30/2018
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	2/1/2019	12/1/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	4/1/2018
tblConstructionPhase	PhaseStartDate	4/1/2018	3/1/2018
tblGrading	AcresOfGrading	44.00	0.13
tblGrading	AcresOfGrading	43.00	0.00
tblGrading	MaterialImported	0.00	7,725.00
tblOffRoadEquipment	HorsePower	78.00	150.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	174.00	250.00
tblOffRoadEquipment	HorsePower	125.00	150.00

tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	97.00	350.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	255.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00

tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.5824	6.0257	3.8167	8.5600e-003	0.3506	0.2486	0.5992	0.1860	0.2319	0.4179	0.0000	790.8381	790.8381	0.1770	0.0000	794.5541
2019	0.1040	0.7390	0.6048	1.3200e-003	4.5500e-003	0.0332	0.0378	1.2100e-003	0.0311	0.0323	0.0000	119.9488	119.9488	0.0270	0.0000	120.5164
Total	**0.6864**	**6.7647**	**4.4215**	**9.8800e-003**	**0.3552**	**0.2818**	**0.6370**	**0.1872**	**0.2630**	**0.4502**	**0.0000**	**910.7869**	**910.7869**	**0.2040**	**0.0000**	**915.0705**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.5824	6.0257	3.8167	8.5600e-003	0.3506	0.2486	0.5992	0.1860	0.2319	0.4179	0.0000	790.8372	790.8372	0.1770	0.0000	794.5532
2019	0.1040	0.7390	0.6048	1.3200e-003	4.5500e-003	0.0332	0.0378	1.2100e-003	0.0311	0.0323	0.0000	119.9487	119.9487	0.0270	0.0000	120.5162

Total	**0.6864**	**6.7647**	**4.4215**	**9.8800e-003**	**0.3552**	**0.2818**	**0.6370**	**0.1872**	**0.2630**	**0.4502**	**0.0000**	**910.7859**	**910.7859**	**0.2040**	**0.0000**	**915.0694**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0241	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004
Energy	5.0000e-003	0.0454	0.0382	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	97.3890	97.3890	3.1200e-003	1.3600e-003	97.8745
Mobile	0.3283	0.6351	2.9992	4.9800e-003	0.3129	8.4600e-003	0.3213	0.0841	7.8000e-003	0.0919	0.0000	354.8231	354.8231	0.0133	0.0000	355.1017
Waste						0.0000	0.0000		0.0000	0.0000	13.1660	0.0000	13.1660	0.7781	0.0000	29.5058
Water						0.0000	0.0000		0.0000	0.0000	0.5248	2.7115	3.2363	0.0540	1.3000e-003	4.7733
Total	**0.3574**	**0.6805**	**3.0374**	**5.2500e-003**	**0.3129**	**0.0119**	**0.3248**	**0.0841**	**0.0113**	**0.0953**	**13.6908**	**454.9237**	**468.6145**	**0.8485**	**2.6600e-003**	**487.2555**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0241	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004

Energy	5.0000e-003	0.0454	0.0382	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	97.3890	97.3890	3.1200e-003	1.3600e-003	97.8745
Mobile	0.3283	0.6351	2.9992	4.9800e-003	0.3129	8.4600e-003	0.3213	0.0841	7.8000e-003	0.0919	0.0000	354.8231	354.8231	0.0133	0.0000	355.1017
Waste						0.0000	0.0000		0.0000	0.0000	13.1660	0.0000	13.1660	0.7781	0.0000	29.5058
Water						0.0000	0.0000		0.0000	0.0000	0.5248	2.7115	3.2363	0.0540	1.3000e-003	4.7725
Total	**0.3574**	**0.6805**	**3.0374**	**5.2500e-003**	**0.3129**	**0.0119**	**0.3248**	**0.0841**	**0.0113**	**0.0953**	**13.6908**	**454.9237**	**468.6145**	**0.8485**	**2.6600e-003**	**487.2546**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	3/31/2018	5	65	
2	Site Preparation	Site Preparation	3/1/2018	4/30/2018	5	43	
3	Grading	Grading	4/1/2018	5/31/2018	5	44	
4	Renovation	Building Construction	6/1/2018	1/31/2019	5	175	
5	Architectural Coatings	Architectural Coating	12/1/2018	1/31/2019	5	44	
6	Paving	Paving	2/1/2019	3/31/2019	5	41	
7	Landscaping	Trenching	4/1/2019	6/30/2019	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.13

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 8,175; Non-Residential Outdoor: 2,725 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Site Preparation	Graders	1	8.00	250	0.41
Site Preparation	Rubber Tired Dozers	3	4.00	350	0.40
Site Preparation	Scrapers	1	4.00	350	0.48
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	350	0.37
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Renovation	Cranes	1	8.00	150	0.29
Renovation	Forklifts	1	6.00	150	0.20
Renovation	Generator Sets	1	6.00	400	0.74
Renovation	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Renovation	Welders	1	6.00	150	0.45
Architectural Coatings	Air Compressors	1	8.00	150	0.48
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Site Preparation	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	966.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Renovation	5	2.00	1.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1508	1.6751	1.2046	1.9100e-003		0.0754	0.0754		0.0694	0.0694	0.0000	174.6122	174.6122	0.0544	0.0000	175.7537
Total	**0.1508**	**1.6751**	**1.2046**	**1.9100e-003**	**0.0000**	**0.0754**	**0.0754**	**0.0000**	**0.0694**	**0.0694**	**0.0000**	**174.6122**	**174.6122**	**0.0544**	**0.0000**	**175.7537**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	1.9500e-003	2.9600e-003	0.0282	7.0000e-005	5.9000e-003	5.0000e-005	5.9500e-003	1.5700e-003	4.0000e-005	1.6100e-003	0.0000	4.9705	4.9705	2.5000e-004	0.0000	4.9758
Total	**1.9500e-003**	**2.9600e-003**	**0.0282**	**7.0000e-005**	**5.9000e-003**	**5.0000e-005**	**5.9500e-003**	**1.5700e-003**	**4.0000e-005**	**1.6100e-003**	**0.0000**	**4.9705**	**4.9705**	**2.5000e-004**	**0.0000**	**4.9758**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1508	1.6751	1.2046	1.9100e-003		0.0754	0.0754		0.0694	0.0694	0.0000	174.6120	174.6120	0.0544	0.0000	175.7535
Total	**0.1508**	**1.6751**	**1.2046**	**1.9100e-003**	**0.0000**	**0.0754**	**0.0754**	**0.0000**	**0.0694**	**0.0694**	**0.0000**	**174.6120**	**174.6120**	**0.0544**	**0.0000**	**175.7535**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9500e-003	2.9600e-003	0.0282	7.0000e-005	5.9000e-003	5.0000e-005	5.9500e-003	1.5700e-003	4.0000e-005	1.6100e-003	0.0000	4.9705	4.9705	2.5000e-004	0.0000	4.9758
Total	**1.9500e-003**	**2.9600e-003**	**0.0282**	**7.0000e-005**	**5.9000e-003**	**5.0000e-005**	**5.9500e-003**	**1.5700e-003**	**4.0000e-005**	**1.6100e-003**	**0.0000**	**4.9705**	**4.9705**	**2.5000e-004**	**0.0000**	**4.9758**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1942	0.0000	0.1942	0.1068	0.0000	0.1068	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1071	1.2613	0.7548	1.4500e-003		0.0499	0.0499		0.0459	0.0459	0.0000	132.6295	132.6295	0.0413	0.0000	133.4966
Total	**0.1071**	**1.2613**	**0.7548**	**1.4500e-003**	**0.1942**	**0.0499**	**0.2441**	**0.1068**	**0.0459**	**0.1526**	**0.0000**	**132.6295**	**132.6295**	**0.0413**	**0.0000**	**133.4966**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2900e-003	1.9600e-003	0.0186	5.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	3.2882	3.2882	1.7000e-004	0.0000	3.2917
Total	**1.2900e-003**	**1.9600e-003**	**0.0186**	**5.0000e-005**	**3.9000e-003**	**3.0000e-005**	**3.9300e-003**	**1.0400e-003**	**3.0000e-005**	**1.0700e-003**	**0.0000**	**3.2882**	**3.2882**	**1.7000e-004**	**0.0000**	**3.2917**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1942	0.0000	0.1942	0.1068	0.0000	0.1068	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.1071	1.2613	0.7548	1.4500e-003		0.0499	0.0499		0.0459	0.0459	0.0000	132.6294	132.6294	0.0413	0.0000	133.4964
Total	**0.1071**	**1.2613**	**0.7548**	**1.4500e-003**	**0.1942**	**0.0499**	**0.2441**	**0.1068**	**0.0459**	**0.1526**	**0.0000**	**132.6294**	**132.6294**	**0.0413**	**0.0000**	**133.4964**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2900e-003	1.9600e-003	0.0186	5.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	3.2882	3.2882	1.7000e-004	0.0000	3.2917
Total	**1.2900e-003**	**1.9600e-003**	**0.0186**	**5.0000e-005**	**3.9000e-003**	**3.0000e-005**	**3.9300e-003**	**1.0400e-003**	**3.0000e-005**	**1.0700e-003**	**0.0000**	**3.2882**	**3.2882**	**1.7000e-004**	**0.0000**	**3.2917**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1330	0.0000	0.1330	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1007	1.0987	0.5748	1.5100e-003		0.0462	0.0462		0.0430	0.0430	0.0000	136.9458	136.9458	0.0399	0.0000	137.7830
Total	**0.1007**	**1.0987**	**0.5748**	**1.5100e-003**	**0.1330**	**0.0462**	**0.1792**	**0.0729**	**0.0430**	**0.1159**	**0.0000**	**136.9458**	**136.9458**	**0.0399**	**0.0000**	**137.7830**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0100	0.1180	0.1120	3.6000e-004	8.1500e-003	1.6600e-003	9.8100e-003	2.2400e-003	1.5200e-003	3.7600e-003	0.0000	32.1917	32.1917	2.4000e-004	0.0000	32.1967
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1900e-003	1.8000e-003	0.0172	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.0282	3.0282	1.6000e-004	0.0000	3.0314
Total	**0.0112**	**0.1198**	**0.1292**	**4.0000e-004**	**0.0117**	**1.6900e-003**	**0.0134**	**3.2000e-003**	**1.5500e-003**	**4.7400e-003**	**0.0000**	**35.2199**	**35.2199**	**4.0000e-004**	**0.0000**	**35.2282**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1330	0.0000	0.1330	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1007	1.0986	0.5748	1.5100e-003		0.0462	0.0462		0.0430	0.0430	0.0000	136.9457	136.9457	0.0399	0.0000	137.7829
Total	**0.1007**	**1.0986**	**0.5748**	**1.5100e-003**	**0.1330**	**0.0462**	**0.1792**	**0.0729**	**0.0430**	**0.1159**	**0.0000**	**136.9457**	**136.9457**	**0.0399**	**0.0000**	**137.7829**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0100	0.1180	0.1120	3.6000e-004	8.1500e-003	1.6600e-003	9.8100e-003	2.2400e-003	1.5200e-003	3.7600e-003	0.0000	32.1917	32.1917	2.4000e-004	0.0000	32.1967

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1900e-003	1.8000e-003	0.0172	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.0282	3.0282	1.6000e-004	0.0000	3.0314
Total	**0.0112**	**0.1198**	**0.1292**	**4.0000e-004**	**0.0117**	**1.6900e-003**	**0.0134**	**3.2000e-003**	**1.5500e-003**	**4.7400e-003**	**0.0000**	**35.2199**	**35.2199**	**4.0000e-004**	**0.0000**	**35.2282**

3.5 Renovation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1722	1.8159	1.0473	3.0500e-003		0.0730	0.0730		0.0697	0.0697	0.0000	293.5352	293.5352	0.0401	0.0000	294.3768
Total	**0.1722**	**1.8159**	**1.0473**	**3.0500e-003**		**0.0730**	**0.0730**		**0.0697**	**0.0697**	**0.0000**	**293.5352**	**293.5352**	**0.0401**	**0.0000**	**294.3768**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-004	6.2400e-003	0.0100	2.0000e-005	4.9000e-004	9.0000e-005	5.8000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.6004	1.6004	1.0000e-005	0.0000	1.6006
Worker	4.6000e-004	6.9000e-004	6.5800e-003	2.0000e-005	1.3800e-003	1.0000e-005	1.3900e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1623	1.1623	6.0000e-005	0.0000	1.1636
Total	**1.2600e-003**	**6.9300e-003**	**0.0166**	**4.0000e-005**	**1.8700e-003**	**1.0000e-004**	**1.9700e-003**	**5.1000e-004**	**1.0000e-004**	**6.1000e-004**	**0.0000**	**2.7627**	**2.7627**	**7.0000e-005**	**0.0000**	**2.7642**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1722	1.8159	1.0473	3.0500e-003		0.0730	0.0730		0.0697	0.0697	0.0000	293.5349	293.5349	0.0401	0.0000	294.3765
Total	**0.1722**	**1.8159**	**1.0473**	**3.0500e-003**		**0.0730**	**0.0730**		**0.0697**	**0.0697**	**0.0000**	**293.5349**	**293.5349**	**0.0401**	**0.0000**	**294.3765**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-004	6.2400e-003	0.0100	2.0000e-005	4.9000e-004	9.0000e-005	5.8000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.6004	1.6004	1.0000e-005	0.0000	1.6006
Worker	4.6000e-004	6.9000e-004	6.5800e-003	2.0000e-005	1.3800e-003	1.0000e-005	1.3900e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1623	1.1623	6.0000e-005	0.0000	1.1636
Total	**1.2600e-003**	**6.9300e-003**	**0.0166**	**4.0000e-005**	**1.8700e-003**	**1.0000e-004**	**1.9700e-003**	**5.1000e-004**	**1.0000e-004**	**6.1000e-004**	**0.0000**	**2.7627**	**2.7627**	**7.0000e-005**	**0.0000**	**2.7642**

3.5 Renovation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.0242	0.2446	0.1558	4.6000e-004		9.8600e-003	9.8600e-003		9.4100e-003	9.4100e-003	0.0000	44.1737	44.1737	6.0000e-003	0.0000	44.2997
Total	**0.0242**	**0.2446**	**0.1558**	**4.6000e-004**		**9.8600e-003**	**9.8600e-003**		**9.4100e-003**	**9.4100e-003**	**0.0000**	**44.1737**	**44.1737**	**6.0000e-003**	**0.0000**	**44.2997**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	8.6000e-004	1.4300e-003	0.0000	7.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2380	0.2380	0.0000	0.0000	0.2380
Worker	6.0000e-005	1.0000e-004	9.0000e-004	0.0000	2.1000e-004	0.0000	2.1000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1696	0.1696	1.0000e-005	0.0000	0.1697
Total	**1.7000e-004**	**9.6000e-004**	**2.3300e-003**	**0.0000**	**2.8000e-004**	**1.0000e-005**	**3.0000e-004**	**8.0000e-005**	**1.0000e-005**	**9.0000e-005**	**0.0000**	**0.4076**	**0.4076**	**1.0000e-005**	**0.0000**	**0.4078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0242	0.2446	0.1558	4.6000e-004		9.8600e-003	9.8600e-003		9.4100e-003	9.4100e-003	0.0000	44.1737	44.1737	6.0000e-003	0.0000	44.2997
Total	**0.0242**	**0.2446**	**0.1558**	**4.6000e-004**		**9.8600e-003**	**9.8600e-003**		**9.4100e-003**	**9.4100e-003**	**0.0000**	**44.1737**	**44.1737**	**6.0000e-003**	**0.0000**	**44.2997**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	8.6000e-004	1.4300e-003	0.0000	7.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2380	0.2380	0.0000	0.0000	0.2380
Worker	6.0000e-005	1.0000e-004	9.0000e-004	0.0000	2.1000e-004	0.0000	2.1000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1696	0.1696	1.0000e-005	0.0000	0.1697
Total	**1.7000e-004**	**9.6000e-004**	**2.3300e-003**	**0.0000**	**2.8000e-004**	**1.0000e-005**	**3.0000e-004**	**8.0000e-005**	**1.0000e-005**	**9.0000e-005**	**0.0000**	**0.4076**	**0.4076**	**1.0000e-005**	**0.0000**	**0.4078**

3.6 Architectural Coatings - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0301					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8000e-003	0.0430	0.0427	8.0000e-005		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003	0.0000	6.8741	6.8741	4.7000e-004	0.0000	6.8841
Total	**0.0359**	**0.0430**	**0.0427**	**8.0000e-005**		**2.2700e-003**	**2.2700e-003**		**2.2700e-003**	**2.2700e-003**	**0.0000**	**6.8741**	**6.8741**	**4.7000e-004**	**0.0000**	**6.8841**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0301					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8000e-003	0.0430	0.0427	8.0000e-005		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003	0.0000	6.8741	6.8741	4.7000e-004	0.0000	6.8840
Total	**0.0359**	**0.0430**	**0.0427**	**8.0000e-005**		**2.2700e-003**	**2.2700e-003**		**2.2700e-003**	**2.2700e-003**	**0.0000**	**6.8741**	**6.8741**	**4.7000e-004**	**0.0000**	**6.8840**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Architectural Coatings - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0330					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8600e-003	0.0420	0.0468	9.0000e-005		2.1900e-003	2.1900e-003		2.1900e-003	2.1900e-003	0.0000	7.5288	7.5288	4.8000e-004	0.0000	7.5388
Total	**0.0389**	**0.0420**	**0.0468**	**9.0000e-005**		**2.1900e-003**	**2.1900e-003**		**2.1900e-003**	**2.1900e-003**	**0.0000**	**7.5288**	**7.5288**	**4.8000e-004**	**0.0000**	**7.5388**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Archit. Coating	0.0330					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8600e-003	0.0420	0.0468	9.0000e-005		2.1900e-003	2.1900e-003		2.1900e-003	2.1900e-003	0.0000	7.5288	7.5288	4.8000e-004	0.0000	7.5388
Total	**0.0389**	**0.0420**	**0.0468**	**9.0000e-005**		**2.1900e-003**	**2.1900e-003**		**2.1900e-003**	**2.1900e-003**	**0.0000**	**7.5288**	**7.5288**	**4.8000e-004**	**0.0000**	**7.5388**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0302	0.3556	0.2889	5.9000e-004		0.0149	0.0149		0.0137	0.0137	0.0000	53.1563	53.1563	0.0168	0.0000	53.5095
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0302**	**0.3556**	**0.2889**	**5.9000e-004**		**0.0149**	**0.0149**		**0.0137**	**0.0137**	**0.0000**	**53.1563**	**53.1563**	**0.0168**	**0.0000**	**53.5095**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	1.2800e-003	0.0121	3.0000e-005	2.7900e-003	2.0000e-005	2.8100e-003	7.4000e-004	2.0000e-005	7.6000e-004	0.0000	2.2670	2.2670	1.1000e-004	0.0000	2.2694
Total	**8.4000e-004**	**1.2800e-003**	**0.0121**	**3.0000e-005**	**2.7900e-003**	**2.0000e-005**	**2.8100e-003**	**7.4000e-004**	**2.0000e-005**	**7.6000e-004**	**0.0000**	**2.2670**	**2.2670**	**1.1000e-004**	**0.0000**	**2.2694**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0302	0.3556	0.2889	5.9000e-004		0.0149	0.0149		0.0137	0.0137	0.0000	53.1562	53.1562	0.0168	0.0000	53.5094
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0302**	**0.3556**	**0.2889**	**5.9000e-004**		**0.0149**	**0.0149**		**0.0137**	**0.0137**	**0.0000**	**53.1562**	**53.1562**	**0.0168**	**0.0000**	**53.5094**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	1.2800e-003	0.0121	3.0000e-005	2.7900e-003	2.0000e-005	2.8100e-003	7.4000e-004	2.0000e-005	7.6000e-004	0.0000	2.2670	2.2670	1.1000e-004	0.0000	2.2694
Total	**8.4000e-004**	**1.2800e-003**	**0.0121**	**3.0000e-005**	**2.7900e-003**	**2.0000e-005**	**2.8100e-003**	**7.4000e-004**	**2.0000e-005**	**7.6000e-004**	**0.0000**	**2.2670**	**2.2670**	**1.1000e-004**	**0.0000**	**2.2694**

3.8 Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3600e-003	0.0940	0.0926	1.2000e-004		6.2700e-003	6.2700e-003		5.7700e-003	5.7700e-003	0.0000	11.2174	11.2174	3.5500e-003	0.0000	11.2920
Total	**9.3600e-003**	**0.0940**	**0.0926**	**1.2000e-004**		**6.2700e-003**	**6.2700e-003**		**5.7700e-003**	**5.7700e-003**	**0.0000**	**11.2174**	**11.2174**	**3.5500e-003**	**0.0000**	**11.2920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	6.7000e-004	6.3900e-003	2.0000e-005	1.4700e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.1980	1.1980	6.0000e-005	0.0000	1.1993

Total	**4.4000e-004**	**6.7000e-004**	**6.3900e-003**	**2.0000e-005**	**1.4700e-003**	**1.0000e-005**	**1.4900e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.1980**	**1.1980**	**6.0000e-005**	**0.0000**	**1.1993**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3600e-003	0.0940	0.0926	1.2000e-004		6.2700e-003	6.2700e-003		5.7700e-003	5.7700e-003	0.0000	11.2174	11.2174	3.5500e-003	0.0000	11.2919
Total	**9.3600e-003**	**0.0940**	**0.0926**	**1.2000e-004**		**6.2700e-003**	**6.2700e-003**		**5.7700e-003**	**5.7700e-003**	**0.0000**	**11.2174**	**11.2174**	**3.5500e-003**	**0.0000**	**11.2919**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	6.7000e-004	6.3900e-003	2.0000e-005	1.4700e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.1980	1.1980	6.0000e-005	0.0000	1.1993
Total	**4.4000e-004**	**6.7000e-004**	**6.3900e-003**	**2.0000e-005**	**1.4700e-003**	**1.0000e-005**	**1.4900e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.1980**	**1.1980**	**6.0000e-005**	**0.0000**	**1.1993**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3283	0.6351	2.9992	4.9800e-003	0.3129	8.4600e-003	0.3213	0.0841	7.8000e-003	0.0919	0.0000	354.8231	354.8231	0.0133	0.0000	355.1017
Unmitigated	0.3283	0.6351	2.9992	4.9800e-003	0.3129	8.4600e-003	0.3213	0.0841	7.8000e-003	0.0919	0.0000	354.8231	354.8231	0.0133	0.0000	355.1017

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High Turnover (Sit Down Restaurant)	692.97	863.12	718.53	836,465	836,465
Total	692.97	863.12	718.53	836,465	836,465

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	47.9445	47.9445	2.1700e-003	4.5000e-004	48.1291
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	47.9445	47.9445	2.1700e-003	4.5000e-004	48.1291
NaturalGas Mitigated	5.0000e-003	0.0454	0.0382	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	49.4445	49.4445	9.5000e-004	9.1000e-004	49.7454
NaturalGas Unmitigated	5.0000e-003	0.0454	0.0382	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	49.4445	49.4445	9.5000e-004	9.1000e-004	49.7454

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High Turnover (Sit Down Restaurant)	926555	5.0000e-003	0.0454	0.0382	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	49.4445	49.4445	9.5000e-004	9.1000e-004	49.7454
Total		**5.0000e-003**	**0.0454**	**0.0382**	**2.7000e-004**		**3.4500e-003**	**3.4500e-003**		**3.4500e-003**	**3.4500e-003**	**0.0000**	**49.4445**	**49.4445**	**9.5000e-004**	**9.1000e-004**	**49.7454**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High Turnover (Sit Down Restaurant)	926555	5.0000e-003	0.0454	0.0382	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	49.4445	49.4445	9.5000e-004	9.1000e-004	49.7454

Total		**5.0000e-003**	**0.0454**	**0.0382**	**2.7000e-004**		**3.4500e-003**	**3.4500e-003**		**3.4500e-003**	**3.4500e-003**	**0.0000**	**49.4445**	**49.4445**	**9.5000e-004**	**9.1000e-004**	**49.7454**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High Turnover (Sit Down Restaurant)	164808	47.9445	2.1700e-003	4.5000e-004	48.1291
Total		**47.9445**	**2.1700e-003**	**4.5000e-004**	**48.1291**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High Turnover (Sit Down Restaurant)	164808	47.9445	2.1700e-003	4.5000e-004	48.1291
Total		**47.9445**	**2.1700e-003**	**4.5000e-004**	**48.1291**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0241	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004
Unmitigated	0.0241	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0213					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004
Total	**0.0241**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.0000**	**1.0000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					

Consumer Products	0.0213					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004
Architectural Coating	2.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0241**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.0000**	**1.0000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.2363	0.0540	1.3000e-003	4.7725
Unmitigated	3.2363	0.0540	1.3000e-003	4.7733

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High Turnover (Sit Down Restaurant)	1.65426 / 0.105591	3.2363	0.0540	1.3000e-003	4.7733
Total		**3.2363**	**0.0540**	**1.3000e-003**	**4.7733**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High Turnover (Sit Down Restaurant)	1.65426 / 0.105591	3.2363	0.0540	1.3000e-003	4.7725
Total		**3.2363**	**0.0540**	**1.3000e-003**	**4.7725**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	13.1660	0.7781	0.0000	29.5058
Unmitigated	13.1660	0.7781	0.0000	29.5058

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High Turnover (Sit Down Restaurant)	64.86	13.1660	0.7781	0.0000	29.5058
Total		**13.1660**	**0.7781**	**0.0000**	**29.5058**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High Turnover (Sit Down Restaurant)	64.86	13.1660	0.7781	0.0000	29.5058
Total		**13.1660**	**0.7781**	**0.0000**	**29.5058**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High Turnover (Sit Down Restaurant)	5.45	1000sqft	0.13	5,450.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 2 lot acreage equals 6 but not sure how to break it up into 2a, 2b, etc.

Construction Phase - Per Phase 2 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,900 (35,000 minus 4,100 shore protection) cy total divided by 4 Sub-phases in Phase 2)
Converted cy to cf factors to acres

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblConstructionPhase	NumDays	5.00	44.00
tblConstructionPhase	NumDays	100.00	175.00
tblConstructionPhase	NumDays	10.00	65.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	5.00	41.00
tblConstructionPhase	NumDays	1.00	43.00
tblConstructionPhase	PhaseEndDate	4/3/2019	1/31/2019
tblConstructionPhase	PhaseEndDate	3/30/2018	3/31/2018
tblConstructionPhase	PhaseEndDate	6/29/2018	5/31/2018
tblConstructionPhase	PhaseEndDate	3/29/2019	3/31/2019
tblConstructionPhase	PhaseEndDate	5/30/2018	4/30/2018
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	2/1/2019	12/1/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	4/1/2018
tblConstructionPhase	PhaseStartDate	4/1/2018	3/1/2018
tblGrading	AcresOfGrading	44.00	0.13
tblGrading	AcresOfGrading	43.00	0.00
tblGrading	MaterialImported	0.00	7,725.00
tblOffRoadEquipment	HorsePower	78.00	150.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	174.00	250.00
tblOffRoadEquipment	HorsePower	125.00	150.00

tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	97.00	350.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	255.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00

tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	10.0985	113.9267	74.0383	0.1571	15.8195	4.6437	20.3160	8.4789	4.2722	12.6369	0.0000	15,621.3694	15,621.3694	4.1428	0.0000	15,708.3682
2019	5.4945	24.9954	17.7905	0.0482	0.1415	1.0491	1.0746	0.0375	1.0101	1.0170	0.0000	4,996.2538	4,996.2538	0.9104	0.0000	5,015.3712
Total	**15.5930**	**138.9221**	**91.8287**	**0.2053**	**15.9610**	**5.6928**	**21.3906**	**8.5164**	**5.2823**	**13.6539**	**0.0000**	**20,617.6233**	**20,617.6233**	**5.0532**	**0.0000**	**20,723.7395**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	10.0985	113.9267	74.0383	0.1571	15.8195	4.6437	20.3160	8.4789	4.2722	12.6369	0.0000	15,621.3694	15,621.3694	4.1428	0.0000	15,708.3682
2019	5.4945	24.9954	17.7905	0.0482	0.1415	1.0491	1.0746	0.0375	1.0101	1.0170	0.0000	4,996.2538	4,996.2538	0.9104	0.0000	5,015.3712

Total	**15.5930**	**138.9221**	**91.8287**	**0.2053**	**15.9610**	**5.6928**	**21.3906**	**8.5164**	**5.2823**	**13.6539**	**0.0000**	**20,617.6232**	**20,617.6232**	**5.0532**	**0.0000**	**20,723.7395**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1323	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1900e-003	1.1900e-003	0.0000		1.2600e-003
Energy	0.0274	0.2489	0.2091	1.4900e-003		0.0189	0.0189		0.0189	0.0189		298.6477	298.6477	5.7200e-003	5.4800e-003	300.4652
Mobile	2.2169	3.9598	16.4705	0.0345	2.1367	0.0555	2.1922	0.5724	0.0512	0.6236		2,704.3626	2,704.3626	0.0962		2,706.3818
Total	**2.3765**	**4.2087**	**16.6801**	**0.0360**	**2.1367**	**0.0744**	**2.2111**	**0.5724**	**0.0701**	**0.6425**		**3,003.0115**	**3,003.0115**	**0.1019**	**5.4800e-003**	**3,006.8483**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1323	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1900e-003	1.1900e-003	0.0000		1.2600e-003
Energy	0.0274	0.2489	0.2091	1.4900e-003		0.0189	0.0189		0.0189	0.0189		298.6477	298.6477	5.7200e-003	5.4800e-003	300.4652
Mobile	2.2169	3.9598	16.4705	0.0345	2.1367	0.0555	2.1922	0.5724	0.0512	0.6236		2,704.3626	2,704.3626	0.0962		2,706.3818

Total	**2.3765**	**4.2087**	**16.6801**	**0.0360**	**2.1367**	**0.0744**	**2.2111**	**0.5724**	**0.0701**	**0.6425**		**3,003.0115**	**3,003.0115**	**0.1019**	**5.4800e-003**	**3,006.8483**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	3/31/2018	5	65	
2	Site Preparation	Site Preparation	3/1/2018	4/30/2018	5	43	
3	Grading	Grading	4/1/2018	5/31/2018	5	44	
4	Renovation	Building Construction	6/1/2018	1/31/2019	5	175	
5	Architectural Coatings	Architectural Coating	12/1/2018	1/31/2019	5	44	
6	Paving	Paving	2/1/2019	3/31/2019	5	41	
7	Landscaping	Trenching	4/1/2019	6/30/2019	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.13

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 8,175; Non-Residential Outdoor: 2,725 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Site Preparation	Graders	1	8.00	250	0.41

Site Preparation	Rubber Tired Dozers	3	4.00	350	0.40
Site Preparation	Scrapers	1	4.00	350	0.48
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	350	0.37
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Renovation	Cranes	1	8.00	150	0.29
Renovation	Forklifts	1	6.00	150	0.20
Renovation	Generator Sets	1	6.00	400	0.74
Renovation	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Renovation	Welders	1	6.00	150	0.45
Architectural Coatings	Air Compressors	1	8.00	150	0.48
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	966.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Renovation	5	2.00	1.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	4.6397	51.5427	37.0648	0.0588		2.3209	2.3209		2.1352	2.1352		5,922.3678	5,922.3678	1.8437		5,961.0858
Total	**4.6397**	**51.5427**	**37.0648**	**0.0588**	**0.0000**	**2.3209**	**2.3209**	**0.0000**	**2.1352**	**2.1352**		**5,922.3678**	**5,922.3678**	**1.8437**		**5,961.0858**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.0655**	**0.0801**	**0.9337**	**2.3400e-003**	**0.1886**	**1.4200e-003**	**0.1900**	**0.0500**	**1.3200e-003**	**0.0513**		**181.6789**	**181.6789**	**8.6400e-003**		**181.8603**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	4.6397	51.5427	37.0648	0.0588		2.3209	2.3209		2.1352	2.1352	0.0000	5,922.3678	5,922.3678	1.8437		5,961.0858
Total	**4.6397**	**51.5427**	**37.0648**	**0.0588**	**0.0000**	**2.3209**	**2.3209**	**0.0000**	**2.1352**	**2.1352**	**0.0000**	**5,922.3678**	**5,922.3678**	**1.8437**		**5,961.0858**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.0655**	**0.0801**	**0.9337**	**2.3400e-003**	**0.1886**	**1.4200e-003**	**0.1900**	**0.0500**	**1.3200e-003**	**0.0513**		**181.6789**	**181.6789**	**8.6400e-003**		**181.8603**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0331	0.0000	9.0331	4.9653	0.0000	4.9653			0.0000			0.0000

Off-Road	4.9794	58.6635	35.1062	0.0676		2.3200	2.3200		2.1344	2.1344		6,799.9546	6,799.9546	2.1169		6,844.4099
Total	**4.9794**	**58.6635**	**35.1062**	**0.0676**	**9.0331**	**2.3200**	**11.3531**	**4.9653**	**2.1344**	**7.0997**		**6,799.9546**	**6,799.9546**	**2.1169**		**6,844.4099**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.0655**	**0.0801**	**0.9337**	**2.3400e-003**	**0.1886**	**1.4200e-003**	**0.1900**	**0.0500**	**1.3200e-003**	**0.0513**		**181.6789**	**181.6789**	**8.6400e-003**		**181.8603**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0331	0.0000	9.0331	4.9653	0.0000	4.9653			0.0000			0.0000
Off-Road	4.9794	58.6635	35.1062	0.0676		2.3200	2.3200		2.1344	2.1344	0.0000	6,799.9546	6,799.9546	2.1169		6,844.4099
Total	**4.9794**	**58.6635**	**35.1062**	**0.0676**	**9.0331**	**2.3200**	**11.3531**	**4.9653**	**2.1344**	**7.0997**	**0.0000**	**6,799.9546**	**6,799.9546**	**2.1169**		**6,844.4099**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.0655**	**0.0801**	**0.9337**	**2.3400e-003**	**0.1886**	**1.4200e-003**	**0.1900**	**0.0500**	**1.3200e-003**	**0.0513**		**181.6789**	**181.6789**	**8.6400e-003**		**181.8603**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0451	0.0000	6.0451	3.3136	0.0000	3.3136			0.0000			0.0000
Off-Road	4.5771	49.9384	26.1289	0.0686		2.0986	2.0986		1.9521	1.9521		6,861.6794	6,861.6794	1.9975		6,903.6272
Total	**4.5771**	**49.9384**	**26.1289**	**0.0686**	**6.0451**	**2.0986**	**8.1437**	**3.3136**	**1.9521**	**5.2656**		**6,861.6794**	**6,861.6794**	**1.9975**		**6,903.6272**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4176	5.1726	3.8956	0.0165	0.3830	0.0752	0.4581	0.1049	0.0691	0.1740		1,614.5455	1,614.5455	0.0120		1,614.7966

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0721	0.8403	2.1000e-003	0.1698	1.2800e-003	0.1710	0.0450	1.1800e-003	0.0462		163.5110	163.5110	7.7700e-003		163.6742
Total	**0.4765**	**5.2447**	**4.7359**	**0.0186**	**0.5527**	**0.0765**	**0.6292**	**0.1499**	**0.0703**	**0.2202**		**1,778.0565**	**1,778.0565**	**0.0197**		**1,778.4709**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0451	0.0000	6.0451	3.3136	0.0000	3.3136			0.0000			0.0000
Off-Road	4.5771	49.9384	26.1289	0.0686		2.0986	2.0986		1.9521	1.9521	0.0000	6,861.6794	6,861.6794	1.9975		6,903.6272
Total	**4.5771**	**49.9384**	**26.1289**	**0.0686**	**6.0451**	**2.0986**	**8.1437**	**3.3136**	**1.9521**	**5.2656**	**0.0000**	**6,861.6794**	**6,861.6794**	**1.9975**		**6,903.6272**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4176	5.1726	3.8956	0.0165	0.3830	0.0752	0.4581	0.1049	0.0691	0.1740		1,614.5455	1,614.5455	0.0120		1,614.7966
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0721	0.8403	2.1000e-003	0.1698	1.2800e-003	0.1710	0.0450	1.1800e-003	0.0462		163.5110	163.5110	7.7700e-003		163.6742
Total	**0.4765**	**5.2447**	**4.7359**	**0.0186**	**0.5527**	**0.0765**	**0.6292**	**0.1499**	**0.0703**	**0.2202**		**1,778.0565**	**1,778.0565**	**0.0197**		**1,778.4709**

3.5 Renovation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2662	23.8937	13.7796	0.0401		0.9604	0.9604		0.9167	0.9167		4,257.4629	4,257.4629	0.5813		4,269.6695
Total	**2.2662**	**23.8937**	**13.7796**	**0.0401**		**0.9604**	**0.9604**		**0.9167**	**0.9167**		**4,257.4629**	**4,257.4629**	**0.5813**		**4,269.6695**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	9.4300e-003	0.0794	0.0965	2.4000e-004	6.6700e-003	1.2200e-003	7.8900e-003	1.9100e-003	1.1200e-003	3.0300e-003		23.2863	23.2863	1.8000e-004		23.2901
Worker	6.5500e-003	8.0100e-003	0.0934	2.3000e-004	0.0189	1.4000e-004	0.0190	5.0000e-003	1.3000e-004	5.1300e-003		18.1679	18.1679	8.6000e-004		18.1860
Total	**0.0160**	**0.0874**	**0.1899**	**4.7000e-004**	**0.0255**	**1.3600e-003**	**0.0269**	**6.9100e-003**	**1.2500e-003**	**8.1600e-003**		**41.4542**	**41.4542**	**1.0400e-003**		**41.4761**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	2.2662	23.8937	13.7796	0.0401		0.9604	0.9604		0.9167	0.9167	0.0000	4,257.4629	4,257.4629	0.5813		4,269.6695
Total	**2.2662**	**23.8937**	**13.7796**	**0.0401**		**0.9604**	**0.9604**		**0.9167**	**0.9167**	**0.0000**	**4,257.4629**	**4,257.4629**	**0.5813**		**4,269.6695**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	9.4300e-003	0.0794	0.0965	2.4000e-004	6.6700e-003	1.2200e-003	7.8900e-003	1.9100e-003	1.1200e-003	3.0300e-003		23.2863	23.2863	1.8000e-004		23.2901
Worker	6.5500e-003	8.0100e-003	0.0934	2.3000e-004	0.0189	1.4000e-004	0.0190	5.0000e-003	1.3000e-004	5.1300e-003		18.1679	18.1679	8.6000e-004		18.1860
Total	**0.0160**	**0.0874**	**0.1899**	**4.7000e-004**	**0.0255**	**1.3600e-003**	**0.0269**	**6.9100e-003**	**1.2500e-003**	**8.1600e-003**		**41.4542**	**41.4542**	**1.0400e-003**		**41.4761**

3.5 Renovation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1001	21.2661	13.5468	0.0401		0.8574	0.8574		0.8184	0.8184		4,234.1909	4,234.1909	0.5751		4,246.2669
Total	**2.1001**	**21.2661**	**13.5468**	**0.0401**		**0.8574**	**0.8574**		**0.8184**	**0.8184**		**4,234.1909**	**4,234.1909**	**0.5751**		**4,246.2669**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.6700e-003	0.0725	0.0900	2.4000e-004	6.6700e-003	1.1300e-003	7.8000e-003	1.9100e-003	1.0400e-003	2.9500e-003		22.8842	22.8842	1.7000e-004		22.8879
Worker	5.9800e-003	7.3000e-003	0.0851	2.3000e-004	0.0189	1.4000e-004	0.0190	5.0000e-003	1.3000e-004	5.1300e-003		17.5170	17.5170	8.0000e-004		17.5339
Total	**0.0147**	**0.0798**	**0.1751**	**4.7000e-004**	**0.0255**	**1.2700e-003**	**0.0268**	**6.9100e-003**	**1.1700e-003**	**8.0800e-003**		**40.4013**	**40.4013**	**9.7000e-004**		**40.4218**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1001	21.2661	13.5468	0.0401		0.8574	0.8574		0.8184	0.8184	0.0000	4,234.1909	4,234.1909	0.5751		4,246.2669
Total	**2.1001**	**21.2661**	**13.5468**	**0.0401**		**0.8574**	**0.8574**		**0.8184**	**0.8184**	**0.0000**	**4,234.1909**	**4,234.1909**	**0.5751**		**4,246.2669**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.6700e-003	0.0725	0.0900	2.4000e-004	6.6700e-003	1.1300e-003	7.8000e-003	1.9100e-003	1.0400e-003	2.9500e-003		22.8842	22.8842	1.7000e-004		22.8879
Worker	5.9800e-003	7.3000e-003	0.0851	2.3000e-004	0.0189	1.4000e-004	0.0190	5.0000e-003	1.3000e-004	5.1300e-003		17.5170	17.5170	8.0000e-004		17.5339
Total	**0.0147**	**0.0798**	**0.1751**	**4.7000e-004**	**0.0255**	**1.2700e-003**	**0.0268**	**6.9100e-003**	**1.1700e-003**	**8.0800e-003**		**40.4013**	**40.4013**	**9.7000e-004**		**40.4218**

3.6 Architectural Coatings - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.8705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.5524	4.0991	4.0699	7.6200e-003		0.2159	0.2159		0.2159	0.2159		721.6617	721.6617	0.0495		722.7017
Total	**3.4229**	**4.0991**	**4.0699**	**7.6200e-003**		**0.2159**	**0.2159**		**0.2159**	**0.2159**		**721.6617**	**721.6617**	**0.0495**		**722.7017**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.8705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.5524	4.0991	4.0699	7.6200e-003		0.2159	0.2159		0.2159	0.2159	0.0000	721.6617	721.6617	0.0495		722.7017
Total	**3.4229**	**4.0991**	**4.0699**	**7.6200e-003**		**0.2159**	**0.2159**		**0.2159**	**0.2159**	**0.0000**	**721.6617**	**721.6617**	**0.0495**		**722.7017**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Architectural Coatings - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Archit. Coating	2.8705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.5092	3.6496	4.0686	7.6200e-003		0.1905	0.1905		0.1905	0.1905		721.6617	721.6617	0.0457		722.6217
Total	**3.3798**	**3.6496**	**4.0686**	**7.6200e-003**		**0.1905**	**0.1905**		**0.1905**	**0.1905**		**721.6617**	**721.6617**	**0.0457**		**722.6217**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.8705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.5092	3.6496	4.0686	7.6200e-003		0.1905	0.1905		0.1905	0.1905	0.0000	721.6617	721.6617	0.0457		722.6217
Total	**3.3798**	**3.6496**	**4.0686**	**7.6200e-003**		**0.1905**	**0.1905**		**0.1905**	**0.1905**	**0.0000**	**721.6617**	**721.6617**	**0.0457**		**722.6217**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.7 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4720	17.3446	14.0901	0.0289		0.7254	0.7254		0.6674	0.6674		2,858.2824	2,858.2824	0.9043		2,877.2733
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4720**	**17.3446**	**14.0901**	**0.0289**		**0.7254**	**0.7254**		**0.6674**	**0.6674**		**2,858.2824**	**2,858.2824**	**0.9043**		**2,877.2733**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4720	17.3446	14.0901	0.0289		0.7254	0.7254		0.6674	0.6674	0.0000	2,858.2824	2,858.2824	0.9043		2,877.2733
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4720**	**17.3446**	**14.0901**	**0.0289**		**0.7254**	**0.7254**		**0.6674**	**0.6674**	**0.0000**	**2,858.2824**	**2,858.2824**	**0.9043**		**2,877.2733**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043

Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

3.8 Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2880	2.8916	2.8487	3.8400e-003		0.1930	0.1930		0.1776	0.1776		380.4642	380.4642	0.1204		382.9920
Total	**0.2880**	**2.8916**	**2.8487**	**3.8400e-003**		**0.1930**	**0.1930**		**0.1776**	**0.1776**		**380.4642**	**380.4642**	**0.1204**		**382.9920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0183	0.2128	5.8000e-004	0.0472	3.5000e-004	0.0475	0.0125	3.2000e-004	0.0128		43.7926	43.7926	2.0100e-003		43.8348
Total	**0.0150**	**0.0183**	**0.2128**	**5.8000e-004**	**0.0472**	**3.5000e-004**	**0.0475**	**0.0125**	**3.2000e-004**	**0.0128**		**43.7926**	**43.7926**	**2.0100e-003**		**43.8348**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2880	2.8916	2.8487	3.8400e-003		0.1930	0.1930		0.1776	0.1776	0.0000	380.4642	380.4642	0.1204		382.9920
Total	**0.2880**	**2.8916**	**2.8487**	**3.8400e-003**		**0.1930**	**0.1930**		**0.1776**	**0.1776**	**0.0000**	**380.4642**	**380.4642**	**0.1204**		**382.9920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0183	0.2128	5.8000e-004	0.0472	3.5000e-004	0.0475	0.0125	3.2000e-004	0.0128		43.7926	43.7926	2.0100e-003		43.8348
Total	**0.0150**	**0.0183**	**0.2128**	**5.8000e-004**	**0.0472**	**3.5000e-004**	**0.0475**	**0.0125**	**3.2000e-004**	**0.0128**		**43.7926**	**43.7926**	**2.0100e-003**		**43.8348**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Mitigated	2.2169	3.9598	16.4705	0.0345	2.1367	0.0555	2.1922	0.5724	0.0512	0.6236		2,704.3626	2,704.3626	0.0962		2,706.3818
Unmitigated	2.2169	3.9598	16.4705	0.0345	2.1367	0.0555	2.1922	0.5724	0.0512	0.6236		2,704.3626	2,704.3626	0.0962		2,706.3818

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High Turnover (Sit Down Restaurant)	692.97	863.12	718.53	836,465	836,465
Total	692.97	863.12	718.53	836,465	836,465

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0274	0.2489	0.2091	1.4900e-003		0.0189	0.0189		0.0189	0.0189		298.6477	298.6477	5.7200e-003	5.4800e-003	300.4652

NaturalGas Unmitigated	0.0274	0.2489	0.2091	1.4900e-003		0.0189	0.0189		0.0189	0.0189		298.6477	298.6477	5.7200e-003	5.4800e-003	300.4652

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
High Turnover (Sit Down Restaurant)	2538.51	0.0274	0.2489	0.2091	1.4900e-003		0.0189	0.0189		0.0189	0.0189		298.6477	298.6477	5.7200e-003	5.4800e-003	300.4652
Total		**0.0274**	**0.2489**	**0.2091**	**1.4900e-003**		**0.0189**	**0.0189**		**0.0189**	**0.0189**		**298.6477**	**298.6477**	**5.7200e-003**	**5.4800e-003**	**300.4652**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
High Turnover (Sit Down Restaurant)	2.53851	0.0274	0.2489	0.2091	1.4900e-003		0.0189	0.0189		0.0189	0.0189		298.6477	298.6477	5.7200e-003	5.4800e-003	300.4652
Total		**0.0274**	**0.2489**	**0.2091**	**1.4900e-003**		**0.0189**	**0.0189**		**0.0189**	**0.0189**		**298.6477**	**298.6477**	**5.7200e-003**	**5.4800e-003**	**300.4652**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1323	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1900e-003	1.1900e-003	0.0000		1.2600e-003
Unmitigated	0.1323	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1900e-003	1.1900e-003	0.0000		1.2600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.1166					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1900e-003	1.1900e-003	0.0000		1.2600e-003
Architectural Coating	0.0156					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.1323**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.1900e-003**	**1.1900e-003**	**0.0000**		**1.2600e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Consumer Products	0.1166					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1900e-003	1.1900e-003	0.0000		1.2600e-003
Architectural Coating	0.0156					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.1323**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.1900e-003**	**1.1900e-003**	**0.0000**		**1.2600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.30	Acre	0.30	13,090.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 2 lot acreage equals 6 but not sure how to break it up into 2a, 2b, etc.

Construction Phase - Per Phase 2 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,900 (35,000 minus 4,100) cy total divided by 4 Sub-phases in Phase 1)

Sequestration -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	195.00
tblConstructionPhase	NumDays	10.00	65.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	5.00	43.00
tblConstructionPhase	NumDays	1.00	44.00
tblConstructionPhase	PhaseEndDate	3/30/2018	3/31/2018
tblConstructionPhase	PhaseEndDate	8/1/2018	5/31/2018
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	6/1/2018	4/1/2018
tblGrading	AcresOfGrading	44.00	0.30
tblGrading	MaterialImported	0.00	7,725.00
tblLandUse	LandUseSquareFeet	13,068.00	13,090.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00

tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSequestration	NumberOfNewTrees	0.00	150.00
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.4691	5.0180	3.2280	7.3100e-003	0.1681	0.2142	0.3824	0.0805	0.2001	0.2806	0.0000	677.0597	677.0597	0.1428	0.0000	680.0592
2019	0.0849	0.8978	0.6828	1.6400e-003	6.1900e-003	0.0383	0.0445	1.6400e-003	0.0358	0.0375	0.0000	150.7667	150.7667	0.0314	0.0000	151.4264
Total	**0.5540**	**5.9158**	**3.9107**	**8.9500e-003**	**0.1743**	**0.2525**	**0.4268**	**0.0821**	**0.2359**	**0.3181**	**0.0000**	**827.8264**	**827.8264**	**0.1742**	**0.0000**	**831.4856**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.4691	5.0180	3.2279	7.3100e-003	0.1681	0.2142	0.3824	0.0805	0.2001	0.2806	0.0000	677.0589	677.0589	0.1428	0.0000	680.0584
2019	0.0849	0.8978	0.6828	1.6400e-003	6.1900e-003	0.0383	0.0445	1.6400e-003	0.0358	0.0375	0.0000	150.7665	150.7665	0.0314	0.0000	151.4262
Total	**0.5540**	**5.9158**	**3.9107**	**8.9500e-003**	**0.1743**	**0.2525**	**0.4268**	**0.0821**	**0.2359**	**0.3181**	**0.0000**	**827.8254**	**827.8254**	**0.1742**	**0.0000**	**831.4846**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Area	0.0580	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.5000e-004	6.5000e-004	2.6000e-003	1.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	0.4173	0.4173	1.0000e-005	0.0000	0.4176
Waste						0.0000	0.0000		0.0000	0.0000	6.0900e-003	0.0000	6.0900e-003	3.6000e-004	0.0000	0.0137
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.3640	0.3640	2.0000e-005	0.0000	0.3654
Total	**0.0582**	**6.5000e-004**	**2.6000e-003**	**1.0000e-005**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**1.0000e-004**	**1.0000e-005**	**1.1000e-004**	**6.0900e-003**	**0.7812**	**0.7873**	**3.9000e-004**	**0.0000**	**0.7966**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0580	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.5000e-004	6.5000e-004	2.6000e-003	1.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	0.4173	0.4173	1.0000e-005	0.0000	0.4176
Waste						0.0000	0.0000		0.0000	0.0000	6.0900e-003	0.0000	6.0900e-003	3.6000e-004	0.0000	0.0137
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.3640	0.3640	2.0000e-005	0.0000	0.3654
Total	**0.0582**	**6.5000e-004**	**2.6000e-003**	**1.0000e-005**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**1.0000e-004**	**1.0000e-005**	**1.1000e-004**	**6.0900e-003**	**0.7812**	**0.7873**	**3.9000e-004**	**0.0000**	**0.7966**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	106.2000
Total	**106.2000**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	3/31/2018	5	65	
2	Excavation	Site Preparation	4/1/2018	5/31/2018	5	44	
3	Grading	Grading	4/1/2018	5/31/2018	5	44	
4	Construction	Building Construction	6/1/2018	2/28/2019	5	195	
5	Paving	Paving	3/1/2019	4/30/2019	5	43	
6	Landscaping	Trenching	5/1/2019	6/30/2019	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73

Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Construction	Cranes	1	8.00	150	0.29
Construction	Forklifts	1	6.00	150	0.20
Construction	Generator Sets	1	6.00	400	0.74
Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Construction	Welders	1	6.00	150	0.45
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	966.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Construction	5	6.00	2.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1508	1.6751	1.2046	1.9100e-003		0.0754	0.0754		0.0694	0.0694	0.0000	174.6122	174.6122	0.0544	0.0000	175.7537
Total	**0.1508**	**1.6751**	**1.2046**	**1.9100e-003**	**0.0000**	**0.0754**	**0.0754**	**0.0000**	**0.0694**	**0.0694**	**0.0000**	**174.6122**	**174.6122**	**0.0544**	**0.0000**	**175.7537**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9500e-003	2.9600e-003	0.0282	7.0000e-005	5.9000e-003	5.0000e-005	5.9500e-003	1.5700e-003	4.0000e-005	1.6100e-003	0.0000	4.9705	4.9705	2.5000e-004	0.0000	4.9758
Total	**1.9500e-003**	**2.9600e-003**	**0.0282**	**7.0000e-005**	**5.9000e-003**	**5.0000e-005**	**5.9500e-003**	**1.5700e-003**	**4.0000e-005**	**1.6100e-003**	**0.0000**	**4.9705**	**4.9705**	**2.5000e-004**	**0.0000**	**4.9758**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1508	1.6751	1.2046	1.9100e-003		0.0754	0.0754		0.0694	0.0694	0.0000	174.6120	174.6120	0.0544	0.0000	175.7535
Total	**0.1508**	**1.6751**	**1.2046**	**1.9100e-003**	**0.0000**	**0.0754**	**0.0754**	**0.0000**	**0.0694**	**0.0694**	**0.0000**	**174.6120**	**174.6120**	**0.0544**	**0.0000**	**175.7535**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9500e-003	2.9600e-003	0.0282	7.0000e-005	5.9000e-003	5.0000e-005	5.9500e-003	1.5700e-003	4.0000e-005	1.6100e-003	0.0000	4.9705	4.9705	2.5000e-004	0.0000	4.9758
Total	**1.9500e-003**	**2.9600e-003**	**0.0282**	**7.0000e-005**	**5.9000e-003**	**5.0000e-005**	**5.9500e-003**	**1.5700e-003**	**4.0000e-005**	**1.6100e-003**	**0.0000**	**4.9705**	**4.9705**	**2.5000e-004**	**0.0000**	**4.9758**

3.3 Excavation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.0117	0.0000	0.0117	1.2600e-003	0.0000	1.2600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0291	0.2906	0.2014	2.7000e-004		0.0177	0.0177		0.0163	0.0163	0.0000	24.5837	24.5837	7.6500e-003	0.0000	24.7444
Total	**0.0291**	**0.2906**	**0.2014**	**2.7000e-004**	**0.0117**	**0.0177**	**0.0294**	**1.2600e-003**	**0.0163**	**0.0175**	**0.0000**	**24.5837**	**24.5837**	**7.6500e-003**	**0.0000**	**24.7444**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	3.0000e-004	2.8600e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5047	0.5047	3.0000e-005	0.0000	0.5052
Total	**2.0000e-004**	**3.0000e-004**	**2.8600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5047**	**0.5047**	**3.0000e-005**	**0.0000**	**0.5052**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0117	0.0000	0.0117	1.2600e-003	0.0000	1.2600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0291	0.2906	0.2014	2.7000e-004		0.0177	0.0177		0.0163	0.0163	0.0000	24.5837	24.5837	7.6500e-003	0.0000	24.7444
Total	**0.0291**	**0.2906**	**0.2014**	**2.7000e-004**	**0.0117**	**0.0177**	**0.0294**	**1.2600e-003**	**0.0163**	**0.0175**	**0.0000**	**24.5837**	**24.5837**	**7.6500e-003**	**0.0000**	**24.7444**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	3.0000e-004	2.8600e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5047	0.5047	3.0000e-005	0.0000	0.5052
Total	**2.0000e-004**	**3.0000e-004**	**2.8600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5047**	**0.5047**	**3.0000e-005**	**0.0000**	**0.5052**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1331	0.0000	0.1331	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1007	1.0987	0.5748	1.5100e-003		0.0462	0.0462		0.0430	0.0430	0.0000	136.9458	136.9458	0.0399	0.0000	137.7830
Total	**0.1007**	**1.0987**	**0.5748**	**1.5100e-003**	**0.1331**	**0.0462**	**0.1793**	**0.0729**	**0.0430**	**0.1159**	**0.0000**	**136.9458**	**136.9458**	**0.0399**	**0.0000**	**137.7830**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0100	0.1180	0.1120	3.6000e-004	8.1500e-003	1.6600e-003	9.8100e-003	2.2400e-003	1.5200e-003	3.7600e-003	0.0000	32.1917	32.1917	2.4000e-004	0.0000	32.1967
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1900e-003	1.8000e-003	0.0172	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.0282	3.0282	1.6000e-004	0.0000	3.0314
Total	**0.0112**	**0.1198**	**0.1292**	**4.0000e-004**	**0.0117**	**1.6900e-003**	**0.0134**	**3.2000e-003**	**1.5500e-003**	**4.7400e-003**	**0.0000**	**35.2199**	**35.2199**	**4.0000e-004**	**0.0000**	**35.2282**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1331	0.0000	0.1331	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1007	1.0986	0.5748	1.5100e-003		0.0462	0.0462		0.0430	0.0430	0.0000	136.9457	136.9457	0.0399	0.0000	137.7829
Total	**0.1007**	**1.0986**	**0.5748**	**1.5100e-003**	**0.1331**	**0.0462**	**0.1793**	**0.0729**	**0.0430**	**0.1159**	**0.0000**	**136.9457**	**136.9457**	**0.0399**	**0.0000**	**137.7829**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0100	0.1180	0.1120	3.6000e-004	8.1500e-003	1.6600e-003	9.8100e-003	2.2400e-003	1.5200e-003	3.7600e-003	0.0000	32.1917	32.1917	2.4000e-004	0.0000	32.1967
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1900e-003	1.8000e-003	0.0172	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.0282	3.0282	1.6000e-004	0.0000	3.0314
Total	**0.0112**	**0.1198**	**0.1292**	**4.0000e-004**	**0.0117**	**1.6900e-003**	**0.0134**	**3.2000e-003**	**1.5500e-003**	**4.7400e-003**	**0.0000**	**35.2199**	**35.2199**	**4.0000e-004**	**0.0000**	**35.2282**

3.5 Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1722	1.8159	1.0473	3.0500e-003		0.0730	0.0730		0.0697	0.0697	0.0000	293.5352	293.5352	0.0401	0.0000	294.3768
Total	**0.1722**	**1.8159**	**1.0473**	**3.0500e-003**		**0.0730**	**0.0730**		**0.0697**	**0.0697**	**0.0000**	**293.5352**	**293.5352**	**0.0401**	**0.0000**	**294.3768**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6100e-003	0.0125	0.0200	4.0000e-005	9.8000e-004	1.9000e-004	1.1700e-003	2.8000e-004	1.7000e-004	4.5000e-004	0.0000	3.2007	3.2007	2.0000e-005	0.0000	3.2012
Worker	1.3700e-003	2.0800e-003	0.0198	5.0000e-005	4.1400e-003	3.0000e-005	4.1700e-003	1.1000e-003	3.0000e-005	1.1300e-003	0.0000	3.4870	3.4870	1.8000e-004	0.0000	3.4907
Total	**2.9800e-003**	**0.0146**	**0.0398**	**9.0000e-005**	**5.1200e-003**	**2.2000e-004**	**5.3400e-003**	**1.3800e-003**	**2.0000e-004**	**1.5800e-003**	**0.0000**	**6.6877**	**6.6877**	**2.0000e-004**	**0.0000**	**6.6920**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	0.1722	1.8159	1.0473	3.0500e-003		0.0730	0.0730		0.0697	0.0697	0.0000	293.5349	293.5349	0.0401	0.0000	294.3765
Total	**0.1722**	**1.8159**	**1.0473**	**3.0500e-003**		**0.0730**	**0.0730**		**0.0697**	**0.0697**	**0.0000**	**293.5349**	**293.5349**	**0.0401**	**0.0000**	**294.3765**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6100e-003	0.0125	0.0200	4.0000e-005	9.8000e-004	1.9000e-004	1.1700e-003	2.8000e-004	1.7000e-004	4.5000e-004	0.0000	3.2007	3.2007	2.0000e-005	0.0000	3.2012
Worker	1.3700e-003	2.0800e-003	0.0198	5.0000e-005	4.1400e-003	3.0000e-005	4.1700e-003	1.1000e-003	3.0000e-005	1.1300e-003	0.0000	3.4870	3.4870	1.8000e-004	0.0000	3.4907
Total	**2.9800e-003**	**0.0146**	**0.0398**	**9.0000e-005**	**5.1200e-003**	**2.2000e-004**	**5.3400e-003**	**1.3800e-003**	**2.0000e-004**	**1.5800e-003**	**0.0000**	**6.6877**	**6.6877**	**2.0000e-004**	**0.0000**	**6.6920**

3.5 Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0452	0.4572	0.2913	8.6000e-004		0.0184	0.0184		0.0176	0.0176	0.0000	82.5857	82.5857	0.0112	0.0000	82.8212
Total	**0.0452**	**0.4572**	**0.2913**	**8.6000e-004**		**0.0184**	**0.0184**		**0.0176**	**0.0176**	**0.0000**	**82.5857**	**82.5857**	**0.0112**	**0.0000**	**82.8212**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2000e-004	3.2200e-003	5.3500e-003	1.0000e-005	2.8000e-004	5.0000e-005	3.3000e-004	8.0000e-005	4.0000e-005	1.2000e-004	0.0000	0.8898	0.8898	1.0000e-005	0.0000	0.8900
Worker	3.5000e-004	5.3000e-004	5.0700e-003	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9510	0.9510	5.0000e-005	0.0000	0.9520
Total	**7.7000e-004**	**3.7500e-003**	**0.0104**	**2.0000e-005**	**1.4500e-003**	**6.0000e-005**	**1.5100e-003**	**3.9000e-004**	**5.0000e-005**	**4.4000e-004**	**0.0000**	**1.8409**	**1.8409**	**6.0000e-005**	**0.0000**	**1.8420**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0452	0.4572	0.2913	8.6000e-004		0.0184	0.0184		0.0176	0.0176	0.0000	82.5856	82.5856	0.0112	0.0000	82.8211
Total	**0.0452**	**0.4572**	**0.2913**	**8.6000e-004**		**0.0184**	**0.0184**		**0.0176**	**0.0176**	**0.0000**	**82.5856**	**82.5856**	**0.0112**	**0.0000**	**82.8211**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2000e-004	3.2200e-003	5.3500e-003	1.0000e-005	2.8000e-004	5.0000e-005	3.3000e-004	8.0000e-005	4.0000e-005	1.2000e-004	0.0000	0.8898	0.8898	1.0000e-005	0.0000	0.8900
Worker	3.5000e-004	5.3000e-004	5.0700e-003	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9510	0.9510	5.0000e-005	0.0000	0.9520
Total	**7.7000e-004**	**3.7500e-003**	**0.0104**	**2.0000e-005**	**1.4500e-003**	**6.0000e-005**	**1.5100e-003**	**3.9000e-004**	**5.0000e-005**	**4.4000e-004**	**0.0000**	**1.8409**	**1.8409**	**6.0000e-005**	**0.0000**	**1.8420**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0317	0.3729	0.3029	6.2000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.7493	55.7493	0.0176	0.0000	56.1197
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0317**	**0.3729**	**0.3029**	**6.2000e-004**		**0.0156**	**0.0156**		**0.0144**	**0.0144**	**0.0000**	**55.7493**	**55.7493**	**0.0176**	**0.0000**	**56.1197**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	1.3400e-003	0.0127	3.0000e-005	2.9300e-003	2.0000e-005	2.9500e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.3776	2.3776	1.2000e-004	0.0000	2.3801

Total	**8.8000e-004**	**1.3400e-003**	**0.0127**	**3.0000e-005**	**2.9300e-003**	**2.0000e-005**	**2.9500e-003**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**0.0000**	**2.3776**	**2.3776**	**1.2000e-004**	**0.0000**	**2.3801**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0317	0.3729	0.3029	6.2000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.7492	55.7492	0.0176	0.0000	56.1196
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0317**	**0.3729**	**0.3029**	**6.2000e-004**		**0.0156**	**0.0156**		**0.0144**	**0.0144**	**0.0000**	**55.7492**	**55.7492**	**0.0176**	**0.0000**	**56.1196**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	1.3400e-003	0.0127	3.0000e-005	2.9300e-003	2.0000e-005	2.9500e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.3776	2.3776	1.2000e-004	0.0000	2.3801
Total	**8.8000e-004**	**1.3400e-003**	**0.0127**	**3.0000e-005**	**2.9300e-003**	**2.0000e-005**	**2.9500e-003**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**0.0000**	**2.3776**	**2.3776**	**1.2000e-004**	**0.0000**	**2.3801**

3.7 Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.1900e-003	0.0622	0.0613	8.0000e-005		4.1500e-003	4.1500e-003		3.8200e-003	3.8200e-003	0.0000	7.4208	7.4208	2.3500e-003	0.0000	7.4701
Total	**6.1900e-003**	**0.0622**	**0.0613**	**8.0000e-005**		**4.1500e-003**	**4.1500e-003**		**3.8200e-003**	**3.8200e-003**	**0.0000**	**7.4208**	**7.4208**	**2.3500e-003**	**0.0000**	**7.4701**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	4.5000e-004	4.2200e-003	1.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.7000e-004	1.0000e-005	4.7000e-004	0.0000	0.7925	0.7925	4.0000e-005	0.0000	0.7934
Total	**2.9000e-004**	**4.5000e-004**	**4.2200e-003**	**1.0000e-005**	**1.8200e-003**	**1.0000e-005**	**1.8300e-003**	**4.7000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**0.7925**	**0.7925**	**4.0000e-005**	**0.0000**	**0.7934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.1900e-003	0.0622	0.0613	8.0000e-005		4.1500e-003	4.1500e-003		3.8200e-003	3.8200e-003	0.0000	7.4207	7.4207	2.3500e-003	0.0000	7.4701
Total	**6.1900e-003**	**0.0622**	**0.0613**	**8.0000e-005**		**4.1500e-003**	**4.1500e-003**		**3.8200e-003**	**3.8200e-003**	**0.0000**	**7.4207**	**7.4207**	**2.3500e-003**	**0.0000**	**7.4701**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	4.5000e-004	4.2200e-003	1.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.7000e-004	1.0000e-005	4.7000e-004	0.0000	0.7925	0.7925	4.0000e-005	0.0000	0.7934
Total	**2.9000e-004**	**4.5000e-004**	**4.2200e-003**	**1.0000e-005**	**1.8200e-003**	**1.0000e-005**	**1.8300e-003**	**4.7000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**0.7925**	**0.7925**	**4.0000e-005**	**0.0000**	**0.7934**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.5000e-004	6.5000e-004	2.6000e-003	1.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	0.4173	0.4173	1.0000e-005	0.0000	0.4176
Unmitigated	2.5000e-004	6.5000e-004	2.6000e-003	1.0000e-005	3.8000e-004	1.0000e-005	3.9000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	0.4173	0.4173	1.0000e-005	0.0000	0.4176

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.48	0.48	0.48	1,018	1,018
Total	0.48	0.48	0.48	1,018	1,018

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0580	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Unmitigated	0.0580	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.8300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0511					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**0.0580**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.8300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0511					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**0.0580**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e

Category	MT/yr			
Mitigated	0.3640	2.0000e-005	0.0000	0.3654
Unmitigated	0.3640	2.0000e-005	0.0000	0.3654

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.357444	0.3640	2.0000e-005	0.0000	0.3654
Total		**0.3640**	**2.0000e-005**	**0.0000**	**0.3654**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.357444	0.3640	2.0000e-005	0.0000	0.3654
Total		**0.3640**	**2.0000e-005**	**0.0000**	**0.3654**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.0900e-003	3.6000e-004	0.0000	0.0137
Unmitigated	6.0900e-003	3.6000e-004	0.0000	0.0137

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0137
Total		**6.0900e-003**	**3.6000e-004**	**0.0000**	**0.0137**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0137
Total		**6.0900e-003**	**3.6000e-004**	**0.0000**	**0.0137**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	106.2000	0.0000	0.0000	106.2000

10.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	150	106.2000	0.0000	0.0000	106.2000

Total		**106.2000**	**0.0000**	**0.0000**	**106.2000**

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.30	Acre	0.30	13,090.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 2 lot acreage equals 6 but not sure how to break it up into 2a, 2b, etc.

Construction Phase - Per Phase 2 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,900 (35,000 minus 4,100) cy total divided by 4 Sub-phases in Phase 1)

Converted sq. ars factored to acres

Sequestration -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	195.00
tblConstructionPhase	NumDays	10.00	65.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	5.00	43.00
tblConstructionPhase	NumDays	1.00	44.00
tblConstructionPhase	PhaseEndDate	3/30/2018	3/31/2018
tblConstructionPhase	PhaseEndDate	8/1/2018	5/31/2018
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	6/1/2018	4/1/2018
tblGrading	AcresOfGrading	44.00	0.30
tblGrading	MaterialImported	0.00	7,725.00
tblLandUse	LandUseSquareFeet	13,068.00	13,090.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00

tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSequestration	NumberOfNewTrees	0.00	150.00
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	6.3837	68.4051	40.1577	0.0998	7.1604	2.9798	10.1402	3.5287	2.7628	6.2915	0.0000	9,898.7557	9,898.7557	2.4020	0.0000	9,949.1978
2019	2.1354	21.4329	14.7284	0.0413	0.1415	0.8600	0.9300	0.0375	0.8209	0.8397	0.0000	4,332.5105	4,332.5105	0.9104	0.0000	4,351.6279
Total	**8.5191**	**89.8381**	**54.8860**	**0.1411**	**7.3019**	**3.8398**	**11.0702**	**3.5662**	**3.5836**	**7.1311**	**0.0000**	**14,231.2662**	**14,231.2662**	**3.3124**	**0.0000**	**14,300.8257**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	6.3837	68.4051	40.1577	0.0998	7.1604	2.9798	10.1402	3.5287	2.7628	6.2915	0.0000	9,898.7557	9,898.7557	2.4020	0.0000	9,949.1978
2019	2.1354	21.4329	14.7284	0.0413	0.1415	0.8600	0.9300	0.0375	0.8209	0.8397	0.0000	4,332.5105	4,332.5105	0.9104	0.0000	4,351.6279
Total	**8.5191**	**89.8381**	**54.8860**	**0.1411**	**7.3019**	**3.8398**	**11.0702**	**3.5662**	**3.5836**	**7.1311**	**0.0000**	**14,231.2662**	**14,231.2662**	**3.3124**	**0.0000**	**14,300.8257**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Area	0.3175	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		7.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.3900e-003	3.3800e-003	0.0129	3.0000e-005	2.1700e-003	5.0000e-005	2.2300e-003	5.8000e-004	5.0000e-005	6.3000e-004		2.6588	2.6588	9.0000e-005		2.6607
Total	**0.3189**	**3.3800e-003**	**0.0129**	**3.0000e-005**	**2.1700e-003**	**5.0000e-005**	**2.2300e-003**	**5.8000e-004**	**5.0000e-005**	**6.3000e-004**		**2.6589**	**2.6589**	**9.0000e-005**	**0.0000**	**2.6607**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3175	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		7.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.3900e-003	3.3800e-003	0.0129	3.0000e-005	2.1700e-003	5.0000e-005	2.2300e-003	5.8000e-004	5.0000e-005	6.3000e-004		2.6588	2.6588	9.0000e-005		2.6607
Total	**0.3189**	**3.3800e-003**	**0.0129**	**3.0000e-005**	**2.1700e-003**	**5.0000e-005**	**2.2300e-003**	**5.8000e-004**	**5.0000e-005**	**6.3000e-004**		**2.6589**	**2.6589**	**9.0000e-005**	**0.0000**	**2.6607**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	3/31/2018	5	65	

2	Excavation	Site Preparation	4/1/2018	5/31/2018	5	44	
3	Grading	Grading	4/1/2018	5/31/2018	5	44	
4	Construction	Building Construction	6/1/2018	2/28/2019	5	195	
5	Paving	Paving	3/1/2019	4/30/2019	5	43	
6	Landscaping	Trenching	5/1/2019	6/30/2019	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Construction	Cranes	1	8.00	150	0.29
Construction	Forklifts	1	6.00	150	0.20
Construction	Generator Sets	1	6.00	400	0.74
Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Construction	Welders	1	6.00	150	0.45
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36

Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	966.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Construction	5	6.00	2.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	4.6397	51.5427	37.0648	0.0588		2.3209	2.3209		2.1352	2.1352		5,922.3678	5,922.3678	1.8437		5,961.0858
Total	**4.6397**	**51.5427**	**37.0648**	**0.0588**	**0.0000**	**2.3209**	**2.3209**	**0.0000**	**2.1352**	**2.1352**		**5,922.3678**	**5,922.3678**	**1.8437**		**5,961.0858**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.0655**	**0.0801**	**0.9337**	**2.3400e-003**	**0.1886**	**1.4200e-003**	**0.1900**	**0.0500**	**1.3200e-003**	**0.0513**		**181.6789**	**181.6789**	**8.6400e-003**		**181.8603**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	4.6397	51.5427	37.0648	0.0588		2.3209	2.3209		2.1352	2.1352	0.0000	5,922.3678	5,922.3678	1.8437		5,961.0858
Total	**4.6397**	**51.5427**	**37.0648**	**0.0588**	**0.0000**	**2.3209**	**2.3209**	**0.0000**	**2.1352**	**2.1352**	**0.0000**	**5,922.3678**	**5,922.3678**	**1.8437**		**5,961.0858**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.0655**	**0.0801**	**0.9337**	**2.3400e-003**	**0.1886**	**1.4200e-003**	**0.1900**	**0.0500**	**1.3200e-003**	**0.0513**		**181.6789**	**181.6789**	**8.6400e-003**		**181.8603**

3.3 Excavation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.3203	13.2100	9.1528	0.0122		0.8046	0.8046		0.7402	0.7402		1,231.7679	1,231.7679	0.3835		1,239.8207
Total	**1.3203**	**13.2100**	**9.1528**	**0.0122**	**0.5303**	**0.8046**	**1.3348**	**0.0573**	**0.7402**	**0.7974**		**1,231.7679**	**1,231.7679**	**0.3835**		**1,239.8207**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.8200e-003	0.0120	0.1401	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	2.0000e-004	7.7000e-003		27.2518	27.2518	1.3000e-003		27.2790

Total	**9.8200e-003**	**0.0120**	**0.1401**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**2.0000e-004**	**7.7000e-003**		**27.2518**	**27.2518**	**1.3000e-003**		**27.2790**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.3203	13.2100	9.1528	0.0122		0.8046	0.8046		0.7402	0.7402	0.0000	1,231.7679	1,231.7679	0.3835		1,239.8207
Total	**1.3203**	**13.2100**	**9.1528**	**0.0122**	**0.5303**	**0.8046**	**1.3348**	**0.0573**	**0.7402**	**0.7974**	**0.0000**	**1,231.7679**	**1,231.7679**	**0.3835**		**1,239.8207**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.8200e-003	0.0120	0.1401	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	2.0000e-004	7.7000e-003		27.2518	27.2518	1.3000e-003		27.2790
Total	**9.8200e-003**	**0.0120**	**0.1401**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**2.0000e-004**	**7.7000e-003**		**27.2518**	**27.2518**	**1.3000e-003**		**27.2790**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0492	0.0000	6.0492	3.3140	0.0000	3.3140			0.0000			0.0000
Off-Road	4.5771	49.9384	26.1289	0.0686		2.0986	2.0986		1.9521	1.9521		6,861.6794	6,861.6794	1.9975		6,903.6272
Total	**4.5771**	**49.9384**	**26.1289**	**0.0686**	**6.0492**	**2.0986**	**8.1478**	**3.3140**	**1.9521**	**5.2661**		**6,861.6794**	**6,861.6794**	**1.9975**		**6,903.6272**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4176	5.1726	3.8956	0.0165	0.3830	0.0752	0.4581	0.1049	0.0691	0.1740		1,614.5455	1,614.5455	0.0120		1,614.7966
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0721	0.8403	2.1000e-003	0.1698	1.2800e-003	0.1710	0.0450	1.1800e-003	0.0462		163.5110	163.5110	7.7700e-003		163.6742
Total	**0.4765**	**5.2447**	**4.7359**	**0.0186**	**0.5527**	**0.0765**	**0.6292**	**0.1499**	**0.0703**	**0.2202**		**1,778.0565**	**1,778.0565**	**0.0197**		**1,778.4709**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0492	0.0000	6.0492	3.3140	0.0000	3.3140			0.0000			0.0000
Off-Road	4.5771	49.9384	26.1289	0.0686		2.0986	2.0986		1.9521	1.9521	0.0000	6,861.6794	6,861.6794	1.9975		6,903.6272

Total	**4.5771**	**49.9384**	**26.1289**	**0.0686**	**6.0492**	**2.0986**	**8.1478**	**3.3140**	**1.9521**	**5.2661**	**0.0000**	**6,861.6794**	**6,861.6794**	**1.9975**		**6,903.6272**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4176	5.1726	3.8956	0.0165	0.3830	0.0752	0.4581	0.1049	0.0691	0.1740		1,614.5455	1,614.5455	0.0120		1,614.7966
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0721	0.8403	2.1000e-003	0.1698	1.2800e-003	0.1710	0.0450	1.1800e-003	0.0462		163.5110	163.5110	7.7700e-003		163.6742
Total	**0.4765**	**5.2447**	**4.7359**	**0.0186**	**0.5527**	**0.0765**	**0.6292**	**0.1499**	**0.0703**	**0.2202**		**1,778.0565**	**1,778.0565**	**0.0197**		**1,778.4709**

3.5 Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2662	23.8937	13.7796	0.0401		0.9604	0.9604		0.9167	0.9167		4,257.4629	4,257.4629	0.5813		4,269.6695
Total	**2.2662**	**23.8937**	**13.7796**	**0.0401**		**0.9604**	**0.9604**		**0.9167**	**0.9167**		**4,257.4629**	**4,257.4629**	**0.5813**		**4,269.6695**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0189	0.1588	0.1930	4.8000e-004	0.0134	2.4300e-003	0.0158	3.8200e-003	2.2400e-003	6.0500e-003		46.5726	46.5726	3.6000e-004		46.5801
Worker	0.0196	0.0240	0.2801	7.0000e-004	0.0566	4.3000e-004	0.0570	0.0150	3.9000e-004	0.0154		54.5037	54.5037	2.5900e-003		54.5581
Total	**0.0385**	**0.1829**	**0.4731**	**1.1800e-003**	**0.0699**	**2.8600e-003**	**0.0728**	**0.0188**	**2.6300e-003**	**0.0215**		**101.0763**	**101.0763**	**2.9500e-003**		**101.1382**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2662	23.8937	13.7796	0.0401		0.9604	0.9604		0.9167	0.9167	0.0000	4,257.4629	4,257.4629	0.5813		4,269.6695
Total	**2.2662**	**23.8937**	**13.7796**	**0.0401**		**0.9604**	**0.9604**		**0.9167**	**0.9167**	**0.0000**	**4,257.4629**	**4,257.4629**	**0.5813**		**4,269.6695**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0189	0.1588	0.1930	4.8000e-004	0.0134	2.4300e-003	0.0158	3.8200e-003	2.2400e-003	6.0500e-003		46.5726	46.5726	3.6000e-004		46.5801

Worker	0.0196	0.0240	0.2801	7.0000e-004	0.0566	4.3000e-004	0.0570	0.0150	3.9000e-004	0.0154		54.5037	54.5037	2.5900e-003		54.5581
Total	**0.0385**	**0.1829**	**0.4731**	**1.1800e-003**	**0.0699**	**2.8600e-003**	**0.0728**	**0.0188**	**2.6300e-003**	**0.0215**		**101.0763**	**101.0763**	**2.9500e-003**		**101.1382**

3.5 Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1001	21.2661	13.5468	0.0401		0.8574	0.8574		0.8184	0.8184		4,234.1909	4,234.1909	0.5751		4,246.2669
Total	**2.1001**	**21.2661**	**13.5468**	**0.0401**		**0.8574**	**0.8574**		**0.8184**	**0.8184**		**4,234.1909**	**4,234.1909**	**0.5751**		**4,246.2669**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0173	0.1450	0.1799	4.8000e-004	0.0134	2.2600e-003	0.0156	3.8200e-003	2.0800e-003	5.8900e-003		45.7685	45.7685	3.5000e-004		45.7758
Worker	0.0180	0.0219	0.2553	7.0000e-004	0.0566	4.2000e-004	0.0570	0.0150	3.9000e-004	0.0154		52.5511	52.5511	2.4100e-003		52.6017
Total	**0.0353**	**0.1669**	**0.4352**	**1.1800e-003**	**0.0699**	**2.6800e-003**	**0.0726**	**0.0188**	**2.4700e-003**	**0.0213**		**98.3196**	**98.3196**	**2.7600e-003**		**98.3775**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1001	21.2661	13.5468	0.0401		0.8574	0.8574		0.8184	0.8184	0.0000	4,234.1909	4,234.1909	0.5751		4,246.2669
Total	**2.1001**	**21.2661**	**13.5468**	**0.0401**		**0.8574**	**0.8574**		**0.8184**	**0.8184**	**0.0000**	**4,234.1909**	**4,234.1909**	**0.5751**		**4,246.2669**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0173	0.1450	0.1799	4.8000e-004	0.0134	2.2600e-003	0.0156	3.8200e-003	2.0800e-003	5.8900e-003		45.7685	45.7685	3.5000e-004		45.7758
Worker	0.0180	0.0219	0.2553	7.0000e-004	0.0566	4.2000e-004	0.0570	0.0150	3.9000e-004	0.0154		52.5511	52.5511	2.4100e-003		52.6017
Total	**0.0353**	**0.1669**	**0.4352**	**1.1800e-003**	**0.0699**	**2.6800e-003**	**0.0726**	**0.0188**	**2.4700e-003**	**0.0213**		**98.3196**	**98.3196**	**2.7600e-003**		**98.3775**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4720	17.3446	14.0901	0.0289		0.7254	0.7254		0.6674	0.6674		2,858.2824	2,858.2824	0.9043		2,877.2733

Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4720**	**17.3446**	**14.0901**	**0.0289**		**0.7254**	**0.7254**		**0.6674**	**0.6674**		**2,858.2824**	**2,858.2824**	**0.9043**		**2,877.2733**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4720	17.3446	14.0901	0.0289		0.7254	0.7254		0.6674	0.6674	0.0000	2,858.2824	2,858.2824	0.9043		2,877.2733
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4720**	**17.3446**	**14.0901**	**0.0289**		**0.7254**	**0.7254**		**0.6674**	**0.6674**	**0.0000**	**2,858.2824**	**2,858.2824**	**0.9043**		**2,877.2733**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

3.7 Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2880	2.8916	2.8487	3.8400e-003		0.1930	0.1930		0.1776	0.1776		380.4642	380.4642	0.1204		382.9920
Total	**0.2880**	**2.8916**	**2.8487**	**3.8400e-003**		**0.1930**	**0.1930**		**0.1776**	**0.1776**		**380.4642**	**380.4642**	**0.1204**		**382.9920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0183	0.2128	5.8000e-004	0.0881	3.5000e-004	0.0885	0.0226	3.2000e-004	0.0229		43.7926	43.7926	2.0100e-003		43.8348
Total	**0.0150**	**0.0183**	**0.2128**	**5.8000e-004**	**0.0881**	**3.5000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**43.7926**	**43.7926**	**2.0100e-003**		**43.8348**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2880	2.8916	2.8487	3.8400e-003		0.1930	0.1930		0.1776	0.1776	0.0000	380.4642	380.4642	0.1204		382.9920
Total	**0.2880**	**2.8916**	**2.8487**	**3.8400e-003**		**0.1930**	**0.1930**		**0.1776**	**0.1776**	**0.0000**	**380.4642**	**380.4642**	**0.1204**		**382.9920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0183	0.2128	5.8000e-004	0.0881	3.5000e-004	0.0885	0.0226	3.2000e-004	0.0229		43.7926	43.7926	2.0100e-003		43.8348
Total	**0.0150**	**0.0183**	**0.2128**	**5.8000e-004**	**0.0881**	**3.5000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**43.7926**	**43.7926**	**2.0100e-003**		**43.8348**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.3900e-003	3.3800e-003	0.0129	3.0000e-005	2.1700e-003	5.0000e-005	2.2300e-003	5.8000e-004	5.0000e-005	6.3000e-004		2.6588	2.6588	9.0000e-005		2.6607
Unmitigated	1.3900e-003	3.3800e-003	0.0129	3.0000e-005	2.1700e-003	5.0000e-005	2.2300e-003	5.8000e-004	5.0000e-005	6.3000e-004		2.6588	2.6588	9.0000e-005		2.6607

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.48	0.48	0.48	1,018	1,018
Total	0.48	0.48	0.48	1,018	1,018

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3175	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		7.0000e-005
Unmitigated	0.3175	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		7.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0374					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2801					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		7.0000e-005
Total	**0.3175**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**7.0000e-005**	**7.0000e-005**	**0.0000**		**7.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0374					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2801					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		7.0000e-005
Total	**0.3175**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**7.0000e-005**	**7.0000e-005**	**0.0000**		**7.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.25	11,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 2 lot acreage equals 6 but not sure how to break it up into 2a, 2b, etc.

Construction Phase - Per Phase 2 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,900 (35,000 minus 4,100) cy total divided by 4 Sub-phases in Phase 2)
Converted cy -cy factors to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	131.00
tblConstructionPhase	NumDays	10.00	65.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	5.00	64.00
tblConstructionPhase	NumDays	1.00	44.00
tblConstructionPhase	PhaseEndDate	3/30/2018	3/31/2018
tblConstructionPhase	PhaseEndDate	8/1/2018	5/31/2018
tblConstructionPhase	PhaseStartDate	6/1/2018	4/1/2018
tblGrading	AcresOfGrading	44.00	0.25
tblGrading	MaterialImported	0.00	7,725.00
tblLandUse	LandUseSquareFeet	0.00	11,000.00
tblLandUse	LotAcreage	0.00	0.25
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00

tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	tons/yr										MT/yr					
2018	0.4617	4.9645	3.2356	7.1900e-003	0.1682	0.2125	0.3807	0.0805	0.1982	0.2787	0.0000	663.9575	663.9575	0.1459	0.0000	667.0218
2019	0.0425	0.4704	0.4161	8.0000e-004	5.7200e-003	0.0220	0.0277	1.4900e-003	0.0202	0.0217	0.0000	70.7333	70.7333	0.0214	0.0000	71.1831
Total	**0.5042**	**5.4348**	**3.6517**	**7.9900e-003**	**0.1739**	**0.2345**	**0.4085**	**0.0820**	**0.2184**	**0.3004**	**0.0000**	**734.6908**	**734.6908**	**0.1673**	**0.0000**	**738.2049**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.4617	4.9645	3.2356	7.1900e-003	0.1682	0.2125	0.3807	0.0805	0.1982	0.2787	0.0000	663.9567	663.9567	0.1459	0.0000	667.0210
2019	0.0425	0.4704	0.4161	8.0000e-004	5.7200e-003	0.0220	0.0277	1.4900e-003	0.0202	0.0217	0.0000	70.7333	70.7333	0.0214	0.0000	71.1831
Total	**0.5042**	**5.4348**	**3.6517**	**7.9900e-003**	**0.1739**	**0.2345**	**0.4085**	**0.0820**	**0.2184**	**0.3004**	**0.0000**	**734.6900**	**734.6900**	**0.1673**	**0.0000**	**738.2041**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0487	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0487**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0487	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0487**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	3/31/2018	5	65	
2	Excavation	Site Preparation	4/1/2018	5/31/2018	5	44	
3	Grading	Grading	4/1/2018	5/31/2018	5	44	
4	Construction	Building Construction	6/1/2018	11/30/2018	5	131	
5	Paving	Paving	12/1/2018	2/28/2019	5	64	
6	Landscaping	Trenching	3/1/2019	5/31/2019	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.25

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Construction	Cranes	1	8.00	150	0.29
Construction	Forklifts	1	6.00	150	0.20
Construction	Generator Sets	1	6.00	400	0.74
Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Construction	Welders	1	6.00	150	0.45

Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	966.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Construction	5	5.00	2.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.1508	1.6751	1.2046	1.9100e-003		0.0754	0.0754		0.0694	0.0694	0.0000	174.6122	174.6122	0.0544	0.0000	175.7537
Total	**0.1508**	**1.6751**	**1.2046**	**1.9100e-003**	**0.0000**	**0.0754**	**0.0754**	**0.0000**	**0.0694**	**0.0694**	**0.0000**	**174.6122**	**174.6122**	**0.0544**	**0.0000**	**175.7537**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9500e-003	2.9600e-003	0.0282	7.0000e-005	5.9000e-003	5.0000e-005	5.9500e-003	1.5700e-003	4.0000e-005	1.6100e-003	0.0000	4.9705	4.9705	2.5000e-004	0.0000	4.9758
Total	**1.9500e-003**	**2.9600e-003**	**0.0282**	**7.0000e-005**	**5.9000e-003**	**5.0000e-005**	**5.9500e-003**	**1.5700e-003**	**4.0000e-005**	**1.6100e-003**	**0.0000**	**4.9705**	**4.9705**	**2.5000e-004**	**0.0000**	**4.9758**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1508	1.6751	1.2046	1.9100e-003		0.0754	0.0754		0.0694	0.0694	0.0000	174.6120	174.6120	0.0544	0.0000	175.7535
Total	**0.1508**	**1.6751**	**1.2046**	**1.9100e-003**	**0.0000**	**0.0754**	**0.0754**	**0.0000**	**0.0694**	**0.0694**	**0.0000**	**174.6120**	**174.6120**	**0.0544**	**0.0000**	**175.7535**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9500e-003	2.9600e-003	0.0282	7.0000e-005	5.9000e-003	5.0000e-005	5.9500e-003	1.5700e-003	4.0000e-005	1.6100e-003	0.0000	4.9705	4.9705	2.5000e-004	0.0000	4.9758
Total	**1.9500e-003**	**2.9600e-003**	**0.0282**	**7.0000e-005**	**5.9000e-003**	**5.0000e-005**	**5.9500e-003**	**1.5700e-003**	**4.0000e-005**	**1.6100e-003**	**0.0000**	**4.9705**	**4.9705**	**2.5000e-004**	**0.0000**	**4.9758**

3.3 Excavation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0117	0.0000	0.0117	1.2600e-003	0.0000	1.2600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0291	0.2906	0.2014	2.7000e-004		0.0177	0.0177		0.0163	0.0163	0.0000	24.5837	24.5837	7.6500e-003	0.0000	24.7444
Total	**0.0291**	**0.2906**	**0.2014**	**2.7000e-004**	**0.0117**	**0.0177**	**0.0294**	**1.2600e-003**	**0.0163**	**0.0175**	**0.0000**	**24.5837**	**24.5837**	**7.6500e-003**	**0.0000**	**24.7444**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	3.0000e-004	2.8600e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5047	0.5047	3.0000e-005	0.0000	0.5052
Total	**2.0000e-004**	**3.0000e-004**	**2.8600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5047**	**0.5047**	**3.0000e-005**	**0.0000**	**0.5052**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0117	0.0000	0.0117	1.2600e-003	0.0000	1.2600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0291	0.2906	0.2014	2.7000e-004		0.0177	0.0177		0.0163	0.0163	0.0000	24.5837	24.5837	7.6500e-003	0.0000	24.7444
Total	**0.0291**	**0.2906**	**0.2014**	**2.7000e-004**	**0.0117**	**0.0177**	**0.0294**	**1.2600e-003**	**0.0163**	**0.0175**	**0.0000**	**24.5837**	**24.5837**	**7.6500e-003**	**0.0000**	**24.7444**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	3.0000e-004	2.8600e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5047	0.5047	3.0000e-005	0.0000	0.5052
Total	**2.0000e-004**	**3.0000e-004**	**2.8600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5047**	**0.5047**	**3.0000e-005**	**0.0000**	**0.5052**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1331	0.0000	0.1331	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1007	1.0987	0.5748	1.5100e-003		0.0462	0.0462		0.0430	0.0430	0.0000	136.9458	136.9458	0.0399	0.0000	137.7830
Total	**0.1007**	**1.0987**	**0.5748**	**1.5100e-003**	**0.1331**	**0.0462**	**0.1792**	**0.0729**	**0.0430**	**0.1159**	**0.0000**	**136.9458**	**136.9458**	**0.0399**	**0.0000**	**137.7830**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0100	0.1180	0.1120	3.6000e-004	8.1500e-003	1.6600e-003	9.8100e-003	2.2400e-003	1.5200e-003	3.7600e-003	0.0000	32.1917	32.1917	2.4000e-004	0.0000	32.1967
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1900e-003	1.8000e-003	0.0172	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.0282	3.0282	1.6000e-004	0.0000	3.0314
Total	**0.0112**	**0.1198**	**0.1292**	**4.0000e-004**	**0.0117**	**1.6900e-003**	**0.0134**	**3.2000e-003**	**1.5500e-003**	**4.7400e-003**	**0.0000**	**35.2199**	**35.2199**	**4.0000e-004**	**0.0000**	**35.2282**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.1331	0.0000	0.1331	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1007	1.0986	0.5748	1.5100e-003		0.0462	0.0462		0.0430	0.0430	0.0000	136.9457	136.9457	0.0399	0.0000	137.7829
Total	**0.1007**	**1.0986**	**0.5748**	**1.5100e-003**	**0.1331**	**0.0462**	**0.1792**	**0.0729**	**0.0430**	**0.1159**	**0.0000**	**136.9457**	**136.9457**	**0.0399**	**0.0000**	**137.7829**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0100	0.1180	0.1120	3.6000e-004	8.1500e-003	1.6600e-003	9.8100e-003	2.2400e-003	1.5200e-003	3.7600e-003	0.0000	32.1917	32.1917	2.4000e-004	0.0000	32.1967
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1900e-003	1.8000e-003	0.0172	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.0282	3.0282	1.6000e-004	0.0000	3.0314
Total	**0.0112**	**0.1198**	**0.1292**	**4.0000e-004**	**0.0117**	**1.6900e-003**	**0.0134**	**3.2000e-003**	**1.5500e-003**	**4.7400e-003**	**0.0000**	**35.2199**	**35.2199**	**4.0000e-004**	**0.0000**	**35.2282**

3.5 Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1484	1.5650	0.9026	2.6300e-003		0.0629	0.0629		0.0601	0.0601	0.0000	252.9810	252.9810	0.0345	0.0000	253.7063
Total	**0.1484**	**1.5650**	**0.9026**	**2.6300e-003**		**0.0629**	**0.0629**		**0.0601**	**0.0601**	**0.0000**	**252.9810**	**252.9810**	**0.0345**	**0.0000**	**253.7063**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3900e-003	0.0108	0.0172	3.0000e-005	8.5000e-004	1.6000e-004	1.0100e-003	2.4000e-004	1.5000e-004	3.9000e-004	0.0000	2.7585	2.7585	2.0000e-005	0.0000	2.7590
Worker	9.8000e-004	1.4900e-003	0.0142	4.0000e-005	2.9700e-003	2.0000e-005	3.0000e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.5044	2.5044	1.3000e-004	0.0000	2.5071
Total	**2.3700e-003**	**0.0122**	**0.0314**	**7.0000e-005**	**3.8200e-003**	**1.8000e-004**	**4.0100e-003**	**1.0300e-003**	**1.7000e-004**	**1.2000e-003**	**0.0000**	**5.2629**	**5.2629**	**1.5000e-004**	**0.0000**	**5.2660**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1484	1.5650	0.9026	2.6300e-003		0.0629	0.0629		0.0601	0.0601	0.0000	252.9807	252.9807	0.0345	0.0000	253.7060
Total	**0.1484**	**1.5650**	**0.9026**	**2.6300e-003**		**0.0629**	**0.0629**		**0.0601**	**0.0601**	**0.0000**	**252.9807**	**252.9807**	**0.0345**	**0.0000**	**253.7060**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3900e-003	0.0108	0.0172	3.0000e-005	8.5000e-004	1.6000e-004	1.0100e-003	2.4000e-004	1.5000e-004	3.9000e-004	0.0000	2.7585	2.7585	2.0000e-005	0.0000	2.7590
Worker	9.8000e-004	1.4900e-003	0.0142	4.0000e-005	2.9700e-003	2.0000e-005	3.0000e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.5044	2.5044	1.3000e-004	0.0000	2.5071
Total	**2.3700e-003**	**0.0122**	**0.0314**	**7.0000e-005**	**3.8200e-003**	**1.8000e-004**	**4.0100e-003**	**1.0300e-003**	**1.7000e-004**	**1.2000e-003**	**0.0000**	**5.2629**	**5.2629**	**1.5000e-004**	**0.0000**	**5.2660**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0166	0.1990	0.1539	3.0000e-004		8.3900e-003	8.3900e-003		7.7200e-003	7.7200e-003	0.0000	27.6724	27.6724	8.6100e-003	0.0000	27.8533
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0166**	**0.1990**	**0.1539**	**3.0000e-004**		**8.3900e-003**	**8.3900e-003**		**7.7200e-003**	**7.7200e-003**	**0.0000**	**27.6724**	**27.6724**	**8.6100e-003**	**0.0000**	**27.8533**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	7.2000e-004	6.8200e-003	2.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2044	1.2044	6.0000e-005	0.0000	1.2057
Total	**4.7000e-004**	**7.2000e-004**	**6.8200e-003**	**2.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2044**	**1.2044**	**6.0000e-005**	**0.0000**	**1.2057**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0166	0.1990	0.1539	3.0000e-004		8.3900e-003	8.3900e-003		7.7200e-003	7.7200e-003	0.0000	27.6724	27.6724	8.6100e-003	0.0000	27.8533
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0166**	**0.1990**	**0.1539**	**3.0000e-004**		**8.3900e-003**	**8.3900e-003**		**7.7200e-003**	**7.7200e-003**	**0.0000**	**27.6724**	**27.6724**	**8.6100e-003**	**0.0000**	**27.8533**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	7.2000e-004	6.8200e-003	2.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2044	1.2044	6.0000e-005	0.0000	1.2057
Total	**4.7000e-004**	**7.2000e-004**	**6.8200e-003**	**2.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2044**	**1.2044**	**6.0000e-005**	**0.0000**	**1.2057**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	0.0317	0.3729	0.3029	6.2000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.7493	55.7493	0.0176	0.0000	56.1197
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0317**	**0.3729**	**0.3029**	**6.2000e-004**		**0.0156**	**0.0156**		**0.0144**	**0.0144**	**0.0000**	**55.7493**	**55.7493**	**0.0176**	**0.0000**	**56.1197**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	1.3400e-003	0.0127	3.0000e-005	2.9300e-003	2.0000e-005	2.9500e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.3776	2.3776	1.2000e-004	0.0000	2.3801
Total	**8.8000e-004**	**1.3400e-003**	**0.0127**	**3.0000e-005**	**2.9300e-003**	**2.0000e-005**	**2.9500e-003**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**0.0000**	**2.3776**	**2.3776**	**1.2000e-004**	**0.0000**	**2.3801**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0317	0.3729	0.3029	6.2000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.7492	55.7492	0.0176	0.0000	56.1196
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0317**	**0.3729**	**0.3029**	**6.2000e-004**		**0.0156**	**0.0156**		**0.0144**	**0.0144**	**0.0000**	**55.7492**	**55.7492**	**0.0176**	**0.0000**	**56.1196**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	1.3400e-003	0.0127	3.0000e-005	2.9300e-003	2.0000e-005	2.9500e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.3776	2.3776	1.2000e-004	0.0000	2.3801
Total	**8.8000e-004**	**1.3400e-003**	**0.0127**	**3.0000e-005**	**2.9300e-003**	**2.0000e-005**	**2.9500e-003**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**0.0000**	**2.3776**	**2.3776**	**1.2000e-004**	**0.0000**	**2.3801**

3.7 Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5000e-003	0.0954	0.0940	1.3000e-004		6.3700e-003	6.3700e-003		5.8600e-003	5.8600e-003	0.0000	11.3900	11.3900	3.6000e-003	0.0000	11.4657
Total	**9.5000e-003**	**0.0954**	**0.0940**	**1.3000e-004**		**6.3700e-003**	**6.3700e-003**		**5.8600e-003**	**5.8600e-003**	**0.0000**	**11.3900**	**11.3900**	**3.6000e-003**	**0.0000**	**11.4657**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	6.8000e-004	6.4800e-003	2.0000e-005	2.7900e-003	1.0000e-005	2.8000e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	1.2165	1.2165	6.0000e-005	0.0000	1.2177
Total	**4.5000e-004**	**6.8000e-004**	**6.4800e-003**	**2.0000e-005**	**2.7900e-003**	**1.0000e-005**	**2.8000e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**1.2165**	**1.2165**	**6.0000e-005**	**0.0000**	**1.2177**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5000e-003	0.0954	0.0940	1.3000e-004		6.3700e-003	6.3700e-003		5.8600e-003	5.8600e-003	0.0000	11.3900	11.3900	3.6000e-003	0.0000	11.4657
Total	**9.5000e-003**	**0.0954**	**0.0940**	**1.3000e-004**		**6.3700e-003**	**6.3700e-003**		**5.8600e-003**	**5.8600e-003**	**0.0000**	**11.3900**	**11.3900**	**3.6000e-003**	**0.0000**	**11.4657**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	6.8000e-004	6.4800e-003	2.0000e-005	2.7900e-003	1.0000e-005	2.8000e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	1.2165	1.2165	6.0000e-005	0.0000	1.2177

Total	**4.5000e-004**	**6.8000e-004**	**6.4800e-003**	**2.0000e-005**	**2.7900e-003**	**1.0000e-005**	**2.8000e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**1.2165**	**1.2165**	**6.0000e-005**	**0.0000**	**1.2177**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0487	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0487	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	0.0430					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Architectural Coating	5.7400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0487**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	0.0430					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Architectural Coating	5.7400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0487**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.25	11,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 2 lot acreage equals 6 but not sure how to break it up into 2a, 2b, etc.

Construction Phase - Per Phase 2 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,900 (35,000 minus 4,100) cy total divided by 4 Sub-phases in Phase 2)
Conv. ated ac. are factors to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	131.00
tblConstructionPhase	NumDays	10.00	65.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	5.00	64.00
tblConstructionPhase	NumDays	1.00	44.00
tblConstructionPhase	PhaseEndDate	3/30/2018	3/31/2018
tblConstructionPhase	PhaseEndDate	8/1/2018	5/31/2018
tblConstructionPhase	PhaseStartDate	6/1/2018	4/1/2018
tblGrading	AcresOfGrading	44.00	0.25
tblGrading	MaterialImported	0.00	7,725.00
tblLandUse	LandUseSquareFeet	0.00	11,000.00
tblLandUse	LotAcreage	0.00	0.25
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00

tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	lb/day										lb/day					
2018	6.3837	68.4051	40.1577	0.0998	7.1592	2.9798	10.1390	3.5286	2.7628	6.2913	0.0000	9,898.7557	9,898.7557	2.4020	0.0000	9,949.1978
2019	1.5169	17.3993	14.7284	0.0306	0.1415	0.7265	0.8679	0.0375	0.6684	0.7059	0.0000	2,989.6602	2,989.6602	0.9104	0.0000	3,008.7776
Total	**7.9006**	**85.8044**	**54.8860**	**0.1304**	**7.3007**	**3.7063**	**11.0070**	**3.5661**	**3.4311**	**6.9972**	**0.0000**	**12,888.4159**	**12,888.4159**	**3.3124**	**0.0000**	**12,957.9755**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	6.3837	68.4051	40.1577	0.0998	7.1592	2.9798	10.1390	3.5286	2.7628	6.2913	0.0000	9,898.7557	9,898.7557	2.4020	0.0000	9,949.1978
2019	1.5169	17.3993	14.7284	0.0306	0.1415	0.7265	0.8679	0.0375	0.6684	0.7059	0.0000	2,989.6602	2,989.6602	0.9104	0.0000	3,008.7776
Total	**7.9006**	**85.8044**	**54.8860**	**0.1304**	**7.3007**	**3.7063**	**11.0070**	**3.5661**	**3.4311**	**6.9972**	**0.0000**	**12,888.4159**	**12,888.4159**	**3.3124**	**0.0000**	**12,957.9754**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2668	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2668**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2668	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2668**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	3/31/2018	5	65	
2	Excavation	Site Preparation	4/1/2018	5/31/2018	5	44	
3	Grading	Grading	4/1/2018	5/31/2018	5	44	
4	Construction	Building Construction	6/1/2018	11/30/2018	5	131	

5	Paving	Paving	12/1/2018	2/28/2019	5	64	
6	Landscaping	Trenching	3/1/2019	5/31/2019	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.25

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Construction	Cranes	1	8.00	150	0.29
Construction	Forklifts	1	6.00	150	0.20
Construction	Generator Sets	1	6.00	400	0.74
Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Construction	Welders	1	6.00	150	0.45
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37

Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	966.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Construction	5	5.00	2.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	4.6397	51.5427	37.0648	0.0588		2.3209	2.3209		2.1352	2.1352		5,922.3678	5,922.3678	1.8437		5,961.0858
Total	**4.6397**	**51.5427**	**37.0648**	**0.0588**	**0.0000**	**2.3209**	**2.3209**	**0.0000**	**2.1352**	**2.1352**		**5,922.3678**	**5,922.3678**	**1.8437**		**5,961.0858**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.0655**	**0.0801**	**0.9337**	**2.3400e-003**	**0.1886**	**1.4200e-003**	**0.1900**	**0.0500**	**1.3200e-003**	**0.0513**		**181.6789**	**181.6789**	**8.6400e-003**		**181.8603**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	4.6397	51.5427	37.0648	0.0588		2.3209	2.3209		2.1352	2.1352	0.0000	5,922.3678	5,922.3678	1.8437		5,961.0858
Total	**4.6397**	**51.5427**	**37.0648**	**0.0588**	**0.0000**	**2.3209**	**2.3209**	**0.0000**	**2.1352**	**2.1352**	**0.0000**	**5,922.3678**	**5,922.3678**	**1.8437**		**5,961.0858**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.0655**	**0.0801**	**0.9337**	**2.3400e-003**	**0.1886**	**1.4200e-003**	**0.1900**	**0.0500**	**1.3200e-003**	**0.0513**		**181.6789**	**181.6789**	**8.6400e-003**		**181.8603**

3.3 Excavation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.3203	13.2100	9.1528	0.0122		0.8046	0.8046		0.7402	0.7402		1,231.7679	1,231.7679	0.3835		1,239.8207
Total	**1.3203**	**13.2100**	**9.1528**	**0.0122**	**0.5303**	**0.8046**	**1.3348**	**0.0573**	**0.7402**	**0.7974**		**1,231.7679**	**1,231.7679**	**0.3835**		**1,239.8207**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.8200e-003	0.0120	0.1401	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	2.0000e-004	7.7000e-003		27.2518	27.2518	1.3000e-003		27.2790
Total	**9.8200e-003**	**0.0120**	**0.1401**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**2.0000e-004**	**7.7000e-003**		**27.2518**	**27.2518**	**1.3000e-003**		**27.2790**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.3203	13.2100	9.1528	0.0122		0.8046	0.8046		0.7402	0.7402	0.0000	1,231.7679	1,231.7679	0.3835		1,239.8207
Total	**1.3203**	**13.2100**	**9.1528**	**0.0122**	**0.5303**	**0.8046**	**1.3348**	**0.0573**	**0.7402**	**0.7974**	**0.0000**	**1,231.7679**	**1,231.7679**	**0.3835**		**1,239.8207**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.8200e-003	0.0120	0.1401	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	2.0000e-004	7.7000e-003		27.2518	27.2518	1.3000e-003		27.2790
Total	**9.8200e-003**	**0.0120**	**0.1401**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**2.0000e-004**	**7.7000e-003**		**27.2518**	**27.2518**	**1.3000e-003**		**27.2790**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					6.0480	0.0000	6.0480	3.3139	0.0000	3.3139			0.0000			0.0000
Off-Road	4.5771	49.9384	26.1289	0.0686		2.0986	2.0986		1.9521	1.9521		6,861.6794	6,861.6794	1.9975		6,903.6272
Total	**4.5771**	**49.9384**	**26.1289**	**0.0686**	**6.0480**	**2.0986**	**8.1466**	**3.3139**	**1.9521**	**5.2660**		**6,861.6794**	**6,861.6794**	**1.9975**		**6,903.6272**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4176	5.1726	3.8956	0.0165	0.3830	0.0752	0.4581	0.1049	0.0691	0.1740		1,614.5455	1,614.5455	0.0120		1,614.7966
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0721	0.8403	2.1000e-003	0.1698	1.2800e-003	0.1710	0.0450	1.1800e-003	0.0462		163.5110	163.5110	7.7700e-003		163.6742
Total	**0.4765**	**5.2447**	**4.7359**	**0.0186**	**0.5527**	**0.0765**	**0.6292**	**0.1499**	**0.0703**	**0.2202**		**1,778.0565**	**1,778.0565**	**0.0197**		**1,778.4709**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0480	0.0000	6.0480	3.3139	0.0000	3.3139			0.0000			0.0000
Off-Road	4.5771	49.9384	26.1289	0.0686		2.0986	2.0986		1.9521	1.9521	0.0000	6,861.6794	6,861.6794	1.9975		6,903.6272
Total	**4.5771**	**49.9384**	**26.1289**	**0.0686**	**6.0480**	**2.0986**	**8.1466**	**3.3139**	**1.9521**	**5.2660**	**0.0000**	**6,861.6794**	**6,861.6794**	**1.9975**		**6,903.6272**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4176	5.1726	3.8956	0.0165	0.3830	0.0752	0.4581	0.1049	0.0691	0.1740		1,614.5455	1,614.5455	0.0120		1,614.7966
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0721	0.8403	2.1000e-003	0.1698	1.2800e-003	0.1710	0.0450	1.1800e-003	0.0462		163.5110	163.5110	7.7700e-003		163.6742
Total	**0.4765**	**5.2447**	**4.7359**	**0.0186**	**0.5527**	**0.0765**	**0.6292**	**0.1499**	**0.0703**	**0.2202**		**1,778.0565**	**1,778.0565**	**0.0197**		**1,778.4709**

3.5 Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2662	23.8937	13.7796	0.0401		0.9604	0.9604		0.9167	0.9167		4,257.4629	4,257.4629	0.5813		4,269.6695
Total	**2.2662**	**23.8937**	**13.7796**	**0.0401**		**0.9604**	**0.9604**		**0.9167**	**0.9167**		**4,257.4629**	**4,257.4629**	**0.5813**		**4,269.6695**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0189	0.1588	0.1930	4.8000e-004	0.0134	2.4300e-003	0.0158	3.8200e-003	2.2400e-003	6.0500e-003		46.5726	46.5726	3.6000e-004		46.5801
Worker	0.0164	0.0200	0.2334	5.8000e-004	0.0472	3.6000e-004	0.0475	0.0125	3.3000e-004	0.0128		45.4197	45.4197	2.1600e-003		45.4651
Total	**0.0352**	**0.1789**	**0.4264**	**1.0600e-003**	**0.0605**	**2.7900e-003**	**0.0633**	**0.0163**	**2.5700e-003**	**0.0189**		**91.9923**	**91.9923**	**2.5200e-003**		**92.0452**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2662	23.8937	13.7796	0.0401		0.9604	0.9604		0.9167	0.9167	0.0000	4,257.4629	4,257.4629	0.5813		4,269.6695
Total	**2.2662**	**23.8937**	**13.7796**	**0.0401**		**0.9604**	**0.9604**		**0.9167**	**0.9167**	**0.0000**	**4,257.4629**	**4,257.4629**	**0.5813**		**4,269.6695**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0189	0.1588	0.1930	4.8000e-004	0.0134	2.4300e-003	0.0158	3.8200e-003	2.2400e-003	6.0500e-003		46.5726	46.5726	3.6000e-004		46.5801
Worker	0.0164	0.0200	0.2334	5.8000e-004	0.0472	3.6000e-004	0.0475	0.0125	3.3000e-004	0.0128		45.4197	45.4197	2.1600e-003		45.4651
Total	**0.0352**	**0.1789**	**0.4264**	**1.0600e-003**	**0.0605**	**2.7900e-003**	**0.0633**	**0.0163**	**2.5700e-003**	**0.0189**		**91.9923**	**91.9923**	**2.5200e-003**		**92.0452**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5788	18.9478	14.6533	0.0289		0.7993	0.7993		0.7354	0.7354		2,905.1076	2,905.1076	0.9044		2,924.1000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5788**	**18.9478**	**14.6533**	**0.0289**		**0.7993**	**0.7993**		**0.7354**	**0.7354**		**2,905.1076**	**2,905.1076**	**0.9044**		**2,924.1000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0491	0.0601	0.7003	1.7500e-003	0.1415	1.0700e-003	0.1425	0.0375	9.9000e-004	0.0385		136.2592	136.2592	6.4800e-003		136.3952
Total	**0.0491**	**0.0601**	**0.7003**	**1.7500e-003**	**0.1415**	**1.0700e-003**	**0.1425**	**0.0375**	**9.9000e-004**	**0.0385**		**136.2592**	**136.2592**	**6.4800e-003**		**136.3952**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	1.5788	18.9478	14.6533	0.0289		0.7993	0.7993		0.7354	0.7354	0.0000	2,905.1076	2,905.1076	0.9044		2,924.1000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5788**	**18.9478**	**14.6533**	**0.0289**		**0.7993**	**0.7993**		**0.7354**	**0.7354**	**0.0000**	**2,905.1076**	**2,905.1076**	**0.9044**		**2,924.1000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0491	0.0601	0.7003	1.7500e-003	0.1415	1.0700e-003	0.1425	0.0375	9.9000e-004	0.0385		136.2592	136.2592	6.4800e-003		136.3952
Total	**0.0491**	**0.0601**	**0.7003**	**1.7500e-003**	**0.1415**	**1.0700e-003**	**0.1425**	**0.0375**	**9.9000e-004**	**0.0385**		**136.2592**	**136.2592**	**6.4800e-003**		**136.3952**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4720	17.3446	14.0901	0.0289		0.7254	0.7254		0.6674	0.6674		2,858.2824	2,858.2824	0.9043		2,877.2733
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4720**	**17.3446**	**14.0901**	**0.0289**		**0.7254**	**0.7254**		**0.6674**	**0.6674**		**2,858.2824**	**2,858.2824**	**0.9043**		**2,877.2733**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4720	17.3446	14.0901	0.0289		0.7254	0.7254		0.6674	0.6674	0.0000	2,858.2824	2,858.2824	0.9043		2,877.2733
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4720**	**17.3446**	**14.0901**	**0.0289**		**0.7254**	**0.7254**		**0.6674**	**0.6674**	**0.0000**	**2,858.2824**	**2,858.2824**	**0.9043**		**2,877.2733**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

3.7 Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Off-Road	0.2880	2.8916	2.8487	3.8400e-003		0.1930	0.1930		0.1776	0.1776		380.4642	380.4642	0.1204		382.9920
Total	**0.2880**	**2.8916**	**2.8487**	**3.8400e-003**		**0.1930**	**0.1930**		**0.1776**	**0.1776**		**380.4642**	**380.4642**	**0.1204**		**382.9920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0183	0.2128	5.8000e-004	0.0881	3.5000e-004	0.0885	0.0226	3.2000e-004	0.0229		43.7926	43.7926	2.0100e-003		43.8348

Total	**0.0150**	**0.0183**	**0.2128**	**5.8000e-004**	**0.0881**	**3.5000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**43.7926**	**43.7926**	**2.0100e-003**		**43.8348**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2880	2.8916	2.8487	3.8400e-003		0.1930	0.1930		0.1776	0.1776	0.0000	380.4642	380.4642	0.1204		382.9920
Total	**0.2880**	**2.8916**	**2.8487**	**3.8400e-003**		**0.1930**	**0.1930**		**0.1776**	**0.1776**	**0.0000**	**380.4642**	**380.4642**	**0.1204**		**382.9920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0183	0.2128	5.8000e-004	0.0881	3.5000e-004	0.0885	0.0226	3.2000e-004	0.0229		43.7926	43.7926	2.0100e-003		43.8348
Total	**0.0150**	**0.0183**	**0.2128**	**5.8000e-004**	**0.0881**	**3.5000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**43.7926**	**43.7926**	**2.0100e-003**		**43.8348**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2668	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.2668	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.2354					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Architectural Coating	0.0314					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2668**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.2354					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Architectural Coating	0.0314					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2668**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	12.90	Acre	12.90	563,062.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 2 lot acreage equals 6 but not sure how to break it up into 2a, 2b, etc.

Construction Phase - Per Phase 2 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,900 (35,000 minus 4,100) cy total divided by 4 Sub-phases in Phase 2)

Con. orted sq. are footage to acres

Sequestration -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	30.00	130.00
tblConstructionPhase	NumDays	20.00	89.00
tblConstructionPhase	NumDays	10.00	130.00
tblConstructionPhase	PhaseEndDate	3/30/2018	3/31/2018
tblConstructionPhase	PhaseEndDate	3/29/2019	9/30/2018
tblConstructionPhase	PhaseEndDate	9/28/2018	9/30/2018
tblConstructionPhase	PhaseEndDate	7/31/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	10/1/2018	4/1/2018
tblConstructionPhase	PhaseStartDate	2/1/2019	1/1/2019
tblGrading	AcresOfGrading	130.00	12.90
tblGrading	MaterialImported	0.00	7,725.00
tblLandUse	LandUseSquareFeet	561,924.00	563,062.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	97.00	120.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSequestration	NumberOfNewTrees	0.00	1,500.00
tblTripsAndVMT	HaulingTripNumber	966.00	875.00
tblTripsAndVMT	WorkerTripNumber	20.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.7782	8.5398	5.8660	0.0103	1.6197	0.3864	2.0061	0.8722	0.3555	1.2277	0.0000	933.9374	933.9374	0.2755	0.0000	939.7220
2019	0.0369	0.3880	0.3652	6.3000e-004	7.0200e-003	0.0208	0.0279	1.8200e-003	0.0192	0.0210	0.0000	55.7310	55.7310	0.0167	0.0000	56.0808
Total	**0.8150**	**8.9278**	**6.2312**	**0.0109**	**1.6267**	**0.4072**	**2.0339**	**0.8740**	**0.3746**	**1.2486**	**0.0000**	**989.6684**	**989.6684**	**0.2921**	**0.0000**	**995.8028**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.7782	8.5398	5.8660	0.0103	1.6197	0.3864	2.0061	0.8722	0.3555	1.2277	0.0000	933.9363	933.9363	0.2755	0.0000	939.7209
2019	0.0369	0.3880	0.3652	6.3000e-004	7.0200e-003	0.0208	0.0279	1.8200e-003	0.0192	0.0210	0.0000	55.7309	55.7309	0.0167	0.0000	56.0808
Total	**0.8150**	**8.9278**	**6.2312**	**0.0109**	**1.6267**	**0.4072**	**2.0339**	**0.8740**	**0.3746**	**1.2486**	**0.0000**	**989.6673**	**989.6673**	**0.2921**	**0.0000**	**995.8017**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.4927	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0106	0.0280	0.1116	2.5000e-004	0.0164	4.1000e-004	0.0168	4.4000e-003	3.8000e-004	4.7800e-003	0.0000	17.9428	17.9428	6.3000e-004	0.0000	17.9559
Waste						0.0000	0.0000		0.0000	0.0000	0.2253	0.0000	0.2253	0.0133	0.0000	0.5050
Water						0.0000	0.0000		0.0000	0.0000	0.0000	15.6497	15.6497	7.1000e-004	1.5000e-004	15.7099
Total	**2.5033**	**0.0280**	**0.1117**	**2.5000e-004**	**0.0164**	**4.1000e-004**	**0.0168**	**4.4000e-003**	**3.8000e-004**	**4.7800e-003**	**0.2253**	**33.5927**	**33.8181**	**0.0147**	**1.5000e-004**	**34.1711**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.4927	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0106	0.0280	0.1116	2.5000e-004	0.0164	4.1000e-004	0.0168	4.4000e-003	3.8000e-004	4.7800e-003	0.0000	17.9428	17.9428	6.3000e-004	0.0000	17.9559
Waste						0.0000	0.0000		0.0000	0.0000	0.2253	0.0000	0.2253	0.0133	0.0000	0.5050
Water						0.0000	0.0000		0.0000	0.0000	0.0000	15.6497	15.6497	7.1000e-004	1.5000e-004	15.7099
Total	**2.5033**	**0.0280**	**0.1117**	**2.5000e-004**	**0.0164**	**4.1000e-004**	**0.0168**	**4.4000e-003**	**3.8000e-004**	**4.7800e-003**	**0.2253**	**33.5927**	**33.8181**	**0.0147**	**1.5000e-004**	**34.1711**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,062.0000
Total	**1,062.0000**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	3/31/2018	5	65	
2	Excavation	Site Preparation	4/1/2018	9/30/2018	5	130	
3	Grading	Grading	4/1/2018	9/30/2018	5	130	
4	Paving	Paving	10/1/2018	1/31/2019	5	89	
5	Landscaping	Trenching	1/1/2019	6/30/2019	5	129	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 12.9

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38

Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Excavation	Rubber Tired Dozers	3	8.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	142.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	8	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	875.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0153	0.0000	0.0153	2.3200e-003	0.0000	2.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1508	1.6751	1.2046	1.9100e-003		0.0754	0.0754		0.0694	0.0694	0.0000	174.6122	174.6122	0.0544	0.0000	175.7537
Total	**0.1508**	**1.6751**	**1.2046**	**1.9100e-003**	**0.0153**	**0.0754**	**0.0908**	**2.3200e-003**	**0.0694**	**0.0717**	**0.0000**	**174.6122**	**174.6122**	**0.0544**	**0.0000**	**175.7537**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4700e-003	0.0174	0.0165	5.0000e-005	1.2000e-003	2.4000e-004	1.4400e-003	3.3000e-004	2.2000e-004	5.5000e-004	0.0000	4.7321	4.7321	4.0000e-005	0.0000	4.7329
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9500e-003	2.9600e-003	0.0282	7.0000e-005	5.9000e-003	5.0000e-005	5.9500e-003	1.5700e-003	4.0000e-005	1.6100e-003	0.0000	4.9705	4.9705	2.5000e-004	0.0000	4.9758
Total	**3.4200e-003**	**0.0203**	**0.0446**	**1.2000e-004**	**7.1000e-003**	**2.9000e-004**	**7.3900e-003**	**1.9000e-003**	**2.6000e-004**	**2.1600e-003**	**0.0000**	**9.7026**	**9.7026**	**2.9000e-004**	**0.0000**	**9.7087**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0153	0.0000	0.0153	2.3200e-003	0.0000	2.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1508	1.6751	1.2046	1.9100e-003		0.0754	0.0754		0.0694	0.0694	0.0000	174.6120	174.6120	0.0544	0.0000	175.7535
Total	**0.1508**	**1.6751**	**1.2046**	**1.9100e-003**	**0.0153**	**0.0754**	**0.0908**	**2.3200e-003**	**0.0694**	**0.0717**	**0.0000**	**174.6120**	**174.6120**	**0.0544**	**0.0000**	**175.7535**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4700e-003	0.0174	0.0165	5.0000e-005	1.2000e-003	2.4000e-004	1.4400e-003	3.3000e-004	2.2000e-004	5.5000e-004	0.0000	4.7321	4.7321	4.0000e-005	0.0000	4.7329

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9500e-003	2.9600e-003	0.0282	7.0000e-005	5.9000e-003	5.0000e-005	5.9500e-003	1.5700e-003	4.0000e-005	1.6100e-003	0.0000	4.9705	4.9705	2.5000e-004	0.0000	4.9758
Total	**3.4200e-003**	**0.0203**	**0.0446**	**1.2000e-004**	**7.1000e-003**	**2.9000e-004**	**7.3900e-003**	**1.9000e-003**	**2.6000e-004**	**2.1600e-003**	**0.0000**	**9.7026**	**9.7026**	**2.9000e-004**	**0.0000**	**9.7087**

3.3 Excavation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1743	0.0000	1.1743	0.6455	0.0000	0.6455	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2934	3.1121	2.4949	2.7300e-003		0.1636	0.1636		0.1505	0.1505	0.0000	249.6047	249.6047	0.0777	0.0000	251.2365
Total	**0.2934**	**3.1121**	**2.4949**	**2.7300e-003**	**1.1743**	**0.1636**	**1.3379**	**0.6455**	**0.1505**	**0.7960**	**0.0000**	**249.6047**	**249.6047**	**0.0777**	**0.0000**	**251.2365**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	8.9000e-004	8.4400e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4912	1.4912	8.0000e-005	0.0000	1.4928
Total	**5.9000e-004**	**8.9000e-004**	**8.4400e-003**	**2.0000e-005**	**1.7700e-003**	**1.0000e-005**	**1.7800e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.4912**	**1.4912**	**8.0000e-005**	**0.0000**	**1.4928**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1743	0.0000	1.1743	0.6455	0.0000	0.6455	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2934	3.1121	2.4949	2.7300e-003		0.1636	0.1636		0.1505	0.1505	0.0000	249.6044	249.6044	0.0777	0.0000	251.2362
Total	**0.2934**	**3.1121**	**2.4949**	**2.7300e-003**	**1.1743**	**0.1636**	**1.3379**	**0.6455**	**0.1505**	**0.7960**	**0.0000**	**249.6044**	**249.6044**	**0.0777**	**0.0000**	**251.2362**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	8.9000e-004	8.4400e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4912	1.4912	8.0000e-005	0.0000	1.4928
Total	**5.9000e-004**	**8.9000e-004**	**8.4400e-003**	**2.0000e-005**	**1.7700e-003**	**1.0000e-005**	**1.7800e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.4912**	**1.4912**	**8.0000e-005**	**0.0000**	**1.4928**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.3987	0.0000	0.3987	0.2160	0.0000	0.2160	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2638	2.9915	1.4563	4.0500e-003		0.1191	0.1191		0.1095	0.1095	0.0000	369.6650	369.6650	0.1151	0.0000	372.0818
Total	**0.2638**	**2.9915**	**1.4563**	**4.0500e-003**	**0.3987**	**0.1191**	**0.5178**	**0.2160**	**0.1095**	**0.3255**	**0.0000**	**369.6650**	**369.6650**	**0.1151**	**0.0000**	**372.0818**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.0700e-003	0.1069	0.1015	3.3000e-004	7.3800e-003	1.5000e-003	8.8800e-003	2.0300e-003	1.3800e-003	3.4100e-003	0.0000	29.1592	29.1592	2.2000e-004	0.0000	29.1637
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5200e-003	5.3300e-003	0.0507	1.3000e-004	0.0106	8.0000e-005	0.0107	2.8200e-003	8.0000e-005	2.9000e-003	0.0000	8.9469	8.9469	4.6000e-004	0.0000	8.9565
Total	**0.0126**	**0.1123**	**0.1521**	**4.6000e-004**	**0.0180**	**1.5800e-003**	**0.0196**	**4.8500e-003**	**1.4600e-003**	**6.3100e-003**	**0.0000**	**38.1060**	**38.1060**	**6.8000e-004**	**0.0000**	**38.1202**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3987	0.0000	0.3987	0.2160	0.0000	0.2160	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2638	2.9915	1.4563	4.0500e-003		0.1191	0.1191		0.1095	0.1095	0.0000	369.6646	369.6646	0.1151	0.0000	372.0813
Total	**0.2638**	**2.9915**	**1.4563**	**4.0500e-003**	**0.3987**	**0.1191**	**0.5178**	**0.2160**	**0.1095**	**0.3255**	**0.0000**	**369.6646**	**369.6646**	**0.1151**	**0.0000**	**372.0813**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.0700e-003	0.1069	0.1015	3.3000e-004	7.3800e-003	1.5000e-003	8.8800e-003	2.0300e-003	1.3800e-003	3.4100e-003	0.0000	29.1592	29.1592	2.2000e-004	0.0000	29.1637
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5200e-003	5.3300e-003	0.0507	1.3000e-004	0.0106	8.0000e-005	0.0107	2.8200e-003	8.0000e-005	2.9000e-003	0.0000	8.9469	8.9469	4.6000e-004	0.0000	8.9565
Total	**0.0126**	**0.1123**	**0.1521**	**4.6000e-004**	**0.0180**	**1.5800e-003**	**0.0196**	**4.8500e-003**	**1.4600e-003**	**6.3100e-003**	**0.0000**	**38.1060**	**38.1060**	**6.8000e-004**	**0.0000**	**38.1202**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0521	0.6253	0.4836	9.5000e-004		0.0264	0.0264		0.0243	0.0243	0.0000	86.9705	86.9705	0.0271	0.0000	87.5391
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0521**	**0.6253**	**0.4836**	**9.5000e-004**		**0.0264**	**0.0264**		**0.0243**	**0.0243**	**0.0000**	**86.9705**	**86.9705**	**0.0271**	**0.0000**	**87.5391**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	2.2500e-003	0.0214	5.0000e-005	4.4900e-003	4.0000e-005	4.5300e-003	1.2000e-003	3.0000e-005	1.2300e-003	0.0000	3.7852	3.7852	1.9000e-004	0.0000	3.7893
Total	**1.4900e-003**	**2.2500e-003**	**0.0214**	**5.0000e-005**	**4.4900e-003**	**4.0000e-005**	**4.5300e-003**	**1.2000e-003**	**3.0000e-005**	**1.2300e-003**	**0.0000**	**3.7852**	**3.7852**	**1.9000e-004**	**0.0000**	**3.7893**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0521	0.6253	0.4836	9.5000e-004		0.0264	0.0264		0.0243	0.0243	0.0000	86.9704	86.9704	0.0271	0.0000	87.5390
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0521**	**0.6253**	**0.4836**	**9.5000e-004**		**0.0264**	**0.0264**		**0.0243**	**0.0243**	**0.0000**	**86.9704**	**86.9704**	**0.0271**	**0.0000**	**87.5390**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	2.2500e-003	0.0214	5.0000e-005	4.4900e-003	4.0000e-005	4.5300e-003	1.2000e-003	3.0000e-005	1.2300e-003	0.0000	3.7852	3.7852	1.9000e-004	0.0000	3.7893
Total	**1.4900e-003**	**2.2500e-003**	**0.0214**	**5.0000e-005**	**4.4900e-003**	**4.0000e-005**	**4.5300e-003**	**1.2000e-003**	**3.0000e-005**	**1.2300e-003**	**0.0000**	**3.7852**	**3.7852**	**1.9000e-004**	**0.0000**	**3.7893**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0169	0.1995	0.1620	3.3000e-004		8.3400e-003	8.3400e-003		7.6700e-003	7.6700e-003	0.0000	29.8194	29.8194	9.4300e-003	0.0000	30.0175
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0169**	**0.1995**	**0.1620**	**3.3000e-004**		**8.3400e-003**	**8.3400e-003**		**7.6700e-003**	**7.6700e-003**	**0.0000**	**29.8194**	**29.8194**	**9.4300e-003**	**0.0000**	**30.0175**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	7.2000e-004	6.7800e-003	2.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.2717	1.2717	6.0000e-005	0.0000	1.2731
Total	**4.7000e-004**	**7.2000e-004**	**6.7800e-003**	**2.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.2717**	**1.2717**	**6.0000e-005**	**0.0000**	**1.2731**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	0.0169	0.1995	0.1620	3.3000e-004		8.3400e-003	8.3400e-003		7.6700e-003	7.6700e-003	0.0000	29.8194	29.8194	9.4300e-003	0.0000	30.0175
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0169**	**0.1995**	**0.1620**	**3.3000e-004**		**8.3400e-003**	**8.3400e-003**		**7.6700e-003**	**7.6700e-003**	**0.0000**	**29.8194**	**29.8194**	**9.4300e-003**	**0.0000**	**30.0175**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	7.2000e-004	6.7800e-003	2.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.2717	1.2717	6.0000e-005	0.0000	1.2731
Total	**4.7000e-004**	**7.2000e-004**	**6.7800e-003**	**2.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.2717**	**1.2717**	**6.0000e-005**	**0.0000**	**1.2731**

3.6 Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0186	0.1865	0.1837	2.5000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	22.2623	22.2623	7.0400e-003	0.0000	22.4102
Total	**0.0186**	**0.1865**	**0.1837**	**2.5000e-004**		**0.0125**	**0.0125**		**0.0115**	**0.0115**	**0.0000**	**22.2623**	**22.2623**	**7.0400e-003**	**0.0000**	**22.4102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	1.3400e-003	0.0127	3.0000e-005	5.4600e-003	2.0000e-005	5.4800e-003	1.4000e-003	2.0000e-005	1.4200e-003	0.0000	2.3776	2.3776	1.2000e-004	0.0000	2.3801
Total	**8.8000e-004**	**1.3400e-003**	**0.0127**	**3.0000e-005**	**5.4600e-003**	**2.0000e-005**	**5.4800e-003**	**1.4000e-003**	**2.0000e-005**	**1.4200e-003**	**0.0000**	**2.3776**	**2.3776**	**1.2000e-004**	**0.0000**	**2.3801**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0186	0.1865	0.1837	2.5000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	22.2622	22.2622	7.0400e-003	0.0000	22.4102
Total	**0.0186**	**0.1865**	**0.1837**	**2.5000e-004**		**0.0125**	**0.0125**		**0.0115**	**0.0115**	**0.0000**	**22.2622**	**22.2622**	**7.0400e-003**	**0.0000**	**22.4102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	1.3400e-003	0.0127	3.0000e-005	5.4600e-003	2.0000e-005	5.4800e-003	1.4000e-003	2.0000e-005	1.4200e-003	0.0000	2.3776	2.3776	1.2000e-004	0.0000	2.3801
Total	**8.8000e-004**	**1.3400e-003**	**0.0127**	**3.0000e-005**	**5.4600e-003**	**2.0000e-005**	**5.4800e-003**	**1.4000e-003**	**2.0000e-005**	**1.4200e-003**	**0.0000**	**2.3776**	**2.3776**	**1.2000e-004**	**0.0000**	**2.3801**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0106	0.0280	0.1116	2.5000e-004	0.0164	4.1000e-004	0.0168	4.4000e-003	3.8000e-004	4.7800e-003	0.0000	17.9428	17.9428	6.3000e-004	0.0000	17.9559
Unmitigated	0.0106	0.0280	0.1116	2.5000e-004	0.0164	4.1000e-004	0.0168	4.4000e-003	3.8000e-004	4.7800e-003	0.0000	17.9428	17.9428	6.3000e-004	0.0000	17.9559

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	20.51	20.51	20.51	43,788	43,788
Total	20.51	20.51	20.51	43,788	43,788

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.4927	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.4000e-004
Unmitigated	2.4927	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.4000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2936					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.4000e-004
Total	**2.4927**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3000e-004**	**2.3000e-004**	**0.0000**	**0.0000**	**2.4000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2936					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.4000e-004
Total	**2.4927**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3000e-004**	**2.3000e-004**	**0.0000**	**0.0000**	**2.4000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.6497	7.1000e-004	1.5000e-004	15.7099
Unmitigated	15.6497	7.1000e-004	1.5000e-004	15.7099

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 15.3701	15.6497	7.1000e-004	1.5000e-004	15.7099
Total		**15.6497**	**7.1000e-004**	**1.5000e-004**	**15.7099**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 15.3701	15.6497	7.1000e-004	1.5000e-004	15.7099
Total		**15.6497**	**7.1000e-004**	**1.5000e-004**	**15.7099**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e

	MT/yr			
Mitigated	0.2253	0.0133	0.0000	0.5050
Unmitigated	0.2253	0.0133	0.0000	0.5050

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.11	0.2253	0.0133	0.0000	0.5050
Total		**0.2253**	**0.0133**	**0.0000**	**0.5050**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.11	0.2253	0.0133	0.0000	0.5050
Total		**0.2253**	**0.0133**	**0.0000**	**0.5050**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	1,062.0000	0.0000	0.0000	1,062.0000

10.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	1500	1,062.0000	0.0000	0.0000	1,062.0000
Total		**1,062.0000**	**0.0000**	**0.0000**	**1,062.0000**

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	12.90	Acre	12.90	563,062.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 2 lot acreage equals 6 but not sure how to break it up into 2a, 2b, etc.

Construction Phase - Per Phase 2 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,900 (35,000 minus 4,100) cy total divided by 4 Sub-phases in Phase 2)

Con. orted sq. are footage to acres

Sequestration -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	30.00	130.00
tblConstructionPhase	NumDays	20.00	89.00
tblConstructionPhase	NumDays	10.00	130.00
tblConstructionPhase	PhaseEndDate	3/30/2018	3/31/2018
tblConstructionPhase	PhaseEndDate	3/29/2019	9/30/2018
tblConstructionPhase	PhaseEndDate	9/28/2018	9/30/2018
tblConstructionPhase	PhaseEndDate	7/31/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	10/1/2018	4/1/2018
tblConstructionPhase	PhaseStartDate	2/1/2019	1/1/2019
tblGrading	AcresOfGrading	130.00	12.90
tblGrading	MaterialImported	0.00	7,725.00
tblLandUse	LandUseSquareFeet	561,924.00	563,062.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	97.00	120.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSequestration	NumberOfNewTrees	0.00	1,500.00
tblTripsAndVMT	HaulingTripNumber	966.00	875.00
tblTripsAndVMT	WorkerTripNumber	20.00	3.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	8.7687	95.5723	62.9627	0.1119	24.5158	4.3727	28.8884	13.3380	4.0228	17.3608	0.0000	11,187.7156	11,187.7156	3.2821	0.0000	11,256.6405
2019	1.8199	20.3092	17.7898	0.0351	0.2296	0.9199	1.1495	0.0601	0.8463	0.9064	0.0000	3,413.9170	3,413.9170	1.0327	0.0000	3,435.6044
Total	**10.5886**	**115.8815**	**80.7525**	**0.1469**	**24.7453**	**5.2925**	**30.0378**	**13.3981**	**4.8691**	**18.2672**	**0.0000**	**14,601.6326**	**14,601.6326**	**4.3149**	**0.0000**	**14,692.2450**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	8.7687	95.5723	62.9627	0.1119	24.5158	4.3727	28.8884	13.3380	4.0228	17.3608	0.0000	11,187.7156	11,187.7156	3.2821	0.0000	11,256.6405
2019	1.8199	20.3092	17.7898	0.0351	0.2296	0.9199	1.1495	0.0601	0.8463	0.9064	0.0000	3,413.9170	3,413.9170	1.0327	0.0000	3,435.6044
Total	**10.5886**	**115.8815**	**80.7525**	**0.1469**	**24.7453**	**5.2925**	**30.0378**	**13.3981**	**4.8691**	**18.2672**	**0.0000**	**14,601.6326**	**14,601.6326**	**4.3149**	**0.0000**	**14,692.2450**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.6584	1.0000e-005	1.3300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8200e-003	2.8200e-003	1.0000e-005		2.9800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0599	0.1454	0.5535	1.4600e-003	0.0934	2.2700e-003	0.0957	0.0250	2.1000e-003	0.0271		114.3293	114.3293	3.7900e-003		114.4088
Total	**13.7183**	**0.1454**	**0.5548**	**1.4600e-003**	**0.0934**	**2.2700e-003**	**0.0957**	**0.0250**	**2.1000e-003**	**0.0271**		**114.3321**	**114.3321**	**3.8000e-003**	**0.0000**	**114.4118**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.6584	1.0000e-005	1.3300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8200e-003	2.8200e-003	1.0000e-005		2.9800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0599	0.1454	0.5535	1.4600e-003	0.0934	2.2700e-003	0.0957	0.0250	2.1000e-003	0.0271		114.3293	114.3293	3.7900e-003		114.4088
Total	**13.7183**	**0.1454**	**0.5548**	**1.4600e-003**	**0.0934**	**2.2700e-003**	**0.0957**	**0.0250**	**2.1000e-003**	**0.0271**		**114.3321**	**114.3321**	**3.8000e-003**	**0.0000**	**114.4118**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	3/31/2018	5	65	
2	Excavation	Site Preparation	4/1/2018	9/30/2018	5	130	
3	Grading	Grading	4/1/2018	9/30/2018	5	130	
4	Paving	Paving	10/1/2018	1/31/2019	5	89	
5	Landscaping	Trenching	1/1/2019	6/30/2019	5	129	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 12.9

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Excavation	Rubber Tired Dozers	3	8.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	142.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	8	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	875.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4721	0.0000	0.4721	0.0715	0.0000	0.0715			0.0000			0.0000
Off-Road	4.6397	51.5427	37.0648	0.0588		2.3209	2.3209		2.1352	2.1352		5,922.3678	5,922.3678	1.8437		5,961.0858
Total	**4.6397**	**51.5427**	**37.0648**	**0.0588**	**0.4721**	**2.3209**	**2.7930**	**0.0715**	**2.1352**	**2.2067**		**5,922.3678**	**5,922.3678**	**1.8437**		**5,961.0858**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0416	0.5147	0.3876	1.6400e-003	0.0381	7.4800e-003	0.0456	0.0104	6.8800e-003	0.0173		160.6574	160.6574	1.1900e-003		160.6824
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.1070**	**0.5948**	**1.3213**	**3.9800e-003**	**0.2267**	**8.9000e-003**	**0.2356**	**0.0605**	**8.2000e-003**	**0.0687**		**342.3363**	**342.3363**	**9.8300e-003**		**342.5427**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					0.4721	0.0000	0.4721	0.0715	0.0000	0.0715			0.0000			0.0000
Off-Road	4.6397	51.5427	37.0648	0.0588		2.3209	2.3209		2.1352	2.1352	0.0000	5,922.3678	5,922.3678	1.8437		5,961.0858
Total	**4.6397**	**51.5427**	**37.0648**	**0.0588**	**0.4721**	**2.3209**	**2.7930**	**0.0715**	**2.1352**	**2.2067**	**0.0000**	**5,922.3678**	**5,922.3678**	**1.8437**		**5,961.0858**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0416	0.5147	0.3876	1.6400e-003	0.0381	7.4800e-003	0.0456	0.0104	6.8800e-003	0.0173		160.6574	160.6574	1.1900e-003		160.6824
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.1070**	**0.5948**	**1.3213**	**3.9800e-003**	**0.2267**	**8.9000e-003**	**0.2356**	**0.0605**	**8.2000e-003**	**0.0687**		**342.3363**	**342.3363**	**9.8300e-003**		**342.5427**

3.3 Excavation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.5142	47.8790	38.3832	0.0420		2.5165	2.5165		2.3152	2.3152		4,232.9547	4,232.9547	1.3178		4,260.6280
Total	**4.5142**	**47.8790**	**38.3832**	**0.0420**	**18.0663**	**2.5165**	**20.5827**	**9.9307**	**2.3152**	**12.2459**		**4,232.9547**	**4,232.9547**	**1.3178**		**4,260.6280**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.8200e-003	0.0120	0.1401	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	2.0000e-004	7.7000e-003		27.2518	27.2518	1.3000e-003		27.2790
Total	**9.8200e-003**	**0.0120**	**0.1401**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**2.0000e-004**	**7.7000e-003**		**27.2518**	**27.2518**	**1.3000e-003**		**27.2790**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.5142	47.8790	38.3832	0.0420		2.5165	2.5165		2.3152	2.3152	0.0000	4,232.9547	4,232.9547	1.3178		4,260.6280
Total	**4.5142**	**47.8790**	**38.3832**	**0.0420**	**18.0663**	**2.5165**	**20.5827**	**9.9307**	**2.3152**	**12.2459**	**0.0000**	**4,232.9547**	**4,232.9547**	**1.3178**		**4,260.6280**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.8200e-003	0.0120	0.1401	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	2.0000e-004	7.7000e-003		27.2518	27.2518	1.3000e-003		27.2790
Total	**9.8200e-003**	**0.0120**	**0.1401**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**2.0000e-004**	**7.7000e-003**		**27.2518**	**27.2518**	**1.3000e-003**		**27.2790**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1340	0.0000	6.1340	3.3226	0.0000	3.3226			0.0000			0.0000
Off-Road	4.0578	46.0235	22.4048	0.0623		1.8316	1.8316		1.6851	1.6851		6,269.0147	6,269.0147	1.9516		6,309.9990
Total	**4.0578**	**46.0235**	**22.4048**	**0.0623**	**6.1340**	**1.8316**	**7.9657**	**3.3226**	**1.6851**	**5.0077**		**6,269.0147**	**6,269.0147**	**1.9516**		**6,309.9990**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1280	1.5858	1.1943	5.0700e-003	0.1174	0.0230	0.1405	0.0322	0.0212	0.0534		494.9833	494.9833	3.6700e-003		495.0603
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0721	0.8403	2.1000e-003	0.1698	1.2800e-003	0.1710	0.0450	1.1800e-003	0.0462		163.5110	163.5110	7.7700e-003		163.6742
Total	**0.1870**	**1.6579**	**2.0346**	**7.1700e-003**	**0.2872**	**0.0243**	**0.3115**	**0.0772**	**0.0224**	**0.0996**		**658.4943**	**658.4943**	**0.0114**		**658.7345**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1340	0.0000	6.1340	3.3226	0.0000	3.3226			0.0000			0.0000
Off-Road	4.0578	46.0235	22.4048	0.0623		1.8316	1.8316		1.6851	1.6851	0.0000	6,269.0147	6,269.0147	1.9516		6,309.9990
Total	**4.0578**	**46.0235**	**22.4048**	**0.0623**	**6.1340**	**1.8316**	**7.9657**	**3.2226**	**1.6851**	**5.0077**	**0.0000**	**6,269.0147**	**6,269.0147**	**1.9516**		**6,309.9990**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1280	1.5858	1.1943	5.0700e-003	0.1174	0.0230	0.1405	0.0322	0.0212	0.0534		494.9833	494.9833	3.6700e-003		495.0603
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0721	0.8403	2.1000e-003	0.1698	1.2800e-003	0.1710	0.0450	1.1800e-003	0.0462		163.5110	163.5110	7.7700e-003		163.6742
Total	**0.1870**	**1.6579**	**2.0346**	**7.1700e-003**	**0.2872**	**0.0243**	**0.3115**	**0.0772**	**0.0224**	**0.0996**		**658.4943**	**658.4943**	**0.0114**		**658.7345**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	1.5788	18.9478	14.6533	0.0289		0.7993	0.7993		0.7354	0.7354		2,905.1076	2,905.1076	0.9044		2,924.1000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5788**	**18.9478**	**14.6533**	**0.0289**		**0.7993**	**0.7993**		**0.7354**	**0.7354**		**2,905.1076**	**2,905.1076**	**0.9044**		**2,924.1000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0491	0.0601	0.7003	1.7500e-003	0.1415	1.0700e-003	0.1425	0.0375	9.9000e-004	0.0385		136.2592	136.2592	6.4800e-003		136.3952
Total	**0.0491**	**0.0601**	**0.7003**	**1.7500e-003**	**0.1415**	**1.0700e-003**	**0.1425**	**0.0375**	**9.9000e-004**	**0.0385**		**136.2592**	**136.2592**	**6.4800e-003**		**136.3952**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5788	18.9478	14.6533	0.0289		0.7993	0.7993		0.7354	0.7354	0.0000	2,905.1076	2,905.1076	0.9044		2,924.1000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5788**	**18.9478**	**14.6533**	**0.0289**		**0.7993**	**0.7993**		**0.7354**	**0.7354**	**0.0000**	**2,905.1076**	**2,905.1076**	**0.9044**		**2,924.1000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0491	0.0601	0.7003	1.7500e-003	0.1415	1.0700e-003	0.1425	0.0375	9.9000e-004	0.0385		136.2592	136.2592	6.4800e-003		136.3952
Total	**0.0491**	**0.0601**	**0.7003**	**1.7500e-003**	**0.1415**	**1.0700e-003**	**0.1425**	**0.0375**	**9.9000e-004**	**0.0385**		**136.2592**	**136.2592**	**6.4800e-003**		**136.3952**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4720	17.3446	14.0901	0.0289		0.7254	0.7254		0.6674	0.6674		2,858.2824	2,858.2824	0.9043		2,877.2733
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4720**	**17.3446**	**14.0901**	**0.0289**		**0.7254**	**0.7254**		**0.6674**	**0.6674**		**2,858.2824**	**2,858.2824**	**0.9043**		**2,877.2733**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4720	17.3446	14.0901	0.0289		0.7254	0.7254		0.6674	0.6674	0.0000	2,858.2824	2,858.2824	0.9043		2,877.2733
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4720**	**17.3446**	**14.0901**	**0.0289**		**0.7254**	**0.7254**		**0.6674**	**0.6674**	**0.0000**	**2,858.2824**	**2,858.2824**	**0.9043**		**2,877.2733**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043

Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

3.6 Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2880	2.8916	2.8487	3.8400e-003		0.1930	0.1930		0.1776	0.1776		380.4642	380.4642	0.1204		382.9920
Total	**0.2880**	**2.8916**	**2.8487**	**3.8400e-003**		**0.1930**	**0.1930**		**0.1776**	**0.1776**		**380.4642**	**380.4642**	**0.1204**		**382.9920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0183	0.2128	5.8000e-004	0.0881	3.5000e-004	0.0885	0.0226	3.2000e-004	0.0229		43.7926	43.7926	2.0100e-003		43.8348
Total	**0.0150**	**0.0183**	**0.2128**	**5.8000e-004**	**0.0881**	**3.5000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**43.7926**	**43.7926**	**2.0100e-003**		**43.8348**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2880	2.8916	2.8487	3.8400e-003		0.1930	0.1930		0.1776	0.1776	0.0000	380.4642	380.4642	0.1204		382.9920
Total	**0.2880**	**2.8916**	**2.8487**	**3.8400e-003**		**0.1930**	**0.1930**		**0.1776**	**0.1776**	**0.0000**	**380.4642**	**380.4642**	**0.1204**		**382.9920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0183	0.2128	5.8000e-004	0.0881	3.5000e-004	0.0885	0.0226	3.2000e-004	0.0229		43.7926	43.7926	2.0100e-003		43.8348
Total	**0.0150**	**0.0183**	**0.2128**	**5.8000e-004**	**0.0881**	**3.5000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**43.7926**	**43.7926**	**2.0100e-003**		**43.8348**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Mitigated	0.0599	0.1454	0.5535	1.4600e-003	0.0934	2.2700e-003	0.0957	0.0250	2.1000e-003	0.0271		114.3293	114.3293	3.7900e-003		114.4088
Unmitigated	0.0599	0.1454	0.5535	1.4600e-003	0.0934	2.2700e-003	0.0957	0.0250	2.1000e-003	0.0271		114.3293	114.3293	3.7900e-003		114.4088

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	20.51	20.51	20.51	43,788	43,788
Total	20.51	20.51	20.51	43,788	43,788

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	13.6584	1.0000e-005	1.3300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8200e-003	2.8200e-003	1.0000e-005		2.9800e-003
Unmitigated	13.6584	1.0000e-005	1.3300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8200e-003	2.8200e-003	1.0000e-005		2.9800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6088					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.0495					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2000e-004	1.0000e-005	1.3300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8200e-003	2.8200e-003	1.0000e-005		2.9800e-003
Total	**13.6584**	**1.0000e-005**	**1.3300e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.8200e-003**	**2.8200e-003**	**1.0000e-005**		**2.9800e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Architectural Coating	1.6088					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.0495					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2000e-004	1.0000e-005	1.3300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8200e-003	2.8200e-003	1.0000e-005		2.9800e-003
Total	**13.6584**	**1.0000e-005**	**1.3300e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.8200e-003**	**2.8200e-003**	**1.0000e-005**		**2.9800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.23	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 2 lot acreage equals 6 but not sure how to break it up into 2a, 2b, etc.

Construction Phase - Per Phase 2 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported)

Converted on, are factors to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	132.00
tblConstructionPhase	NumDays	10.00	65.00
tblConstructionPhase	NumDays	2.00	130.00
tblConstructionPhase	NumDays	5.00	64.00
tblConstructionPhase	NumDays	1.00	130.00
tblConstructionPhase	PhaseEndDate	4/2/2019	1/31/2019
tblConstructionPhase	PhaseEndDate	3/30/2018	3/31/2018
tblConstructionPhase	PhaseEndDate	3/29/2019	9/30/2018
tblConstructionPhase	PhaseEndDate	5/1/2019	3/31/2019
tblConstructionPhase	PhaseEndDate	9/28/2018	9/30/2018
tblConstructionPhase	PhaseEndDate	9/30/2019	8/31/2019
tblConstructionPhase	PhaseStartDate	10/1/2018	8/1/2018
tblConstructionPhase	PhaseStartDate	10/1/2018	4/1/2018
tblConstructionPhase	PhaseStartDate	2/1/2019	1/1/2019
tblConstructionPhase	PhaseStartDate	4/1/2019	3/1/2019
tblGrading	AcresOfGrading	130.00	0.23
tblGrading	MaterialImported	0.00	4,100.00
tblLandUse	LotAcreage	0.00	0.23
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00

tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.6690	7.1539	4.3956	9.7600e-003	0.4489	0.3175	0.7664	0.2250	0.2953	0.5203	0.0000	894.8583	894.8583	0.2244	0.0000	899.5710
2019	0.0923	0.9923	0.8250	1.7200e-003	9.9000e-003	0.0458	0.0557	2.5800e-003	0.0425	0.0450	0.0000	155.7100	155.7100	0.0397	0.0000	156.5437
Total	**0.7613**	**8.1462**	**5.2206**	**0.0115**	**0.4588**	**0.3633**	**0.8220**	**0.2276**	**0.3377**	**0.5653**	**0.0000**	**1,050.5683**	**1,050.5683**	**0.2641**	**0.0000**	**1,056.1147**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.6690	7.1538	4.3956	9.7600e-003	0.4489	0.3175	0.7664	0.2250	0.2953	0.5203	0.0000	894.8573	894.8573	0.2244	0.0000	899.5700
2019	0.0923	0.9923	0.8250	1.7200e-003	9.9000e-003	0.0458	0.0557	2.5800e-003	0.0425	0.0450	0.0000	155.7099	155.7099	0.0397	0.0000	156.5435
Total	**0.7613**	**8.1462**	**5.2206**	**0.0115**	**0.4588**	**0.3633**	**0.8220**	**0.2276**	**0.3377**	**0.5653**	**0.0000**	**1,050.5671**	**1,050.5671**	**0.2641**	**0.0000**	**1,056.1135**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	3/31/2018	5	65	
2	Excavation	Site Preparation	4/1/2018	9/30/2018	5	130	
3	Grading	Grading	4/1/2018	9/30/2018	5	130	
4	Construction	Building Construction	8/1/2018	1/31/2019	5	132	
5	Paving	Paving	1/1/2019	3/31/2019	5	64	
6	Landscaping	Trenching	3/1/2019	8/31/2019	5	131	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.23

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37

Construction	Cranes	1	8.00	150	0.29
Construction	Forklifts	1	6.00	150	0.20
Construction	Generator Sets	1	6.00	400	0.74
Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Construction	Welders	1	6.00	150	0.45
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	513.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Construction	5	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1508	1.6751	1.2046	1.9100e-003		0.0754	0.0754		0.0694	0.0694	0.0000	174.6122	174.6122	0.0544	0.0000	175.7537
Total	**0.1508**	**1.6751**	**1.2046**	**1.9100e-003**	**0.0000**	**0.0754**	**0.0754**	**0.0000**	**0.0694**	**0.0694**	**0.0000**	**174.6122**	**174.6122**	**0.0544**	**0.0000**	**175.7537**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9500e-003	2.9600e-003	0.0282	7.0000e-005	5.9000e-003	5.0000e-005	5.9500e-003	1.5700e-003	4.0000e-005	1.6100e-003	0.0000	4.9705	4.9705	2.5000e-004	0.0000	4.9758
Total	**1.9500e-003**	**2.9600e-003**	**0.0282**	**7.0000e-005**	**5.9000e-003**	**5.0000e-005**	**5.9500e-003**	**1.5700e-003**	**4.0000e-005**	**1.6100e-003**	**0.0000**	**4.9705**	**4.9705**	**2.5000e-004**	**0.0000**	**4.9758**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1508	1.6751	1.2046	1.9100e-003		0.0754	0.0754		0.0694	0.0694	0.0000	174.6120	174.6120	0.0544	0.0000	175.7535

Total	**0.1508**	**1.6751**	**1.2046**	**1.9100e-003**	**0.0000**	**0.0754**	**0.0754**	**0.0000**	**0.0694**	**0.0694**	**0.0000**	**174.6120**	**174.6120**	**0.0544**	**0.0000**	**175.7535**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9500e-003	2.9600e-003	0.0282	7.0000e-005	5.9000e-003	5.0000e-005	5.9500e-003	1.5700e-003	4.0000e-005	1.6100e-003	0.0000	4.9705	4.9705	2.5000e-004	0.0000	4.9758
Total	**1.9500e-003**	**2.9600e-003**	**0.0282**	**7.0000e-005**	**5.9000e-003**	**5.0000e-005**	**5.9500e-003**	**1.5700e-003**	**4.0000e-005**	**1.6100e-003**	**0.0000**	**4.9705**	**4.9705**	**2.5000e-004**	**0.0000**	**4.9758**

3.3 Excavation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0345	0.0000	0.0345	3.7200e-003	0.0000	3.7200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0858	0.8587	0.5949	7.9000e-004		0.0523	0.0523		0.0481	0.0481	0.0000	72.6337	72.6337	0.0226	0.0000	73.1085
Total	**0.0858**	**0.8587**	**0.5949**	**7.9000e-004**	**0.0345**	**0.0523**	**0.0868**	**3.7200e-003**	**0.0481**	**0.0518**	**0.0000**	**72.6337**	**72.6337**	**0.0226**	**0.0000**	**73.1085**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	8.9000e-004	8.4400e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4912	1.4912	8.0000e-005	0.0000	1.4928
Total	**5.9000e-004**	**8.9000e-004**	**8.4400e-003**	**2.0000e-005**	**1.7700e-003**	**1.0000e-005**	**1.7800e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.4912**	**1.4912**	**8.0000e-005**	**0.0000**	**1.4928**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0345	0.0000	0.0345	3.7200e-003	0.0000	3.7200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0858	0.8587	0.5949	7.9000e-004		0.0523	0.0523		0.0481	0.0481	0.0000	72.6336	72.6336	0.0226	0.0000	73.1084
Total	**0.0858**	**0.8587**	**0.5949**	**7.9000e-004**	**0.0345**	**0.0523**	**0.0868**	**3.7200e-003**	**0.0481**	**0.0518**	**0.0000**	**72.6336**	**72.6336**	**0.0226**	**0.0000**	**73.1084**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	5.9000e-004	8.9000e-004	8.4400e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4912	1.4912	8.0000e-005	0.0000	1.4928
Total	**5.9000e-004**	**8.9000e-004**	**8.4400e-003**	**2.0000e-005**	**1.7700e-003**	**1.0000e-005**	**1.7800e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.4912**	**1.4912**	**8.0000e-005**	**0.0000**	**1.4928**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3918	0.0000	0.3918	0.2152	0.0000	0.2152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2975	3.2460	1.6984	4.4600e-003		0.1364	0.1364		0.1269	0.1269	0.0000	404.6127	404.6127	0.1178	0.0000	407.0862
Total	**0.2975**	**3.2460**	**1.6984**	**4.4600e-003**	**0.3918**	**0.1364**	**0.5282**	**0.2152**	**0.1269**	**0.3421**	**0.0000**	**404.6127**	**404.6127**	**0.1178**	**0.0000**	**407.0862**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3200e-003	0.0627	0.0595	1.9000e-004	4.3300e-003	8.8000e-004	5.2100e-003	1.1900e-003	8.1000e-004	2.0000e-003	0.0000	17.0956	17.0956	1.3000e-004	0.0000	17.0983
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5200e-003	5.3300e-003	0.0507	1.3000e-004	0.0106	8.0000e-005	0.0107	2.8200e-003	8.0000e-005	2.9000e-003	0.0000	8.9469	8.9469	4.6000e-004	0.0000	8.9565
Total	**8.8400e-003**	**0.0680**	**0.1101**	**3.2000e-004**	**0.0150**	**9.6000e-004**	**0.0159**	**4.0100e-003**	**8.9000e-004**	**4.9000e-003**	**0.0000**	**26.0425**	**26.0425**	**5.9000e-004**	**0.0000**	**26.0548**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3918	0.0000	0.3918	0.2152	0.0000	0.2152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2975	3.2460	1.6984	4.4600e-003		0.1364	0.1364		0.1269	0.1269	0.0000	404.6122	404.6122	0.1178	0.0000	407.0858
Total	**0.2975**	**3.2460**	**1.6984**	**4.4600e-003**	**0.3918**	**0.1364**	**0.5282**	**0.2152**	**0.1269**	**0.3421**	**0.0000**	**404.6122**	**404.6122**	**0.1178**	**0.0000**	**407.0858**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3200e-003	0.0627	0.0595	1.9000e-004	4.3300e-003	8.8000e-004	5.2100e-003	1.1900e-003	8.1000e-004	2.0000e-003	0.0000	17.0956	17.0956	1.3000e-004	0.0000	17.0983
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5200e-003	5.3300e-003	0.0507	1.3000e-004	0.0106	8.0000e-005	0.0107	2.8200e-003	8.0000e-005	2.9000e-003	0.0000	8.9469	8.9469	4.6000e-004	0.0000	8.9565
Total	**8.8400e-003**	**0.0680**	**0.1101**	**3.2000e-004**	**0.0150**	**9.6000e-004**	**0.0159**	**4.0100e-003**	**8.9000e-004**	**4.9000e-003**	**0.0000**	**26.0425**	**26.0425**	**5.9000e-004**	**0.0000**	**26.0548**

3.5 Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1235	1.3022	0.7510	2.1800e-003		0.0523	0.0523		0.0500	0.0500	0.0000	210.4956	210.4956	0.0287	0.0000	211.0992

Total	**0.1235**	**1.3022**	**0.7510**	**2.1800e-003**		**0.0523**	**0.0523**		**0.0500**	**0.0500**	**0.0000**	**210.4956**	**210.4956**	**0.0287**	**0.0000**	**211.0992**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1235	1.3022	0.7510	2.1800e-003		0.0523	0.0523		0.0500	0.0500	0.0000	210.4954	210.4954	0.0287	0.0000	211.0989
Total	**0.1235**	**1.3022**	**0.7510**	**2.1800e-003**		**0.0523**	**0.0523**		**0.0500**	**0.0500**	**0.0000**	**210.4954**	**210.4954**	**0.0287**	**0.0000**	**211.0989**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0242	0.2446	0.1558	4.6000e-004		9.8600e-003	9.8600e-003		9.4100e-003	9.4100e-003	0.0000	44.1737	44.1737	6.0000e-003	0.0000	44.2997
Total	**0.0242**	**0.2446**	**0.1558**	**4.6000e-004**		**9.8600e-003**	**9.8600e-003**		**9.4100e-003**	**9.4100e-003**	**0.0000**	**44.1737**	**44.1737**	**6.0000e-003**	**0.0000**	**44.2997**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0242	0.2446	0.1558	4.6000e-004		9.8600e-003	9.8600e-003		9.4100e-003	9.4100e-003	0.0000	44.1737	44.1737	6.0000e-003	0.0000	44.2997
Total	**0.0242**	**0.2446**	**0.1558**	**4.6000e-004**		**9.8600e-003**	**9.8600e-003**		**9.4100e-003**	**9.4100e-003**	**0.0000**	**44.1737**	**44.1737**	**6.0000e-003**	**0.0000**	**44.2997**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0471	0.5550	0.4509	9.2000e-004		0.0232	0.0232		0.0214	0.0214	0.0000	82.9757	82.9757	0.0263	0.0000	83.5270
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0471**	**0.5550**	**0.4509**	**9.2000e-004**		**0.0232**	**0.0232**		**0.0214**	**0.0214**	**0.0000**	**82.9757**	**82.9757**	**0.0263**	**0.0000**	**83.5270**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3100e-003	1.9900e-003	0.0189	5.0000e-005	4.3600e-003	3.0000e-005	4.3900e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.5388	3.5388	1.7000e-004	0.0000	3.5424
Total	**1.3100e-003**	**1.9900e-003**	**0.0189**	**5.0000e-005**	**4.3600e-003**	**3.0000e-005**	**4.3900e-003**	**1.1600e-003**	**3.0000e-005**	**1.1900e-003**	**0.0000**	**3.5388**	**3.5388**	**1.7000e-004**	**0.0000**	**3.5424**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.0471	0.5550	0.4509	9.2000e-004		0.0232	0.0232		0.0214	0.0214	0.0000	82.9756	82.9756	0.0263	0.0000	83.5269
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0471**	**0.5550**	**0.4509**	**9.2000e-004**		**0.0232**	**0.0232**		**0.0214**	**0.0214**	**0.0000**	**82.9756**	**82.9756**	**0.0263**	**0.0000**	**83.5269**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3100e-003	1.9900e-003	0.0189	5.0000e-005	4.3600e-003	3.0000e-005	4.3900e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.5388	3.5388	1.7000e-004	0.0000	3.5424
Total	**1.3100e-003**	**1.9900e-003**	**0.0189**	**5.0000e-005**	**4.3600e-003**	**3.0000e-005**	**4.3900e-003**	**1.1600e-003**	**3.0000e-005**	**1.1900e-003**	**0.0000**	**3.5388**	**3.5388**	**1.7000e-004**	**0.0000**	**3.5424**

3.7 Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0189	0.1894	0.1866	2.5000e-004		0.0126	0.0126		0.0116	0.0116	0.0000	22.6074	22.6074	7.1500e-003	0.0000	22.7576
Total	**0.0189**	**0.1894**	**0.1866**	**2.5000e-004**		**0.0126**	**0.0126**		**0.0116**	**0.0116**	**0.0000**	**22.6074**	**22.6074**	**7.1500e-003**	**0.0000**	**22.7576**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-004	1.3600e-003	0.0129	4.0000e-005	5.5400e-003	2.0000e-005	5.5600e-003	1.4200e-003	2.0000e-005	1.4400e-003	0.0000	2.4145	2.4145	1.2000e-004	0.0000	2.4170
Total	**9.0000e-004**	**1.3600e-003**	**0.0129**	**4.0000e-005**	**5.5400e-003**	**2.0000e-005**	**5.5600e-003**	**1.4200e-003**	**2.0000e-005**	**1.4400e-003**	**0.0000**	**2.4145**	**2.4145**	**1.2000e-004**	**0.0000**	**2.4170**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0189	0.1894	0.1866	2.5000e-004		0.0126	0.0126		0.0116	0.0116	0.0000	22.6074	22.6074	7.1500e-003	0.0000	22.7576
Total	**0.0189**	**0.1894**	**0.1866**	**2.5000e-004**		**0.0126**	**0.0126**		**0.0116**	**0.0116**	**0.0000**	**22.6074**	**22.6074**	**7.1500e-003**	**0.0000**	**22.7576**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-004	1.3600e-003	0.0129	4.0000e-005	5.5400e-003	2.0000e-005	5.5600e-003	1.4200e-003	2.0000e-005	1.4400e-003	0.0000	2.4145	2.4145	1.2000e-004	0.0000	2.4170
Total	**9.0000e-004**	**1.3600e-003**	**0.0129**	**4.0000e-005**	**5.5400e-003**	**2.0000e-005**	**5.5600e-003**	**1.4200e-003**	**2.0000e-005**	**1.4400e-003**	**0.0000**	**2.4145**	**2.4145**	**1.2000e-004**	**0.0000**	**2.4170**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e

	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.23	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 2 lot acreage equals 6 but not sure how to break it up into 2a, 2b, etc.

Construction Phase - Per Phase 2 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported)

Converted cy -> acre factors to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	132.00
tblConstructionPhase	NumDays	10.00	65.00
tblConstructionPhase	NumDays	2.00	130.00
tblConstructionPhase	NumDays	5.00	64.00
tblConstructionPhase	NumDays	1.00	130.00
tblConstructionPhase	PhaseEndDate	4/2/2019	1/31/2019
tblConstructionPhase	PhaseEndDate	3/30/2018	3/31/2018
tblConstructionPhase	PhaseEndDate	3/29/2019	9/30/2018
tblConstructionPhase	PhaseEndDate	5/1/2019	3/31/2019
tblConstructionPhase	PhaseEndDate	9/28/2018	9/30/2018
tblConstructionPhase	PhaseEndDate	9/30/2019	8/31/2019
tblConstructionPhase	PhaseStartDate	10/1/2018	8/1/2018
tblConstructionPhase	PhaseStartDate	10/1/2018	4/1/2018
tblConstructionPhase	PhaseStartDate	2/1/2019	1/1/2019
tblConstructionPhase	PhaseStartDate	4/1/2019	3/1/2019
tblGrading	AcresOfGrading	130.00	0.23
tblGrading	MaterialImported	0.00	4,100.00
tblLandUse	LotAcreage	0.00	0.23
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00

tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	8.3074	88.0560	50.7419	0.1263	6.8247	3.8785	10.7032	3.4396	3.6228	7.0624	0.0000	12,831.8747	12,831.8747	2.9735	0.0000	12,894.3174
2019	3.6170	38.6654	28.2751	0.0707	0.2296	1.5838	1.7253	0.0601	1.4868	1.5243	0.0000	7,223.8511	7,223.8511	1.4854	0.0000	7,255.0445
Total	**11.9244**	**126.7213**	**79.0170**	**0.1970**	**7.0542**	**5.4623**	**12.4285**	**3.4997**	**5.1095**	**8.5867**	**0.0000**	**20,055.7258**	**20,055.7258**	**4.4589**	**0.0000**	**20,149.3619**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	8.3074	88.0560	50.7419	0.1263	6.8247	3.8785	10.7032	3.4396	3.6228	7.0624	0.0000	12,831.8747	12,831.8747	2.9735	0.0000	12,894.3174
2019	3.6170	38.6654	28.2751	0.0707	0.2296	1.5838	1.7253	0.0601	1.4868	1.5243	0.0000	7,223.8511	7,223.8511	1.4854	0.0000	7,255.0445
Total	**11.9244**	**126.7213**	**79.0170**	**0.1970**	**7.0542**	**5.4623**	**12.4285**	**3.4997**	**5.1095**	**8.5867**	**0.0000**	**20,055.7258**	**20,055.7258**	**4.4589**	**0.0000**	**20,149.3619**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	3/31/2018	5	65	
2	Excavation	Site Preparation	4/1/2018	9/30/2018	5	130	
3	Grading	Grading	4/1/2018	9/30/2018	5	130	
4	Construction	Building Construction	8/1/2018	1/31/2019	5	132	
5	Paving	Paving	1/1/2019	3/31/2019	5	64	
6	Landscaping	Trenching	3/1/2019	8/31/2019	5	131	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.23

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Construction	Cranes	1	8.00	150	0.29
Construction	Forklifts	1	6.00	150	0.20
Construction	Generator Sets	1	6.00	400	0.74
Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Construction	Welders	1	6.00	150	0.45

Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	513.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Construction	5	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000

Off-Road	4.6397	51.5427	37.0648	0.0588		2.3209	2.3209		2.1352	2.1352		5,922.3678	5,922.3678	1.8437		5,961.0858
Total	**4.6397**	**51.5427**	**37.0648**	**0.0588**	**0.0000**	**2.3209**	**2.3209**	**0.0000**	**2.1352**	**2.1352**		**5,922.3678**	**5,922.3678**	**1.8437**		**5,961.0858**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.0655**	**0.0801**	**0.9337**	**2.3400e-003**	**0.1886**	**1.4200e-003**	**0.1900**	**0.0500**	**1.3200e-003**	**0.0513**		**181.6789**	**181.6789**	**8.6400e-003**		**181.8603**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	4.6397	51.5427	37.0648	0.0588		2.3209	2.3209		2.1352	2.1352	0.0000	5,922.3678	5,922.3678	1.8437		5,961.0858
Total	**4.6397**	**51.5427**	**37.0648**	**0.0588**	**0.0000**	**2.3209**	**2.3209**	**0.0000**	**2.1352**	**2.1352**	**0.0000**	**5,922.3678**	**5,922.3678**	**1.8437**		**5,961.0858**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.0655**	**0.0801**	**0.9337**	**2.3400e-003**	**0.1886**	**1.4200e-003**	**0.1900**	**0.0500**	**1.3200e-003**	**0.0513**		**181.6789**	**181.6789**	**8.6400e-003**		**181.8603**

3.3 Excavation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.3203	13.2100	9.1528	0.0122		0.8046	0.8046		0.7402	0.7402		1,231.7679	1,231.7679	0.3835		1,239.8207
Total	**1.3203**	**13.2100**	**9.1528**	**0.0122**	**0.5303**	**0.8046**	**1.3348**	**0.0573**	**0.7402**	**0.7974**		**1,231.7679**	**1,231.7679**	**0.3835**		**1,239.8207**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.8200e-003	0.0120	0.1401	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	2.0000e-004	7.7000e-003		27.2518	27.2518	1.3000e-003		27.2790
Total	**9.8200e-003**	**0.0120**	**0.1401**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**2.0000e-004**	**7.7000e-003**		**27.2518**	**27.2518**	**1.3000e-003**		**27.2790**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.3203	13.2100	9.1528	0.0122		0.8046	0.8046		0.7402	0.7402	0.0000	1,231.7679	1,231.7679	0.3835		1,239.8207
Total	**1.3203**	**13.2100**	**9.1528**	**0.0122**	**0.5303**	**0.8046**	**1.3348**	**0.0573**	**0.7402**	**0.7974**	**0.0000**	**1,231.7679**	**1,231.7679**	**0.3835**		**1,239.8207**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.8200e-003	0.0120	0.1401	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	2.0000e-004	7.7000e-003		27.2518	27.2518	1.3000e-003		27.2790
Total	**9.8200e-003**	**0.0120**	**0.1401**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**2.0000e-004**	**7.7000e-003**		**27.2518**	**27.2518**	**1.3000e-003**		**27.2790**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0275	0.0000	6.0275	3.3110	0.0000	3.3110			0.0000			0.0000
Off-Road	4.5771	49.9384	26.1289	0.0686		2.0986	2.0986		1.9521	1.9521		6,861.6794	6,861.6794	1.9975		6,903.6272
Total	**4.5771**	**49.9384**	**26.1289**	**0.0686**	**6.0275**	**2.0986**	**8.1261**	**3.3110**	**1.9521**	**5.2630**		**6,861.6794**	**6,861.6794**	**1.9975**		**6,903.6272**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0751	0.9297	0.7002	2.9700e-003	0.0688	0.0135	0.0824	0.0189	0.0124	0.0313		290.2016	290.2016	2.1500e-003		290.2468
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0721	0.8403	2.1000e-003	0.1698	1.2800e-003	0.1710	0.0450	1.1800e-003	0.0462		163.5110	163.5110	7.7700e-003		163.6742
Total	**0.1340**	**1.0018**	**1.5405**	**5.0700e-003**	**0.2386**	**0.0148**	**0.2534**	**0.0639**	**0.0136**	**0.0775**		**453.7127**	**453.7127**	**9.9200e-003**		**453.9210**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					6.0275	0.0000	6.0275	3.3110	0.0000	3.3110			0.0000			0.0000
Off-Road	4.5771	49.9384	26.1289	0.0686		2.0986	2.0986		1.9521	1.9521	0.0000	6,861.6794	6,861.6794	1.9975		6,903.6272
Total	**4.5771**	**49.9384**	**26.1289**	**0.0686**	**6.0275**	**2.0986**	**8.1261**	**3.3110**	**1.9521**	**5.2630**	**0.0000**	**6,861.6794**	**6,861.6794**	**1.9975**		**6,903.6272**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0751	0.9297	0.7002	2.9700e-003	0.0688	0.0135	0.0824	0.0189	0.0124	0.0313		290.2016	290.2016	2.1500e-003		290.2468
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0721	0.8403	2.1000e-003	0.1698	1.2800e-003	0.1710	0.0450	1.1800e-003	0.0462		163.5110	163.5110	7.7700e-003		163.6742
Total	**0.1340**	**1.0018**	**1.5405**	**5.0700e-003**	**0.2386**	**0.0148**	**0.2534**	**0.0639**	**0.0136**	**0.0775**		**453.7127**	**453.7127**	**9.9200e-003**		**453.9210**

3.5 Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2662	23.8937	13.7796	0.0401		0.9604	0.9604		0.9167	0.9167		4,257.4629	4,257.4629	0.5813		4,269.6695
Total	**2.2662**	**23.8937**	**13.7796**	**0.0401**		**0.9604**	**0.9604**		**0.9167**	**0.9167**		**4,257.4629**	**4,257.4629**	**0.5813**		**4,269.6695**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2662	23.8937	13.7796	0.0401		0.9604	0.9604		0.9167	0.9167	0.0000	4,257.4629	4,257.4629	0.5813		4,269.6695
Total	**2.2662**	**23.8937**	**13.7796**	**0.0401**		**0.9604**	**0.9604**		**0.9167**	**0.9167**	**0.0000**	**4,257.4629**	**4,257.4629**	**0.5813**		**4,269.6695**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1001	21.2661	13.5468	0.0401		0.8574	0.8574		0.8184	0.8184		4,234.1909	4,234.1909	0.5751		4,246.2669
Total	**2.1001**	**21.2661**	**13.5468**	**0.0401**		**0.8574**	**0.8574**		**0.8184**	**0.8184**		**4,234.1909**	**4,234.1909**	**0.5751**		**4,246.2669**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1001	21.2661	13.5468	0.0401		0.8574	0.8574		0.8184	0.8184	0.0000	4,234.1909	4,234.1909	0.5751		4,246.2669
Total	**2.1001**	**21.2661**	**13.5468**	**0.0401**		**0.8574**	**0.8574**		**0.8184**	**0.8184**	**0.0000**	**4,234.1909**	**4,234.1909**	**0.5751**		**4,246.2669**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	1.4720	17.3446	14.0901	0.0289		0.7254	0.7254		0.6674	0.6674		2,858.2824	2,858.2824	0.9043		2,877.2733
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4720**	**17.3446**	**14.0901**	**0.0289**		**0.7254**	**0.7254**		**0.6674**	**0.6674**		**2,858.2824**	**2,858.2824**	**0.9043**		**2,877.2733**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4720	17.3446	14.0901	0.0289		0.7254	0.7254		0.6674	0.6674	0.0000	2,858.2824	2,858.2824	0.9043		2,877.2733
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4720**	**17.3446**	**14.0901**	**0.0289**		**0.7254**	**0.7254**		**0.6674**	**0.6674**	**0.0000**	**2,858.2824**	**2,858.2824**	**0.9043**		**2,877.2733**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

3.7 Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2880	2.8916	2.8487	3.8400e-003		0.1930	0.1930		0.1776	0.1776		380.4642	380.4642	0.1204		382.9920
Total	**0.2880**	**2.8916**	**2.8487**	**3.8400e-003**		**0.1930**	**0.1930**		**0.1776**	**0.1776**		**380.4642**	**380.4642**	**0.1204**		**382.9920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0183	0.2128	5.8000e-004	0.0881	3.5000e-004	0.0885	0.0226	3.2000e-004	0.0229		43.7926	43.7926	2.0100e-003		43.8348
Total	**0.0150**	**0.0183**	**0.2128**	**5.8000e-004**	**0.0881**	**3.5000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**43.7926**	**43.7926**	**2.0100e-003**		**43.8348**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2880	2.8916	2.8487	3.8400e-003		0.1930	0.1930		0.1776	0.1776	0.0000	380.4642	380.4642	0.1204		382.9920
Total	**0.2880**	**2.8916**	**2.8487**	**3.8400e-003**		**0.1930**	**0.1930**		**0.1776**	**0.1776**	**0.0000**	**380.4642**	**380.4642**	**0.1204**		**382.9920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0183	0.2128	5.8000e-004	0.0881	3.5000e-004	0.0885	0.0226	3.2000e-004	0.0229		43.7926	43.7926	2.0100e-003		43.8348

Total	**0.0150**	**0.0183**	**0.2128**	**5.8000e-004**	**0.0881**	**3.5000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**43.7926**	**43.7926**	**2.0100e-003**		**43.8348**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	150.00	Space	1.35	60,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 2 lot acreage equals 6 but not sure how to break it up into 2a, 2b, etc.

Construction Phase - Per Phase 2 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,900 (35,000 minus 4,100) cy total divided by 4 Sub-phases in Phase 2)

Con. orted sq. are footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	4.00	130.00
tblConstructionPhase	NumDays	10.00	89.00
tblConstructionPhase	NumDays	2.00	130.00
tblConstructionPhase	PhaseEndDate	3/30/2018	3/31/2018
tblConstructionPhase	PhaseEndDate	3/29/2019	9/30/2018
tblConstructionPhase	PhaseEndDate	9/28/2018	9/30/2018
tblConstructionPhase	PhaseEndDate	7/31/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	10/1/2018	4/1/2018
tblConstructionPhase	PhaseStartDate	2/1/2019	1/1/2019
tblGrading	AcresOfGrading	130.00	1.39
tblLandUse	LandUseSquareFeet	60,000.00	60,400.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.6225	6.8273	4.3578	8.4900e-003	0.7919	0.3041	1.0960	0.4133	0.2797	0.6930	0.0000	769.3168	769.3168	0.2345	0.0000	774.2414
2019	0.0373	0.3880	0.3652	6.3000e-004	7.0200e-003	0.0208	0.0279	1.8200e-003	0.0192	0.0210	0.0000	55.7310	55.7310	0.0167	0.0000	56.0808
Total	**0.6598**	**7.2153**	**4.7231**	**9.1200e-003**	**0.7990**	**0.3249**	**1.1238**	**0.4151**	**0.2989**	**0.7140**	**0.0000**	**825.0477**	**825.0477**	**0.2512**	**0.0000**	**830.3222**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	tons/yr										MT/yr					
2018	0.6225	6.8273	4.3578	8.4900e-003	0.7919	0.3041	1.0960	0.4133	0.2797	0.6930	0.0000	769.3159	769.3159	0.2345	0.0000	774.2405
2019	0.0373	0.3880	0.3652	6.3000e-004	7.0200e-003	0.0208	0.0279	1.8200e-003	0.0192	0.0210	0.0000	55.7309	55.7309	0.0167	0.0000	56.0808
Total	**0.6598**	**7.2153**	**4.7231**	**9.1200e-003**	**0.7990**	**0.3249**	**1.1238**	**0.4151**	**0.2989**	**0.7140**	**0.0000**	**825.0468**	**825.0468**	**0.2512**	**0.0000**	**830.3213**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2370	1.0000e-005	1.3900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	15.4625	15.4625	7.0000e-004	1.4000e-004	15.5221
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2370**	**1.0000e-005**	**1.3900e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**15.4652**	**15.4652**	**7.1000e-004**	**1.4000e-004**	**15.5249**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2370	1.0000e-005	1.3900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	15.4625	15.4625	7.0000e-004	1.4000e-004	15.5221
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2370**	**1.0000e-005**	**1.3900e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**15.4652**	**15.4652**	**7.1000e-004**	**1.4000e-004**	**15.5249**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	3/31/2018	5	65	
2	Excavation	Site Preparation	4/1/2018	9/30/2018	5	130	
3	Grading	Grading	4/1/2018	9/30/2018	5	130	
4	Paving	Paving	10/1/2018	1/31/2019	5	89	
5	Landscaping	Trenching	1/1/2019	6/30/2019	5	129	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.39

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Excavation	Graders	1	8.00	174	0.41
Excavation	Rubber Tired Dozers	1	7.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1508	1.6751	1.2046	1.9100e-003		0.0754	0.0754		0.0694	0.0694	0.0000	174.6122	174.6122	0.0544	0.0000	175.7537
Total	**0.1508**	**1.6751**	**1.2046**	**1.9100e-003**	**0.0000**	**0.0754**	**0.0754**	**0.0000**	**0.0694**	**0.0694**	**0.0000**	**174.6122**	**174.6122**	**0.0544**	**0.0000**	**175.7537**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9500e-003	2.9600e-003	0.0282	7.0000e-005	5.9000e-003	5.0000e-005	5.9500e-003	1.5700e-003	4.0000e-005	1.6100e-003	0.0000	4.9705	4.9705	2.5000e-004	0.0000	4.9758
Total	**1.9500e-003**	**2.9600e-003**	**0.0282**	**7.0000e-005**	**5.9000e-003**	**5.0000e-005**	**5.9500e-003**	**1.5700e-003**	**4.0000e-005**	**1.6100e-003**	**0.0000**	**4.9705**	**4.9705**	**2.5000e-004**	**0.0000**	**4.9758**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1508	1.6751	1.2046	1.9100e-003		0.0754	0.0754		0.0694	0.0694	0.0000	174.6120	174.6120	0.0544	0.0000	175.7535
Total	**0.1508**	**1.6751**	**1.2046**	**1.9100e-003**	**0.0000**	**0.0754**	**0.0754**	**0.0000**	**0.0694**	**0.0694**	**0.0000**	**174.6120**	**174.6120**	**0.0544**	**0.0000**	**175.7535**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9500e-003	2.9600e-003	0.0282	7.0000e-005	5.9000e-003	5.0000e-005	5.9500e-003	1.5700e-003	4.0000e-005	1.6100e-003	0.0000	4.9705	4.9705	2.5000e-004	0.0000	4.9758
Total	**1.9500e-003**	**2.9600e-003**	**0.0282**	**7.0000e-005**	**5.9000e-003**	**5.0000e-005**	**5.9500e-003**	**1.5700e-003**	**4.0000e-005**	**1.6100e-003**	**0.0000**	**4.9705**	**4.9705**	**2.5000e-004**	**0.0000**	**4.9758**

3.3 Excavation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3770	0.0000	0.3770	0.1920	0.0000	0.1920	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1470	1.5239	1.1047	1.3000e-003		0.0830	0.0830		0.0764	0.0764	0.0000	118.8753	118.8753	0.0370	0.0000	119.6525

Total	**0.1470**	**1.5239**	**1.1047**	**1.3000e-003**	**0.3770**	**0.0830**	**0.4600**	**0.1920**	**0.0764**	**0.2684**	**0.0000**	**118.8753**	**118.8753**	**0.0370**	**0.0000**	**119.6525**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	8.9000e-004	8.4400e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4912	1.4912	8.0000e-005	0.0000	1.4928
Total	**5.9000e-004**	**8.9000e-004**	**8.4400e-003**	**2.0000e-005**	**1.7700e-003**	**1.0000e-005**	**1.7800e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.4912**	**1.4912**	**8.0000e-005**	**0.0000**	**1.4928**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3770	0.0000	0.3770	0.1920	0.0000	0.1920	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1470	1.5239	1.1047	1.3000e-003		0.0830	0.0830		0.0764	0.0764	0.0000	118.8752	118.8752	0.0370	0.0000	119.6523
Total	**0.1470**	**1.5239**	**1.1047**	**1.3000e-003**	**0.3770**	**0.0830**	**0.4600**	**0.1920**	**0.0764**	**0.2684**	**0.0000**	**118.8752**	**118.8752**	**0.0370**	**0.0000**	**119.6523**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	8.9000e-004	8.4400e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4912	1.4912	8.0000e-005	0.0000	1.4928
Total	**5.9000e-004**	**8.9000e-004**	**8.4400e-003**	**2.0000e-005**	**1.7700e-003**	**1.0000e-005**	**1.7800e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.4912**	**1.4912**	**8.0000e-005**	**0.0000**	**1.4928**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3922	0.0000	0.3922	0.2152	0.0000	0.2152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2638	2.9915	1.4563	4.0500e-003		0.1191	0.1191		0.1095	0.1095	0.0000	369.6650	369.6650	0.1151	0.0000	372.0818
Total	**0.2638**	**2.9915**	**1.4563**	**4.0500e-003**	**0.3922**	**0.1191**	**0.5112**	**0.2152**	**0.1095**	**0.3248**	**0.0000**	**369.6650**	**369.6650**	**0.1151**	**0.0000**	**372.0818**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	3.5200e-003	5.3300e-003	0.0507	1.3000e-004	0.0106	8.0000e-005	0.0107	2.8200e-003	8.0000e-005	2.9000e-003	0.0000	8.9469	8.9469	4.6000e-004	0.0000	8.9565
Total	**3.5200e-003**	**5.3300e-003**	**0.0507**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0107**	**2.8200e-003**	**8.0000e-005**	**2.9000e-003**	**0.0000**	**8.9469**	**8.9469**	**4.6000e-004**	**0.0000**	**8.9565**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3922	0.0000	0.3922	0.2152	0.0000	0.2152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2638	2.9915	1.4563	4.0500e-003		0.1191	0.1191		0.1095	0.1095	0.0000	369.6646	369.6646	0.1151	0.0000	372.0813
Total	**0.2638**	**2.9915**	**1.4563**	**4.0500e-003**	**0.3922**	**0.1191**	**0.5112**	**0.2152**	**0.1095**	**0.3248**	**0.0000**	**369.6646**	**369.6646**	**0.1151**	**0.0000**	**372.0813**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5200e-003	5.3300e-003	0.0507	1.3000e-004	0.0106	8.0000e-005	0.0107	2.8200e-003	8.0000e-005	2.9000e-003	0.0000	8.9469	8.9469	4.6000e-004	0.0000	8.9565
Total	**3.5200e-003**	**5.3300e-003**	**0.0507**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0107**	**2.8200e-003**	**8.0000e-005**	**2.9000e-003**	**0.0000**	**8.9469**	**8.9469**	**4.6000e-004**	**0.0000**	**8.9565**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0521	0.6253	0.4836	9.5000e-004		0.0264	0.0264		0.0243	0.0243	0.0000	86.9705	86.9705	0.0271	0.0000	87.5391
Paving	1.3100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0534**	**0.6253**	**0.4836**	**9.5000e-004**		**0.0264**	**0.0264**		**0.0243**	**0.0243**	**0.0000**	**86.9705**	**86.9705**	**0.0271**	**0.0000**	**87.5391**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	2.2500e-003	0.0214	5.0000e-005	4.4900e-003	4.0000e-005	4.5300e-003	1.2000e-003	3.0000e-005	1.2300e-003	0.0000	3.7852	3.7852	1.9000e-004	0.0000	3.7893
Total	**1.4900e-003**	**2.2500e-003**	**0.0214**	**5.0000e-005**	**4.4900e-003**	**4.0000e-005**	**4.5300e-003**	**1.2000e-003**	**3.0000e-005**	**1.2300e-003**	**0.0000**	**3.7852**	**3.7852**	**1.9000e-004**	**0.0000**	**3.7893**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0521	0.6253	0.4836	9.5000e-004		0.0264	0.0264		0.0243	0.0243	0.0000	86.9704	86.9704	0.0271	0.0000	87.5390

Paving	1.3100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0534**	**0.6253**	**0.4836**	**9.5000e-004**		**0.0264**	**0.0264**		**0.0243**	**0.0243**	**0.0000**	**86.9704**	**86.9704**	**0.0271**	**0.0000**	**87.5390**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	2.2500e-003	0.0214	5.0000e-005	4.4900e-003	4.0000e-005	4.5300e-003	1.2000e-003	3.0000e-005	1.2300e-003	0.0000	3.7852	3.7852	1.9000e-004	0.0000	3.7893
Total	**1.4900e-003**	**2.2500e-003**	**0.0214**	**5.0000e-005**	**4.4900e-003**	**4.0000e-005**	**4.5300e-003**	**1.2000e-003**	**3.0000e-005**	**1.2300e-003**	**0.0000**	**3.7852**	**3.7852**	**1.9000e-004**	**0.0000**	**3.7893**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0169	0.1995	0.1620	3.3000e-004		8.3400e-003	8.3400e-003		7.6700e-003	7.6700e-003	0.0000	29.8194	29.8194	9.4300e-003	0.0000	30.0175
Paving	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0174**	**0.1995**	**0.1620**	**3.3000e-004**		**8.3400e-003**	**8.3400e-003**		**7.6700e-003**	**7.6700e-003**	**0.0000**	**29.8194**	**29.8194**	**9.4300e-003**	**0.0000**	**30.0175**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	7.2000e-004	6.7800e-003	2.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.2717	1.2717	6.0000e-005	0.0000	1.2731
Total	**4.7000e-004**	**7.2000e-004**	**6.7800e-003**	**2.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.2717**	**1.2717**	**6.0000e-005**	**0.0000**	**1.2731**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0169	0.1995	0.1620	3.3000e-004		8.3400e-003	8.3400e-003		7.6700e-003	7.6700e-003	0.0000	29.8194	29.8194	9.4300e-003	0.0000	30.0175
Paving	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0174**	**0.1995**	**0.1620**	**3.3000e-004**		**8.3400e-003**	**8.3400e-003**		**7.6700e-003**	**7.6700e-003**	**0.0000**	**29.8194**	**29.8194**	**9.4300e-003**	**0.0000**	**30.0175**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	7.2000e-004	6.7800e-003	2.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.2717	1.2717	6.0000e-005	0.0000	1.2731
Total	**4.7000e-004**	**7.2000e-004**	**6.7800e-003**	**2.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.2717**	**1.2717**	**6.0000e-005**	**0.0000**	**1.2731**

3.6 Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0186	0.1865	0.1837	2.5000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	22.2623	22.2623	7.0400e-003	0.0000	22.4102
Total	**0.0186**	**0.1865**	**0.1837**	**2.5000e-004**		**0.0125**	**0.0125**		**0.0115**	**0.0115**	**0.0000**	**22.2623**	**22.2623**	**7.0400e-003**	**0.0000**	**22.4102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	1.3400e-003	0.0127	3.0000e-005	5.4600e-003	2.0000e-005	5.4800e-003	1.4000e-003	2.0000e-005	1.4200e-003	0.0000	2.3776	2.3776	1.2000e-004	0.0000	2.3801
Total	**8.8000e-004**	**1.3400e-003**	**0.0127**	**3.0000e-005**	**5.4600e-003**	**2.0000e-005**	**5.4800e-003**	**1.4000e-003**	**2.0000e-005**	**1.4200e-003**	**0.0000**	**2.3776**	**2.3776**	**1.2000e-004**	**0.0000**	**2.3801**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0186	0.1865	0.1837	2.5000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	22.2622	22.2622	7.0400e-003	0.0000	22.4102
Total	**0.0186**	**0.1865**	**0.1837**	**2.5000e-004**		**0.0125**	**0.0125**		**0.0115**	**0.0115**	**0.0000**	**22.2622**	**22.2622**	**7.0400e-003**	**0.0000**	**22.4102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	1.3400e-003	0.0127	3.0000e-005	5.4600e-003	2.0000e-005	5.4800e-003	1.4000e-003	2.0000e-005	1.4200e-003	0.0000	2.3776	2.3776	1.2000e-004	0.0000	2.3801
Total	**8.8000e-004**	**1.3400e-003**	**0.0127**	**3.0000e-005**	**5.4600e-003**	**2.0000e-005**	**5.4800e-003**	**1.4000e-003**	**2.0000e-005**	**1.4200e-003**	**0.0000**	**2.3776**	**2.3776**	**1.2000e-004**	**0.0000**	**2.3801**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	15.4625	15.4625	7.0000e-004	1.4000e-004	15.5221
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	15.4625	15.4625	7.0000e-004	1.4000e-004	15.5221
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	53152	15.4625	7.0000e-004	1.4000e-004	15.5221
Total		**15.4625**	**7.0000e-004**	**1.4000e-004**	**15.5221**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	53152	15.4625	7.0000e-004	1.4000e-004	15.5221
Total		**15.4625**	**7.0000e-004**	**1.4000e-004**	**15.5221**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2370	1.0000e-005	1.3900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8300e-003
Unmitigated	0.2370	1.0000e-005	1.3900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2359					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8300e-003
Total	**0.2370**	**1.0000e-005**	**1.3900e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.6800e-003**	**2.6800e-003**	**1.0000e-005**	**0.0000**	**2.8300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					

Consumer Products	0.2359					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8300e-003
Architectural Coating	9.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2370**	**1.0000e-005**	**1.3900e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.6800e-003**	**2.6800e-003**	**1.0000e-005**	**0.0000**	**2.8300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	150.00	Space	1.35	60,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 2 lot acreage equals 6 but not sure how to break it up into 2a, 2b, etc.

Construction Phase - Per Phase 2 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 30,900 (35,000 minus 4,100) cy total divided by 4 Sub-phases in Phase 2)

Con. orted sq. ore footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	4.00	130.00
tblConstructionPhase	NumDays	10.00	89.00
tblConstructionPhase	NumDays	2.00	130.00
tblConstructionPhase	PhaseEndDate	3/30/2018	3/31/2018
tblConstructionPhase	PhaseEndDate	3/29/2019	9/30/2018
tblConstructionPhase	PhaseEndDate	9/28/2018	9/30/2018
tblConstructionPhase	PhaseEndDate	7/31/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	10/1/2018	4/1/2018
tblConstructionPhase	PhaseStartDate	2/1/2019	1/1/2019
tblGrading	AcresOfGrading	130.00	1.39
tblLandUse	LandUseSquareFeet	60,000.00	60,400.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	6.3882	69.5522	40.3802	0.0848	12.0310	3.1102	15.1413	6.3177	2.8614	9.1791	0.0000	8,475.7407	8,475.7407	2.5883	0.0000	8,530.0949
2019	1.8596	20.3092	17.7898	0.0351	0.2296	0.9199	1.1495	0.0601	0.8463	0.9064	0.0000	3,413.9170	3,413.9170	1.0327	0.0000	3,435.6044
Total	**8.2478**	**89.8613**	**58.1700**	**0.1198**	**12.2606**	**4.0301**	**16.2907**	**6.3778**	**3.7077**	**10.0855**	**0.0000**	**11,889.6577**	**11,889.6577**	**3.6210**	**0.0000**	**11,965.6993**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	lb/day										lb/day					
2018	6.3882	69.5522	40.3802	0.0848	12.0310	3.1102	15.1413	6.3177	2.8614	9.1791	0.0000	8,475.7407	8,475.7407	2.5883	0.0000	8,530.0949
2019	1.8596	20.3092	17.7898	0.0351	0.2296	0.9199	1.1495	0.0601	0.8463	0.9064	0.0000	3,413.9170	3,413.9170	1.0327	0.0000	3,435.6044
Total	**8.2478**	**89.8613**	**58.1700**	**0.1198**	**12.2606**	**4.0301**	**16.2907**	**6.3778**	**3.7077**	**10.0855**	**0.0000**	**11,889.6577**	**11,889.6577**	**3.6210**	**0.0000**	**11,965.6993**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.2992	1.4000e-004	0.0154	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0328	0.0328	9.0000e-005		0.0347
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.2992**	**1.4000e-004**	**0.0154**	**0.0000**	**0.0000**	**6.0000e-005**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**6.0000e-005**		**0.0328**	**0.0328**	**9.0000e-005**	**0.0000**	**0.0347**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Area	1.2992	1.4000e-004	0.0154	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0328	0.0328	9.0000e-005		0.0347
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.2992**	**1.4000e-004**	**0.0154**	**0.0000**	**0.0000**	**6.0000e-005**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**6.0000e-005**		**0.0328**	**0.0328**	**9.0000e-005**	**0.0000**	**0.0347**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	3/31/2018	5	65	
2	Excavation	Site Preparation	4/1/2018	9/30/2018	5	130	
3	Grading	Grading	4/1/2018	9/30/2018	5	130	
4	Paving	Paving	10/1/2018	1/31/2019	5	89	
5	Landscaping	Trenching	1/1/2019	6/30/2019	5	129	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.39

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40

Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Excavation	Graders	1	8.00	174	0.41
Excavation	Rubber Tired Dozers	1	7.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	4.6397	51.5427	37.0648	0.0588		2.3209	2.3209		2.1352	2.1352		5,922.3678	5,922.3678	1.8437		5,961.0858
Total	**4.6397**	**51.5427**	**37.0648**	**0.0588**	**0.0000**	**2.3209**	**2.3209**	**0.0000**	**2.1352**	**2.1352**		**5,922.3678**	**5,922.3678**	**1.8437**		**5,961.0858**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.0655**	**0.0801**	**0.9337**	**2.3400e-003**	**0.1886**	**1.4200e-003**	**0.1900**	**0.0500**	**1.3200e-003**	**0.0513**		**181.6789**	**181.6789**	**8.6400e-003**		**181.8603**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000

Off-Road	4.6397	51.5427	37.0648	0.0588		2.3209	2.3209		2.1352	2.1352	0.0000	5,922.3678	5,922.3678	1.8437		5,961.0858
Total	**4.6397**	**51.5427**	**37.0648**	**0.0588**	**0.0000**	**2.3209**	**2.3209**	**0.0000**	**2.1352**	**2.1352**	**0.0000**	**5,922.3678**	**5,922.3678**	**1.8437**		**5,961.0858**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0801	0.9337	2.3400e-003	0.1886	1.4200e-003	0.1900	0.0500	1.3200e-003	0.0513		181.6789	181.6789	8.6400e-003		181.8603
Total	**0.0655**	**0.0801**	**0.9337**	**2.3400e-003**	**0.1886**	**1.4200e-003**	**0.1900**	**0.0500**	**1.3200e-003**	**0.0513**		**181.6789**	**181.6789**	**8.6400e-003**		**181.8603**

3.3 Excavation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	2.2617	23.4446	16.9951	0.0200		1.2771	1.2771		1.1749	1.1749		2,015.9631	2,015.9631	0.6276		2,029.1427
Total	**2.2617**	**23.4446**	**16.9951**	**0.0200**	**5.7996**	**1.2771**	**7.0767**	**2.9537**	**1.1749**	**4.1286**		**2,015.9631**	**2,015.9631**	**0.6276**		**2,029.1427**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.8200e-003	0.0120	0.1401	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	2.0000e-004	7.7000e-003		27.2518	27.2518	1.3000e-003		27.2790
Total	**9.8200e-003**	**0.0120**	**0.1401**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**2.0000e-004**	**7.7000e-003**		**27.2518**	**27.2518**	**1.3000e-003**		**27.2790**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	2.2617	23.4446	16.9951	0.0200		1.2771	1.2771		1.1749	1.1749	0.0000	2,015.9631	2,015.9631	0.6276		2,029.1427
Total	**2.2617**	**23.4446**	**16.9951**	**0.0200**	**5.7996**	**1.2771**	**7.0767**	**2.9537**	**1.1749**	**4.1286**	**0.0000**	**2,015.9631**	**2,015.9631**	**0.6276**		**2,029.1427**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.8200e-003	0.0120	0.1401	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	2.0000e-004	7.7000e-003		27.2518	27.2518	1.3000e-003		27.2790
Total	**9.8200e-003**	**0.0120**	**0.1401**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**2.0000e-004**	**7.7000e-003**		**27.2518**	**27.2518**	**1.3000e-003**		**27.2790**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0334	0.0000	6.0334	3.3115	0.0000	3.3115			0.0000			0.0000
Off-Road	4.0578	46.0235	22.4048	0.0623		1.8316	1.8316		1.6851	1.6851		6,269.0147	6,269.0147	1.9516		6,309.9990
Total	**4.0578**	**46.0235**	**22.4048**	**0.0623**	**6.0334**	**1.8316**	**7.8651**	**3.3115**	**1.6851**	**4.9965**		**6,269.0147**	**6,269.0147**	**1.9516**		**6,309.9990**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0721	0.8403	2.1000e-003	0.1698	1.2800e-003	0.1710	0.0450	1.1800e-003	0.0462		163.5110	163.5110	7.7700e-003		163.6742
Total	**0.0589**	**0.0721**	**0.8403**	**2.1000e-003**	**0.1698**	**1.2800e-003**	**0.1710**	**0.0450**	**1.1800e-003**	**0.0462**		**163.5110**	**163.5110**	**7.7700e-003**		**163.6742**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0334	0.0000	6.0334	3.3115	0.0000	3.3115			0.0000			0.0000
Off-Road	4.0578	46.0235	22.4048	0.0623		1.8316	1.8316		1.6851	1.6851	0.0000	6,269.0147	6,269.0147	1.9516		6,309.9990
Total	**4.0578**	**46.0235**	**22.4048**	**0.0623**	**6.0334**	**1.8316**	**7.8651**	**3.3115**	**1.6851**	**4.9965**	**0.0000**	**6,269.0147**	**6,269.0147**	**1.9516**		**6,309.9990**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0721	0.8403	2.1000e-003	0.1698	1.2800e-003	0.1710	0.0450	1.1800e-003	0.0462		163.5110	163.5110	7.7700e-003		163.6742
Total	**0.0589**	**0.0721**	**0.8403**	**2.1000e-003**	**0.1698**	**1.2800e-003**	**0.1710**	**0.0450**	**1.1800e-003**	**0.0462**		**163.5110**	**163.5110**	**7.7700e-003**		**163.6742**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	1.5788	18.9478	14.6533	0.0289		0.7993	0.7993		0.7354	0.7354		2,905.1076	2,905.1076	0.9044		2,924.1000
Paving	0.0397					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6185**	**18.9478**	**14.6533**	**0.0289**		**0.7993**	**0.7993**		**0.7354**	**0.7354**		**2,905.1076**	**2,905.1076**	**0.9044**		**2,924.1000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0491	0.0601	0.7003	1.7500e-003	0.1415	1.0700e-003	0.1425	0.0375	9.9000e-004	0.0385		136.2592	136.2592	6.4800e-003		136.3952
Total	**0.0491**	**0.0601**	**0.7003**	**1.7500e-003**	**0.1415**	**1.0700e-003**	**0.1425**	**0.0375**	**9.9000e-004**	**0.0385**		**136.2592**	**136.2592**	**6.4800e-003**		**136.3952**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5788	18.9478	14.6533	0.0289		0.7993	0.7993		0.7354	0.7354	0.0000	2,905.1076	2,905.1076	0.9044		2,924.1000
Paving	0.0397					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6185**	**18.9478**	**14.6533**	**0.0289**		**0.7993**	**0.7993**		**0.7354**	**0.7354**	**0.0000**	**2,905.1076**	**2,905.1076**	**0.9044**		**2,924.1000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0491	0.0601	0.7003	1.7500e-003	0.1415	1.0700e-003	0.1425	0.0375	9.9000e-004	0.0385		136.2592	136.2592	6.4800e-003		136.3952
Total	**0.0491**	**0.0601**	**0.7003**	**1.7500e-003**	**0.1415**	**1.0700e-003**	**0.1425**	**0.0375**	**9.9000e-004**	**0.0385**		**136.2592**	**136.2592**	**6.4800e-003**		**136.3952**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4720	17.3446	14.0901	0.0289		0.7254	0.7254		0.6674	0.6674		2,858.2824	2,858.2824	0.9043		2,877.2733
Paving	0.0397					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5118**	**17.3446**	**14.0901**	**0.0289**		**0.7254**	**0.7254**		**0.6674**	**0.6674**		**2,858.2824**	**2,858.2824**	**0.9043**		**2,877.2733**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4720	17.3446	14.0901	0.0289		0.7254	0.7254		0.6674	0.6674	0.0000	2,858.2824	2,858.2824	0.9043		2,877.2733
Paving	0.0397					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5118**	**17.3446**	**14.0901**	**0.0289**		**0.7254**	**0.7254**		**0.6674**	**0.6674**	**0.0000**	**2,858.2824**	**2,858.2824**	**0.9043**		**2,877.2733**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

3.6 Landscaping - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2880	2.8916	2.8487	3.8400e-003		0.1930	0.1930		0.1776	0.1776		380.4642	380.4642	0.1204		382.9920
Total	**0.2880**	**2.8916**	**2.8487**	**3.8400e-003**		**0.1930**	**0.1930**		**0.1776**	**0.1776**		**380.4642**	**380.4642**	**0.1204**		**382.9920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0183	0.2128	5.8000e-004	0.0881	3.5000e-004	0.0885	0.0226	3.2000e-004	0.0229		43.7926	43.7926	2.0100e-003		43.8348
Total	**0.0150**	**0.0183**	**0.2128**	**5.8000e-004**	**0.0881**	**3.5000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**43.7926**	**43.7926**	**2.0100e-003**		**43.8348**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	0.2880	2.8916	2.8487	3.8400e-003		0.1930	0.1930		0.1776	0.1776	0.0000	380.4642	380.4642	0.1204		382.9920
Total	**0.2880**	**2.8916**	**2.8487**	**3.8400e-003**		**0.1930**	**0.1930**		**0.1776**	**0.1776**	**0.0000**	**380.4642**	**380.4642**	**0.1204**		**382.9920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0183	0.2128	5.8000e-004	0.0881	3.5000e-004	0.0885	0.0226	3.2000e-004	0.0229		43.7926	43.7926	2.0100e-003		43.8348
Total	**0.0150**	**0.0183**	**0.2128**	**5.8000e-004**	**0.0881**	**3.5000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**43.7926**	**43.7926**	**2.0100e-003**		**43.8348**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2992	1.4000e-004	0.0154	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0328	0.0328	9.0000e-005		0.0347
Unmitigated	1.2992	1.4000e-004	0.0154	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0328	0.0328	9.0000e-005		0.0347

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.1800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2926					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4500e-003	1.4000e-004	0.0154	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0328	0.0328	9.0000e-005		0.0347
Total	**1.2992**	**1.4000e-004**	**0.0154**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0328**	**0.0328**	**9.0000e-005**		**0.0347**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Consumer Products	1.2926					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4500e-003	1.4000e-004	0.0154	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0328	0.0328	9.0000e-005		0.0347
Architectural Coating	5.1800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2992**	**1.4000e-004**	**0.0154**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0328**	**0.0328**	**9.0000e-005**		**0.0347**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High Turnover (Sit Down Restaurant)	6.47	1000sqft	0.15	6,475.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Converted cy are footages to acres

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblConstructionPhase	NumDays	5.00	23.00
tblConstructionPhase	NumDays	100.00	86.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	5.00	23.00
tblConstructionPhase	NumDays	1.00	44.00
tblConstructionPhase	PhaseEndDate	7/3/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	3/30/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	1/31/2029	11/30/2028
tblConstructionPhase	PhaseEndDate	7/3/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	1/1/2029	11/30/2028
tblConstructionPhase	PhaseStartDate	6/1/2029	5/1/2029
tblConstructionPhase	PhaseStartDate	12/1/2028	2/1/2029
tblConstructionPhase	PhaseStartDate	12/1/2028	10/1/2028
tblConstructionPhase	PhaseStartDate	6/1/2029	5/1/2029
tblConstructionPhase	PhaseStartDate	11/1/2028	10/1/2028
tblGrading	AcresOfGrading	44.00	0.15
tblGrading	AcresOfGrading	44.00	0.00
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	6,470.00	6,475.00
tblOffRoadEquipment	HorsePower	78.00	150.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00

tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	174.00	250.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	97.00	350.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	255.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00

tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.2054	1.7464	1.6983	4.8500e-003	0.3564	0.0706	0.4270	0.1884	0.0651	0.2535	0.0000	420.2698	420.2698	0.1185	0.0000	422.7583
2029	0.1593	0.6421	0.8612	2.3400e-003	4.6200e-003	0.0261	0.0307	1.2300e-003	0.0246	0.0259	0.0000	215.7859	215.7859	0.0348	0.0000	216.5170
Total	**0.3647**	**2.3886**	**2.5594**	**7.1900e-003**	**0.3611**	**0.0967**	**0.4577**	**0.1897**	**0.0897**	**0.2794**	**0.0000**	**636.0557**	**636.0557**	**0.1533**	**0.0000**	**639.2753**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	tons/yr										MT/yr					
2028	0.2054	1.7464	1.6983	4.8500e-003	0.3564	0.0706	0.4270	0.1884	0.0651	0.2535	0.0000	420.2693	420.2693	0.1185	0.0000	422.7578
2029	0.1593	0.6421	0.8612	2.3400e-003	4.6200e-003	0.0261	0.0307	1.2300e-003	0.0246	0.0259	0.0000	215.7857	215.7857	0.0348	0.0000	216.5168
Total	**0.3647**	**2.3885**	**2.5594**	**7.1900e-003**	**0.3611**	**0.0967**	**0.4577**	**0.1897**	**0.0897**	**0.2794**	**0.0000**	**636.0550**	**636.0550**	**0.1533**	**0.0000**	**639.2746**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0287	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.2000e-004
Energy	5.9400e-003	0.0540	0.0453	3.2000e-004		4.1000e-003	4.1000e-003		4.1000e-003	4.1000e-003	0.0000	115.7053	115.7053	3.7000e-003	1.6100e-003	116.2821
Mobile	0.2846	0.5027	2.7108	6.0200e-003	0.3719	0.0100	0.3819	0.1000	9.2500e-003	0.1092	0.0000	402.6145	402.6145	0.0112	0.0000	402.8494
Waste						0.0000	0.0000		0.0000	0.0000	15.6283	0.0000	15.6283	0.9236	0.0000	35.0240
Water						0.0000	0.0000		0.0000	0.0000	0.6230	3.2190	3.8420	0.0641	1.5400e-003	5.6667
Total	**0.3192**	**0.5566**	**2.7562**	**6.3400e-003**	**0.3719**	**0.0141**	**0.3860**	**0.1000**	**0.0134**	**0.1133**	**16.2513**	**521.5389**	**537.7902**	**1.0026**	**3.1500e-003**	**559.8223**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0287	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.2000e-004
Energy	5.9400e-003	0.0540	0.0453	3.2000e-004		4.1000e-003	4.1000e-003		4.1000e-003	4.1000e-003	0.0000	115.7053	115.7053	3.7000e-003	1.6100e-003	116.2821
Mobile	0.2846	0.5027	2.7108	6.0200e-003	0.3719	0.0100	0.3819	0.1000	9.2500e-003	0.1092	0.0000	402.6145	402.6145	0.0112	0.0000	402.8494
Waste						0.0000	0.0000		0.0000	0.0000	15.6283	0.0000	15.6283	0.9236	0.0000	35.0240
Water						0.0000	0.0000		0.0000	0.0000	0.6230	3.2190	3.8420	0.0641	1.5400e-003	5.6657
Total	**0.3192**	**0.5566**	**2.7562**	**6.3400e-003**	**0.3719**	**0.0141**	**0.3860**	**0.1000**	**0.0134**	**0.1133**	**16.2513**	**521.5389**	**537.7902**	**1.0026**	**3.1500e-003**	**559.8213**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2028	10/31/2028	5	43	
2	Site Preparation	Site Preparation	10/1/2028	11/30/2028	5	44	
3	Grading	Grading	10/1/2028	11/30/2028	5	44	
4	Building Construction	Building Construction	2/1/2029	5/31/2029	5	86	
5	Paving	Paving	5/1/2029	5/31/2029	5	23	
6	Architectural Coatings	Architectural Coating	5/1/2029	5/31/2029	5	23	
7	Landscaping	Trenching	6/1/2029	8/31/2029	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.15

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 9,713; Non-Residential Outdoor: 3,238 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Site Preparation	Graders	1	8.00	250	0.41
Site Preparation	Rubber Tired Dozers	3	4.00	350	0.40
Site Preparation	Scrapers	1	4.00	350	0.48
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	350	0.37
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Architectural Coatings	Air Compressors	1	8.00	150	0.48
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	30.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	3.00	1.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	1.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.2000e-003	0.0000	3.2000e-003	4.8000e-004	0.0000	4.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0613	0.5363	0.5665	1.2700e-003		0.0228	0.0228		0.0210	0.0210	0.0000	111.4365	111.4365	0.0360	0.0000	112.1934
Total	**0.0613**	**0.5363**	**0.5665**	**1.2700e-003**	**3.2000e-003**	**0.0228**	**0.0260**	**4.8000e-004**	**0.0210**	**0.0214**	**0.0000**	**111.4365**	**111.4365**	**0.0360**	**0.0000**	**112.1934**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	2.2000e-004	1.5800e-003	2.7600e-003	1.0000e-005	2.5000e-004	5.0000e-005	3.0000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	0.9525	0.9525	1.0000e-005	0.0000	0.9527
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	1.0500e-003	0.0101	5.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	2.7417	2.7417	1.1000e-004	0.0000	2.7440
Total	**9.6000e-004**	**2.6300e-003**	**0.0129**	**6.0000e-005**	**4.1500e-003**	**8.0000e-005**	**4.2300e-003**	**1.1100e-003**	**7.0000e-005**	**1.1800e-003**	**0.0000**	**3.6942**	**3.6942**	**1.2000e-004**	**0.0000**	**3.6966**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.2000e-003	0.0000	3.2000e-003	4.8000e-004	0.0000	4.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0613	0.5363	0.5665	1.2700e-003		0.0228	0.0228		0.0210	0.0210	0.0000	111.4364	111.4364	0.0360	0.0000	112.1933
Total	**0.0613**	**0.5363**	**0.5665**	**1.2700e-003**	**3.2000e-003**	**0.0228**	**0.0260**	**4.8000e-004**	**0.0210**	**0.0214**	**0.0000**	**111.4364**	**111.4364**	**0.0360**	**0.0000**	**112.1933**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2000e-004	1.5800e-003	2.7600e-003	1.0000e-005	2.5000e-004	5.0000e-005	3.0000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	0.9525	0.9525	1.0000e-005	0.0000	0.9527
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	1.0500e-003	0.0101	5.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	2.7417	2.7417	1.1000e-004	0.0000	2.7440

Total	**9.6000e-004**	**2.6300e-003**	**0.0129**	**6.0000e-005**	**4.1500e-003**	**8.0000e-005**	**4.2300e-003**	**1.1100e-003**	**7.0000e-005**	**1.1800e-003**	**0.0000**	**3.6942**	**3.6942**	**1.2000e-004**	**0.0000**	**3.6966**

3.3 Site Preparation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0679	0.6007	0.5305	1.4900e-003		0.0241	0.0241		0.0222	0.0222	0.0000	130.8672	130.8672	0.0423	0.0000	131.7561
Total	**0.0679**	**0.6007**	**0.5305**	**1.4900e-003**	**0.1987**	**0.0241**	**0.2228**	**0.1092**	**0.0222**	**0.1314**	**0.0000**	**130.8672**	**130.8672**	**0.0423**	**0.0000**	**131.7561**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.6000e-004	1.0800e-003	0.0104	5.0000e-005	3.9900e-003	3.0000e-005	4.0200e-003	1.0600e-003	3.0000e-005	1.0900e-003	0.0000	2.8054	2.8054	1.1000e-004	0.0000	2.8078
Total	**7.6000e-004**	**1.0800e-003**	**0.0104**	**5.0000e-005**	**3.9900e-003**	**3.0000e-005**	**4.0200e-003**	**1.0600e-003**	**3.0000e-005**	**1.0900e-003**	**0.0000**	**2.8054**	**2.8054**	**1.1000e-004**	**0.0000**	**2.8078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0679	0.6007	0.5305	1.4900e-003		0.0241	0.0241		0.0222	0.0222	0.0000	130.8671	130.8671	0.0423	0.0000	131.7559
Total	**0.0679**	**0.6007**	**0.5305**	**1.4900e-003**	**0.1987**	**0.0241**	**0.2228**	**0.1092**	**0.0222**	**0.1314**	**0.0000**	**130.8671**	**130.8671**	**0.0423**	**0.0000**	**131.7559**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.6000e-004	1.0800e-003	0.0104	5.0000e-005	3.9900e-003	3.0000e-005	4.0200e-003	1.0600e-003	3.0000e-005	1.0900e-003	0.0000	2.8054	2.8054	1.1000e-004	0.0000	2.8078
Total	**7.6000e-004**	**1.0800e-003**	**0.0104**	**5.0000e-005**	**3.9900e-003**	**3.0000e-005**	**4.0200e-003**	**1.0600e-003**	**3.0000e-005**	**1.0900e-003**	**0.0000**	**2.8054**	**2.8054**	**1.1000e-004**	**0.0000**	**2.8078**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1331	0.0000	0.1331	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0652	0.5444	0.4631	1.5100e-003		0.0218	0.0218		0.0202	0.0202	0.0000	132.4910	132.4910	0.0396	0.0000	133.3214

Total	**0.0652**	**0.5444**	**0.4631**	**1.5100e-003**	**0.1331**	**0.0218**	**0.1549**	**0.0729**	**0.0202**	**0.0931**	**0.0000**	**132.4910**	**132.4910**	**0.0396**	**0.0000**	**133.3214**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0604	0.1056	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4506	36.4506	2.6000e-004	0.0000	36.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	9.7000e-004	9.3300e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5249	2.5249	1.0000e-004	0.0000	2.5270
Total	**9.2800e-003**	**0.0614**	**0.1149**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9754**	**38.9754**	**3.6000e-004**	**0.0000**	**38.9830**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1331	0.0000	0.1331	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0652	0.5444	0.4631	1.5100e-003		0.0218	0.0218		0.0202	0.0202	0.0000	132.4908	132.4908	0.0395	0.0000	133.3213
Total	**0.0652**	**0.5444**	**0.4631**	**1.5100e-003**	**0.1331**	**0.0218**	**0.1549**	**0.0729**	**0.0202**	**0.0931**	**0.0000**	**132.4908**	**132.4908**	**0.0395**	**0.0000**	**133.3213**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0604	0.1056	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4506	36.4506	2.6000e-004	0.0000	36.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	9.7000e-004	9.3300e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5249	2.5249	1.0000e-004	0.0000	2.5270
Total	**9.2800e-003**	**0.0614**	**0.1149**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9754**	**38.9754**	**3.6000e-004**	**0.0000**	**38.9830**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0604	0.4320	0.5530	1.7300e-003		0.0172	0.0172		0.0164	0.0164	0.0000	164.0727	164.0727	0.0213	0.0000	164.5208
Total	**0.0604**	**0.4320**	**0.5530**	**1.7300e-003**		**0.0172**	**0.0172**		**0.0164**	**0.0164**	**0.0000**	**164.0727**	**164.0727**	**0.0213**	**0.0000**	**164.5208**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-004	1.5800e-003	4.0500e-003	1.0000e-005	2.8000e-004	4.0000e-005	3.2000e-004	8.0000e-005	3.0000e-005	1.1000e-004	0.0000	0.8655	0.8655	1.0000e-005	0.0000	0.8657

Worker	2.1000e-004	3.0000e-004	2.9300e-003	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.8165	0.8165	3.0000e-005	0.0000	0.8171
Total	**5.0000e-004**	**1.8800e-003**	**6.9800e-003**	**2.0000e-005**	**1.4500e-003**	**5.0000e-005**	**1.5000e-003**	**3.9000e-004**	**4.0000e-005**	**4.3000e-004**	**0.0000**	**1.6820**	**1.6820**	**4.0000e-005**	**0.0000**	**1.6828**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0604	0.4320	0.5530	1.7300e-003		0.0172	0.0172		0.0164	0.0164	0.0000	164.0725	164.0725	0.0213	0.0000	164.5206
Total	**0.0604**	**0.4320**	**0.5530**	**1.7300e-003**		**0.0172**	**0.0172**		**0.0164**	**0.0164**	**0.0000**	**164.0725**	**164.0725**	**0.0213**	**0.0000**	**164.5206**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-004	1.5800e-003	4.0500e-003	1.0000e-005	2.8000e-004	4.0000e-005	3.2000e-004	8.0000e-005	3.0000e-005	1.1000e-004	0.0000	0.8655	0.8655	1.0000e-005	0.0000	0.8657
Worker	2.1000e-004	3.0000e-004	2.9300e-003	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.8165	0.8165	3.0000e-005	0.0000	0.8171
Total	**5.0000e-004**	**1.8800e-003**	**6.9800e-003**	**2.0000e-005**	**1.4500e-003**	**5.0000e-005**	**1.5000e-003**	**3.9000e-004**	**4.0000e-005**	**4.3000e-004**	**0.0000**	**1.6820**	**1.6820**	**4.0000e-005**	**0.0000**	**1.6828**

3.6 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0135	0.1327	0.1554	3.3000e-004		5.6600e-003	5.6600e-003		5.2100e-003	5.2100e-003	0.0000	29.1068	29.1068	9.4100e-003	0.0000	29.3045
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0135**	**0.1327**	**0.1554**	**3.3000e-004**		**5.6600e-003**	**5.6600e-003**		**5.2100e-003**	**5.2100e-003**	**0.0000**	**29.1068**	**29.1068**	**9.4100e-003**	**0.0000**	**29.3045**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	4.0000e-004	3.9100e-003	2.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.0918	1.0918	4.0000e-005	0.0000	1.0927
Total	**2.9000e-004**	**4.0000e-004**	**3.9100e-003**	**2.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.0918**	**1.0918**	**4.0000e-005**	**0.0000**	**1.0927**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0135	0.1327	0.1554	3.3000e-004		5.6600e-003	5.6600e-003		5.2100e-003	5.2100e-003	0.0000	29.1068	29.1068	9.4100e-003	0.0000	29.3044

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0135**	**0.1327**	**0.1554**	**3.3000e-004**		**5.6600e-003**	**5.6600e-003**		**5.2100e-003**	**5.2100e-003**	**0.0000**	**29.1068**	**29.1068**	**9.4100e-003**	**0.0000**	**29.3044**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	4.0000e-004	3.9100e-003	2.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.0918	1.0918	4.0000e-005	0.0000	1.0927
Total	**2.9000e-004**	**4.0000e-004**	**3.9100e-003**	**2.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.0918**	**1.0918**	**4.0000e-005**	**0.0000**	**1.0927**

3.7 Architectural Coatings - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0750					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9300e-003	0.0202	0.0468	9.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	7.5288	7.5288	3.2000e-004	0.0000	7.5355
Total	**0.0790**	**0.0202**	**0.0468**	**9.0000e-005**		**9.5000e-004**	**9.5000e-004**		**9.5000e-004**	**9.5000e-004**	**0.0000**	**7.5288**	**7.5288**	**3.2000e-004**	**0.0000**	**7.5355**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	3.0000e-005	2.6000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0728	0.0728	0.0000	0.0000	0.0728
Total	**2.0000e-005**	**3.0000e-005**	**2.6000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0728**	**0.0728**	**0.0000**	**0.0000**	**0.0728**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0750					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9300e-003	0.0202	0.0468	9.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	7.5288	7.5288	3.2000e-004	0.0000	7.5355
Total	**0.0790**	**0.0202**	**0.0468**	**9.0000e-005**		**9.5000e-004**	**9.5000e-004**		**9.5000e-004**	**9.5000e-004**	**0.0000**	**7.5288**	**7.5288**	**3.2000e-004**	**0.0000**	**7.5355**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	3.0000e-005	2.6000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0728	0.0728	0.0000	0.0000	0.0728
Total	**2.0000e-005**	**3.0000e-005**	**2.6000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0728**	**0.0728**	**0.0000**	**0.0000**	**0.0728**

3.8 Landscaping - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3900e-003	0.0545	0.0910	1.3000e-004		2.2100e-003	2.2100e-003		2.0300e-003	2.0300e-003	0.0000	11.1868	11.1868	3.6200e-003	0.0000	11.2628
Total	**5.3900e-003**	**0.0545**	**0.0910**	**1.3000e-004**		**2.2100e-003**	**2.2100e-003**		**2.0300e-003**	**2.0300e-003**	**0.0000**	**11.1868**	**11.1868**	**3.6200e-003**	**0.0000**	**11.2628**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.9000e-004	3.7400e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.0443	1.0443	4.0000e-005	0.0000	1.0452
Total	**2.7000e-004**	**3.9000e-004**	**3.7400e-003**	**2.0000e-005**	**1.5000e-003**	**1.0000e-005**	**1.5100e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.0443**	**1.0443**	**4.0000e-005**	**0.0000**	**1.0452**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3900e-003	0.0545	0.0910	1.3000e-004		2.2100e-003	2.2100e-003		2.0300e-003	2.0300e-003	0.0000	11.1868	11.1868	3.6200e-003	0.0000	11.2628
Total	**5.3900e-003**	**0.0545**	**0.0910**	**1.3000e-004**		**2.2100e-003**	**2.2100e-003**		**2.0300e-003**	**2.0300e-003**	**0.0000**	**11.1868**	**11.1868**	**3.6200e-003**	**0.0000**	**11.2628**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.9000e-004	3.7400e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.0443	1.0443	4.0000e-005	0.0000	1.0452
Total	**2.7000e-004**	**3.9000e-004**	**3.7400e-003**	**2.0000e-005**	**1.5000e-003**	**1.0000e-005**	**1.5100e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.0443**	**1.0443**	**4.0000e-005**	**0.0000**	**1.0452**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2846	0.5027	2.7108	6.0200e-003	0.3719	0.0100	0.3819	0.1000	9.2500e-003	0.1092	0.0000	402.6145	402.6145	0.0112	0.0000	402.8494
Unmitigated	0.2846	0.5027	2.7108	6.0200e-003	0.3719	0.0100	0.3819	0.1000	9.2500e-003	0.1092	0.0000	402.6145	402.6145	0.0112	0.0000	402.8494

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High Turnover (Sit Down Restaurant)	822.66	1,024.65	853.00	993,014	993,014
Total	822.66	1,024.65	853.00	993,014	993,014

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	56.9616	56.9616	2.5800e-003	5.3000e-004	57.1809
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	56.9616	56.9616	2.5800e-003	5.3000e-004	57.1809
NaturalGas Mitigated	5.9400e-003	0.0540	0.0453	3.2000e-004		4.1000e-003	4.1000e-003		4.1000e-003	4.1000e-003	0.0000	58.7437	58.7437	1.1300e-003	1.0800e-003	59.1012
NaturalGas Unmitigated	5.9400e-003	0.0540	0.0453	3.2000e-004		4.1000e-003	4.1000e-003		4.1000e-003	4.1000e-003	0.0000	58.7437	58.7437	1.1300e-003	1.0800e-003	59.1012

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High Turnover (Sit Down Restaurant)	1.10081e+006	5.9400e-003	0.0540	0.0453	3.2000e-004		4.1000e-003	4.1000e-003		4.1000e-003	4.1000e-003	0.0000	58.7437	58.7437	1.1300e-003	1.0800e-003	59.1012
Total		**5.9400e-003**	**0.0540**	**0.0453**	**3.2000e-004**		**4.1000e-003**	**4.1000e-003**		**4.1000e-003**	**4.1000e-003**	**0.0000**	**58.7437**	**58.7437**	**1.1300e-003**	**1.0800e-003**	**59.1012**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High Turnover (Sit Down Restaurant)	1.10081e+006	5.9400e-003	0.0540	0.0453	3.2000e-004		4.1000e-003	4.1000e-003		4.1000e-003	4.1000e-003	0.0000	58.7437	58.7437	1.1300e-003	1.0800e-003	59.1012
Total		**5.9400e-003**	**0.0540**	**0.0453**	**3.2000e-004**		**4.1000e-003**	**4.1000e-003**		**4.1000e-003**	**4.1000e-003**	**0.0000**	**58.7437**	**58.7437**	**1.1300e-003**	**1.0800e-003**	**59.1012**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High Turnover (Sit Down Restaurant)	195804	56.9616	2.5800e-003	5.3000e-004	57.1809
Total		**56.9616**	**2.5800e-003**	**5.3000e-004**	**57.1809**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High Turnover (Sit Down Restaurant)	195804	56.9616	2.5800e-003	5.3000e-004	57.1809
Total		**56.9616**	**2.5800e-003**	**5.3000e-004**	**57.1809**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0287	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.2000e-004
Unmitigated	0.0287	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.2000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.3800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.2000e-004
Total	**0.0287**	**0.0000**	**6.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.2000e-004**	**1.2000e-004**	**0.0000**	**0.0000**	**1.2000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					

Architectural Coating	3.3800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.2000e-004
Total	**0.0287**	**0.0000**	**6.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.2000e-004**	**1.2000e-004**	**0.0000**	**0.0000**	**1.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.8420	0.0641	1.5400e-003	5.6657
Unmitigated	3.8420	0.0641	1.5400e-003	5.6667

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High Turnover (Sit Down Restaurant)	1.96386 / 0.125353	3.8420	0.0641	1.5400e-003	5.6667
Total		**3.8420**	**0.0641**	**1.5400e-003**	**5.6667**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High Turnover (Sit Down Restaurant)	1.96386 / 0.125353	3.8420	0.0641	1.5400e-003	5.6657
Total		**3.8420**	**0.0641**	**1.5400e-003**	**5.6657**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	15.6283	0.9236	0.0000	35.0240
Unmitigated	15.6283	0.9236	0.0000	35.0240

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High Turnover (Sit Down Restaurant)	76.99	15.6283	0.9236	0.0000	35.0240
Total		**15.6283**	**0.9236**	**0.0000**	**35.0240**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High Turnover (Sit Down Restaurant)	76.99	15.6283	0.9236	0.0000	35.0240
Total		**15.6283**	**0.9236**	**0.0000**	**35.0240**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High Turnover (Sit Down Restaurant)	6.47	1000sqft	0.15	6,475.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Converted cy are footages to acres

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblConstructionPhase	NumDays	5.00	23.00
tblConstructionPhase	NumDays	100.00	86.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	5.00	23.00
tblConstructionPhase	NumDays	1.00	44.00
tblConstructionPhase	PhaseEndDate	7/3/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	3/30/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	1/31/2029	11/30/2028
tblConstructionPhase	PhaseEndDate	7/3/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	1/1/2029	11/30/2028
tblConstructionPhase	PhaseStartDate	6/1/2029	5/1/2029
tblConstructionPhase	PhaseStartDate	12/1/2028	2/1/2029
tblConstructionPhase	PhaseStartDate	12/1/2028	10/1/2028
tblConstructionPhase	PhaseStartDate	6/1/2029	5/1/2029
tblConstructionPhase	PhaseStartDate	11/1/2028	10/1/2028
tblGrading	AcresOfGrading	44.00	0.15
tblGrading	AcresOfGrading	44.00	0.00
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	6,470.00	6,475.00
tblOffRoadEquipment	HorsePower	78.00	150.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00

tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	174.00	250.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	97.00	350.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	255.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00

tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	9.3926	79.8366	76.7979	0.2222	16.2456	3.2315	19.4772	8.5752	2.9805	11.5556	0.0000	21,225.6408	21,225.6408	5.9794	0.0000	21,351.2083
2029	9.4819	23.4179	30.9918	0.0791	0.1859	0.9771	1.1629	0.0494	0.9185	0.9679	0.0000	7,882.8959	7,882.8959	1.4852	0.0000	7,914.0854
Total	**18.8744**	**103.2545**	**107.7896**	**0.3012**	**16.4315**	**4.2086**	**20.6401**	**8.6246**	**3.8990**	**12.5235**	**0.0000**	**29,108.5367**	**29,108.5367**	**7.4646**	**0.0000**	**29,265.2937**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	lb/day										lb/day					
2028	9.3926	79.8366	76.7979	0.2222	16.2456	3.2315	19.4772	8.5752	2.9805	11.5556	0.0000	21,225.6408	21,225.6408	5.9794	0.0000	21,351.2083
2029	9.4819	23.4179	30.9918	0.0791	0.1859	0.9771	1.1629	0.0494	0.9185	0.9679	0.0000	7,882.8958	7,882.8958	1.4852	0.0000	7,914.0854
Total	**18.8744**	**103.2545**	**107.7896**	**0.3012**	**16.4315**	**4.2086**	**20.6401**	**8.6246**	**3.8990**	**12.5235**	**0.0000**	**29,108.5366**	**29,108.5366**	**7.4646**	**0.0000**	**29,265.2937**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1571	1.0000e-005	6.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.4200e-003	1.4200e-003	0.0000		1.4900e-003
Energy	0.0325	0.2957	0.2484	1.7700e-003		0.0225	0.0225		0.0225	0.0225		354.8154	354.8154	6.8000e-003	6.5000e-003	356.9747
Mobile	1.9386	3.1475	14.8091	0.0417	2.5395	0.0657	2.6052	0.6805	0.0607	0.7412		3,059.6448	3,059.6448	0.0810		3,061.3451
Total	**2.1282**	**3.4432**	**15.0581**	**0.0435**	**2.5395**	**0.0882**	**2.6277**	**0.6805**	**0.0831**	**0.7636**		**3,414.4616**	**3,414.4616**	**0.0878**	**6.5000e-003**	**3,418.3214**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Area	0.1571	1.0000e-005	6.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.4200e-003	1.4200e-003	0.0000		1.4900e-003
Energy	0.0325	0.2957	0.2484	1.7700e-003		0.0225	0.0225		0.0225	0.0225		354.8154	354.8154	6.8000e-003	6.5000e-003	356.9747
Mobile	1.9386	3.1475	14.8091	0.0417	2.5395	0.0657	2.6052	0.6805	0.0607	0.7412		3,059.6448	3,059.6448	0.0810		3,061.3451
Total	**2.1282**	**3.4432**	**15.0581**	**0.0435**	**2.5395**	**0.0882**	**2.6277**	**0.6805**	**0.0831**	**0.7636**		**3,414.4616**	**3,414.4616**	**0.0878**	**6.5000e-003**	**3,418.3214**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2028	10/31/2028	5	43	
2	Site Preparation	Site Preparation	10/1/2028	11/30/2028	5	44	
3	Grading	Grading	10/1/2028	11/30/2028	5	44	
4	Building Construction	Building Construction	2/1/2029	5/31/2029	5	86	
5	Paving	Paving	5/1/2029	5/31/2029	5	23	
6	Architectural Coatings	Architectural Coating	5/1/2029	5/31/2029	5	23	
7	Landscaping	Trenching	6/1/2029	8/31/2029	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.15

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 9,713; Non-Residential Outdoor: 3,238 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73

Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Site Preparation	Graders	1	8.00	250	0.41
Site Preparation	Rubber Tired Dozers	3	4.00	350	0.40
Site Preparation	Scrapers	1	4.00	350	0.48
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	350	0.37
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Architectural Coatings	Air Compressors	1	8.00	150	0.48
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	30.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Grading	8	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	3.00	1.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	1.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1488	0.0000	0.1488	0.0225	0.0000	0.0225			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743		5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.1488**	**1.0590**	**1.2078**	**0.0225**	**0.9743**	**0.9968**		**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9600e-003	0.0708	0.0984	5.2000e-004	0.0122	2.1600e-003	0.0143	3.3300e-003	1.9800e-003	5.3200e-003		48.8853	48.8853	3.5000e-004		48.8925
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149

Total	**0.0480**	**0.1140**	**0.6182**	**2.8500e-003**	**0.2008**	**3.5300e-003**	**0.2043**	**0.0534**	**3.2500e-003**	**0.0566**		**200.4832**	**200.4832**	**5.9200e-003**		**200.6074**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1488	0.0000	0.1488	0.0225	0.0000	0.0225			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743	0.0000	5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.1488**	**1.0590**	**1.2078**	**0.0225**	**0.9743**	**0.9968**	**0.0000**	**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9600e-003	0.0708	0.0984	5.2000e-004	0.0122	2.1600e-003	0.0143	3.3300e-003	1.9800e-003	5.3200e-003		48.8853	48.8853	3.5000e-004		48.8925
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0480**	**0.1140**	**0.6182**	**2.8500e-003**	**0.2008**	**3.5300e-003**	**0.2043**	**0.0534**	**3.2500e-003**	**0.0566**		**200.4832**	**200.4832**	**5.9200e-003**		**200.6074**

3.3 Site Preparation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0331	0.0000	9.0331	4.9653	0.0000	4.9653			0.0000			0.0000
Off-Road	3.0844	27.3046	24.1118	0.0677		1.0958	1.0958		1.0081	1.0081		6,557.1099	6,557.1099	2.1207		6,601.6447
Total	**3.0844**	**27.3046**	**24.1118**	**0.0677**	**9.0331**	**1.0958**	**10.1289**	**4.9653**	**1.0081**	**5.9735**		**6,557.1099**	**6,557.1099**	**2.1207**		**6,601.6447**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0331	0.0000	9.0331	4.9653	0.0000	4.9653			0.0000			0.0000
Off-Road	3.0844	27.3046	24.1118	0.0677		1.0958	1.0958		1.0081	1.0081	0.0000	6,557.1099	6,557.1099	2.1207		6,601.6447

Total	**3.0844**	**27.3046**	**24.1118**	**0.0677**	**9.0331**	**1.0958**	**10.1289**	**4.9653**	**1.0081**	**5.9735**	**0.0000**	**6,557.1099**	**6,557.1099**	**2.1207**		**6,601.6447**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0493	0.0000	6.0493	3.3142	0.0000	3.3142			0.0000			0.0000
Off-Road	2.9622	24.7448	21.0519	0.0687		0.9900	0.9900		0.9182	0.9182		6,638.4682	6,638.4682	1.9814		6,680.0777
Total	**2.9622**	**24.7448**	**21.0519**	**0.0687**	**6.0493**	**0.9900**	**7.0393**	**3.3142**	**0.9182**	**4.2324**		**6,638.4682**	**6,638.4682**	**1.9814**		**6,680.0777**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3726	2.6481	3.6808	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1602	1,828.1602	0.0130		1,828.4327
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434
Total	**0.4069**	**2.6870**	**4.1486**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,964.5983**	**1,964.5983**	**0.0180**		**1,964.9761**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0493	0.0000	6.0493	3.3142	0.0000	3.3142			0.0000			0.0000
Off-Road	2.9622	24.7448	21.0519	0.0687		0.9900	0.9900		0.9182	0.9182	0.0000	6,638.4682	6,638.4682	1.9814		6,680.0777
Total	**2.9622**	**24.7448**	**21.0519**	**0.0687**	**6.0493**	**0.9900**	**7.0393**	**3.3142**	**0.9182**	**4.2324**	**0.0000**	**6,638.4682**	**6,638.4682**	**1.9814**		**6,680.0777**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3726	2.6481	3.6808	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1602	1,828.1602	0.0130		1,828.4327
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434
Total	**0.4069**	**2.6870**	**4.1486**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,964.5983**	**1,964.5983**	**0.0180**		**1,964.9761**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810		4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**		**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.2000e-003	0.0357	0.0687	2.4000e-004	6.6800e-003	8.6000e-004	7.5500e-003	1.9100e-003	7.9000e-004	2.7100e-003		22.2600	22.2600	1.6000e-004		22.2633
Worker	5.4800e-003	6.2100e-003	0.0751	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		22.5742	22.5742	8.1000e-004		22.5913
Total	**0.0117**	**0.0420**	**0.1439**	**5.9000e-004**	**0.0350**	**1.0700e-003**	**0.0361**	**9.4100e-003**	**9.8000e-004**	**0.0104**		**44.8343**	**44.8343**	**9.7000e-004**		**44.8547**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810	0.0000	4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**	**0.0000**	**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.2000e-003	0.0357	0.0687	2.4000e-004	6.6800e-003	8.6000e-004	7.5500e-003	1.9100e-003	7.9000e-004	2.7100e-003		22.2600	22.2600	1.6000e-004		22.2633
Worker	5.4800e-003	6.2100e-003	0.0751	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		22.5742	22.5742	8.1000e-004		22.5913
Total	**0.0117**	**0.0420**	**0.1439**	**5.9000e-004**	**0.0350**	**1.0700e-003**	**0.0361**	**9.4100e-003**	**9.8000e-004**	**0.0104**		**44.8343**	**44.8343**	**9.7000e-004**		**44.8547**

3.6 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1701	11.5398	13.5167	0.0288		0.4923	0.4923		0.4529	0.4529		2,789.9775	2,789.9775	0.9023		2,808.9266

Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1701**	**11.5398**	**13.5167**	**0.0288**		**0.4923**	**0.4923**		**0.4529**	**0.4529**		**2,789.9775**	**2,789.9775**	**0.9023**		**2,808.9266**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0274	0.0311	0.3757	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.8712	112.8712	4.0700e-003		112.9566
Total	**0.0274**	**0.0311**	**0.3757**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.8712**	**112.8712**	**4.0700e-003**		**112.9566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1701	11.5398	13.5167	0.0288		0.4923	0.4923		0.4529	0.4529	0.0000	2,789.9775	2,789.9775	0.9023		2,808.9266
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1701**	**11.5398**	**13.5167**	**0.0288**		**0.4923**	**0.4923**		**0.4529**	**0.4529**	**0.0000**	**2,789.9775**	**2,789.9775**	**0.9023**		**2,808.9266**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0274	0.0311	0.3757	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.8712	112.8712	4.0700e-003		112.9566
Total	**0.0274**	**0.0311**	**0.3757**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.8712**	**112.8712**	**4.0700e-003**		**112.9566**

3.7 Architectural Coatings - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.5248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3416	1.7562	4.0699	7.6200e-003		0.0825	0.0825		0.0825	0.0825		721.6617	721.6617	0.0305		722.3017
Total	**6.8664**	**1.7562**	**4.0699**	**7.6200e-003**		**0.0825**	**0.0825**		**0.0825**	**0.0825**		**721.6617**	**721.6617**	**0.0305**		**722.3017**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8300e-003	2.0700e-003	0.0250	1.2000e-004	9.4300e-003	7.0000e-005	9.5000e-003	2.5000e-003	6.0000e-005	2.5700e-003		7.5247	7.5247	2.7000e-004		7.5304
Total	**1.8300e-003**	**2.0700e-003**	**0.0250**	**1.2000e-004**	**9.4300e-003**	**7.0000e-005**	**9.5000e-003**	**2.5000e-003**	**6.0000e-005**	**2.5700e-003**		**7.5247**	**7.5247**	**2.7000e-004**		**7.5304**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.5248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3416	1.7562	4.0699	7.6200e-003		0.0825	0.0825		0.0825	0.0825	0.0000	721.6617	721.6617	0.0305		722.3017
Total	**6.8664**	**1.7562**	**4.0699**	**7.6200e-003**		**0.0825**	**0.0825**		**0.0825**	**0.0825**	**0.0000**	**721.6617**	**721.6617**	**0.0305**		**722.3017**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8300e-003	2.0700e-003	0.0250	1.2000e-004	9.4300e-003	7.0000e-005	9.5000e-003	2.5000e-003	6.0000e-005	2.5700e-003		7.5247	7.5247	2.7000e-004		7.5304
Total	**1.8300e-003**	**2.0700e-003**	**0.0250**	**1.2000e-004**	**9.4300e-003**	**7.0000e-005**	**9.5000e-003**	**2.5000e-003**	**6.0000e-005**	**2.5700e-003**		**7.5247**	**7.5247**	**2.7000e-004**		**7.5304**

3.8 Landscaping - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616		373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**		**373.6773**	**373.6773**	**0.1209**		**376.2153**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0472	3.4000e-004	0.0475	0.0125	3.2000e-004	0.0128		37.6237	37.6237	1.3600e-003		37.6522
Total	**9.1300e-003**	**0.0104**	**0.1252**	**5.8000e-004**	**0.0472**	**3.4000e-004**	**0.0475**	**0.0125**	**3.2000e-004**	**0.0128**		**37.6237**	**37.6237**	**1.3600e-003**		**37.6522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616	0.0000	373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**	**0.0000**	**373.6773**	**373.6773**	**0.1209**		**376.2153**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0472	3.4000e-004	0.0475	0.0125	3.2000e-004	0.0128		37.6237	37.6237	1.3600e-003		37.6522
Total	**9.1300e-003**	**0.0104**	**0.1252**	**5.8000e-004**	**0.0472**	**3.4000e-004**	**0.0475**	**0.0125**	**3.2000e-004**	**0.0128**		**37.6237**	**37.6237**	**1.3600e-003**		**37.6522**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9386	3.1475	14.8091	0.0417	2.5395	0.0657	2.6052	0.6805	0.0607	0.7412		3,059.6448	3,059.6448	0.0810		3,061.3451
Unmitigated	1.9386	3.1475	14.8091	0.0417	2.5395	0.0657	2.6052	0.6805	0.0607	0.7412		3,059.6448	3,059.6448	0.0810		3,061.3451

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High Turnover (Sit Down Restaurant)	822.66	1,024.65	853.00	993,014	993,014
Total	822.66	1,024.65	853.00	993,014	993,014

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0325	0.2957	0.2484	1.7700e-003		0.0225	0.0225		0.0225	0.0225		354.8154	354.8154	6.8000e-003	6.5000e-003	356.9747
NaturalGas Unmitigated	0.0325	0.2957	0.2484	1.7700e-003		0.0225	0.0225		0.0225	0.0225		354.8154	354.8154	6.8000e-003	6.5000e-003	356.9747

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
High Turnover (Sit Down Restaurant)	3015.93	0.0325	0.2957	0.2484	1.7700e-003		0.0225	0.0225		0.0225	0.0225		354.8154	354.8154	6.8000e-003	6.5000e-003	356.9747
Total		**0.0325**	**0.2957**	**0.2484**	**1.7700e-003**		**0.0225**	**0.0225**		**0.0225**	**0.0225**		**354.8154**	**354.8154**	**6.8000e-003**	**6.5000e-003**	**356.9747**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
High Turnover (Sit Down Restaurant)	3.01593	0.0325	0.2957	0.2484	1.7700e-003		0.0225	0.0225		0.0225	0.0225		354.8154	354.8154	6.8000e-003	6.5000e-003	356.9747
Total		**0.0325**	**0.2957**	**0.2484**	**1.7700e-003**		**0.0225**	**0.0225**		**0.0225**	**0.0225**		**354.8154**	**354.8154**	**6.8000e-003**	**6.5000e-003**	**356.9747**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Mitigated	0.1571	1.0000e-005	6.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.4200e-003	1.4200e-003	0.0000		1.4900e-003
Unmitigated	0.1571	1.0000e-005	6.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.4200e-003	1.4200e-003	0.0000		1.4900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0185					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1386					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.4200e-003	1.4200e-003	0.0000		1.4900e-003
Total	**0.1571**	**1.0000e-005**	**6.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.4200e-003**	**1.4200e-003**	**0.0000**		**1.4900e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.1386					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.4200e-003	1.4200e-003	0.0000		1.4900e-003
Architectural Coating	0.0185					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**0.1571**	**1.0000e-005**	**6.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.4200e-003**	**1.4200e-003**	**0.0000**		**1.4900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.60	Acre	1.60	70,310.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Converted cy are footages to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	200.00	66.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	PhaseEndDate	7/3/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	3/2/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	1/31/2029	11/30/2028
tblConstructionPhase	PhaseEndDate	7/3/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	1/1/2029	11/30/2028
tblConstructionPhase	PhaseStartDate	6/1/2029	5/1/2029
tblConstructionPhase	PhaseStartDate	12/1/2028	3/1/2029
tblConstructionPhase	PhaseStartDate	12/1/2028	10/1/2028
tblConstructionPhase	PhaseStartDate	6/1/2029	5/1/2029
tblConstructionPhase	PhaseStartDate	11/1/2028	10/1/2028
tblGrading	AcresOfGrading	44.00	1.60
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	69,696.00	70,310.00
tblOffRoadEquipment	HorsePower	78.00	150.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00

tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030

tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.1575	1.3438	1.3678	3.6100e-003	0.2792	0.0561	0.3353	0.1428	0.0516	0.1944	0.0000	312.9515	312.9515	0.0881	0.0000	314.8010
2029	0.4407	0.5568	0.7866	2.1200e-003	0.0165	0.0225	0.0390	4.4300e-003	0.0212	0.0256	0.0000	190.5481	190.5481	0.0301	0.0000	191.1808
Total	**0.5982**	**1.9006**	**2.1544**	**5.7300e-003**	**0.2958**	**0.0786**	**0.3743**	**0.1472**	**0.0728**	**0.2200**	**0.0000**	**503.4996**	**503.4996**	**0.1182**	**0.0000**	**505.9818**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.1575	1.3438	1.3678	3.6100e-003	0.2792	0.0561	0.3353	0.1428	0.0516	0.1944	0.0000	312.9511	312.9511	0.0881	0.0000	314.8007
2029	0.4407	0.5568	0.7866	2.1200e-003	0.0165	0.0225	0.0390	4.4300e-003	0.0212	0.0256	0.0000	190.5479	190.5479	0.0301	0.0000	191.1806
Total	**0.5982**	**1.9006**	**2.1544**	**5.7300e-003**	**0.2958**	**0.0786**	**0.3743**	**0.1472**	**0.0728**	**0.2200**	**0.0000**	**503.4990**	**503.4990**	**0.1182**	**0.0000**	**505.9813**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3113	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	9.7000e-004	2.2200e-003	0.0103	3.0000e-005	2.0300e-003	5.0000e-005	2.0800e-003	5.5000e-004	5.0000e-005	5.9000e-004	0.0000	2.1250	2.1250	6.0000e-005	0.0000	2.1262
Waste						0.0000	0.0000		0.0000	0.0000	0.0284	0.0000	0.0284	1.6800e-003	0.0000	0.0637
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.9411	1.9411	9.0000e-005	2.0000e-005	1.9485
Total	**0.3122**	**2.2200e-003**	**0.0103**	**3.0000e-005**	**2.0300e-003**	**5.0000e-005**	**2.0800e-003**	**5.5000e-004**	**5.0000e-005**	**5.9000e-004**	**0.0284**	**4.0661**	**4.0945**	**1.8300e-003**	**2.0000e-005**	**4.1384**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3113	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	9.7000e-004	2.2200e-003	0.0103	3.0000e-005	2.0300e-003	5.0000e-005	2.0800e-003	5.5000e-004	5.0000e-005	5.9000e-004	0.0000	2.1250	2.1250	6.0000e-005	0.0000	2.1262
Waste						0.0000	0.0000		0.0000	0.0000	0.0284	0.0000	0.0284	1.6800e-003	0.0000	0.0637
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.9411	1.9411	9.0000e-005	2.0000e-005	1.9485
Total	**0.3122**	**2.2200e-003**	**0.0103**	**3.0000e-005**	**2.0300e-003**	**5.0000e-005**	**2.0800e-003**	**5.5000e-004**	**5.0000e-005**	**5.9000e-004**	**0.0284**	**4.0661**	**4.0945**	**1.8300e-003**	**2.0000e-005**	**4.1384**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2028	10/31/2028	5	43	
2	Excavation	Site Preparation	10/1/2028	11/30/2028	5	44	
3	Grading	Grading	10/1/2028	11/30/2028	5	44	
4	Building Construction	Building Construction	3/1/2029	5/31/2029	5	66	
5	Paving	Paving	5/1/2029	5/31/2029	5	23	
6	Architectural Coatings	Architectural Coating	5/1/2029	5/31/2029	5	23	
7	Landscaping	Trenching	6/1/2029	8/31/2029	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.6

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 105,465; Non-Residential Outdoor: 35,155 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41

Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Architectural Coatings	Air Compressors	1	8.00	150	0.48
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Excavation	Graders	1	8.00	174	0.41
Excavation	Rubber Tired Dozers	1	7.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	30.00	12.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	6.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0613	0.5363	0.5665	1.2700e-003		0.0228	0.0228		0.0210	0.0210	0.0000	111.4365	111.4365	0.0360	0.0000	112.1934
Total	**0.0613**	**0.5363**	**0.5665**	**1.2700e-003**	**0.0000**	**0.0228**	**0.0228**	**0.0000**	**0.0210**	**0.0210**	**0.0000**	**111.4365**	**111.4365**	**0.0360**	**0.0000**	**112.1934**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	1.0500e-003	0.0101	5.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	2.7417	2.7417	1.1000e-004	0.0000	2.7440
Total	**7.4000e-004**	**1.0500e-003**	**0.0101**	**5.0000e-005**	**3.9000e-003**	**3.0000e-005**	**3.9300e-003**	**1.0400e-003**	**3.0000e-005**	**1.0700e-003**	**0.0000**	**2.7417**	**2.7417**	**1.1000e-004**	**0.0000**	**2.7440**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0613	0.5363	0.5665	1.2700e-003		0.0228	0.0228		0.0210	0.0210	0.0000	111.4364	111.4364	0.0360	0.0000	112.1933
Total	**0.0613**	**0.5363**	**0.5665**	**1.2700e-003**	**0.0000**	**0.0228**	**0.0228**	**0.0000**	**0.0210**	**0.0210**	**0.0000**	**111.4364**	**111.4364**	**0.0360**	**0.0000**	**112.1933**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	1.0500e-003	0.0101	5.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	2.7417	2.7417	1.1000e-004	0.0000	2.7440
Total	**7.4000e-004**	**1.0500e-003**	**0.0101**	**5.0000e-005**	**3.9000e-003**	**3.0000e-005**	**3.9300e-003**	**1.0400e-003**	**3.0000e-005**	**1.0700e-003**	**0.0000**	**2.7417**	**2.7417**	**1.1000e-004**	**0.0000**	**2.7440**

3.3 Excavation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1276	0.0000	0.1276	0.0650	0.0000	0.0650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0274	0.2505	0.2918	4.4000e-004		0.0118	0.0118		0.0108	0.0108	0.0000	38.7145	38.7145	0.0125	0.0000	38.9775

Total	**0.0274**	**0.2505**	**0.2918**	**4.4000e-004**	**0.1276**	**0.0118**	**0.1393**	**0.0650**	**0.0108**	**0.0758**	**0.0000**	**38.7145**	**38.7145**	**0.0125**	**0.0000**	**38.9775**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.6000e-004	1.5600e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4208	0.4208	2.0000e-005	0.0000	0.4212
Total	**1.1000e-004**	**1.6000e-004**	**1.5600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4208**	**0.4208**	**2.0000e-005**	**0.0000**	**0.4212**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1276	0.0000	0.1276	0.0650	0.0000	0.0650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0274	0.2505	0.2918	4.4000e-004		0.0118	0.0118		0.0108	0.0108	0.0000	38.7145	38.7145	0.0125	0.0000	38.9774
Total	**0.0274**	**0.2505**	**0.2918**	**4.4000e-004**	**0.1276**	**0.0118**	**0.1393**	**0.0650**	**0.0108**	**0.0758**	**0.0000**	**38.7145**	**38.7145**	**0.0125**	**0.0000**	**38.9774**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.6000e-004	1.5600e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4208	0.4208	2.0000e-005	0.0000	0.4212
Total	**1.1000e-004**	**1.6000e-004**	**1.5600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4208**	**0.4208**	**2.0000e-005**	**0.0000**	**0.4212**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1339	0.0000	0.1339	0.0730	0.0000	0.0730	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0587	0.4945	0.3830	1.3700e-003		0.0197	0.0197		0.0182	0.0182	0.0000	120.6625	120.6625	0.0390	0.0000	121.4820
Total	**0.0587**	**0.4945**	**0.3830**	**1.3700e-003**	**0.1339**	**0.0197**	**0.1536**	**0.0730**	**0.0182**	**0.0912**	**0.0000**	**120.6625**	**120.6625**	**0.0390**	**0.0000**	**121.4820**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0604	0.1056	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4506	36.4506	2.6000e-004	0.0000	36.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	6.9000e-004	9.7000e-004	9.3300e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5249	2.5249	1.0000e-004	0.0000	2.5270
Total	**9.2800e-003**	**0.0614**	**0.1149**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9754**	**38.9754**	**3.6000e-004**	**0.0000**	**38.9830**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1339	0.0000	0.1339	0.0730	0.0000	0.0730	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0587	0.4945	0.3830	1.3700e-003		0.0197	0.0197		0.0182	0.0182	0.0000	120.6624	120.6624	0.0390	0.0000	121.4819
Total	**0.0587**	**0.4945**	**0.3830**	**1.3700e-003**	**0.1339**	**0.0197**	**0.1536**	**0.0730**	**0.0182**	**0.0912**	**0.0000**	**120.6624**	**120.6624**	**0.0390**	**0.0000**	**121.4819**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0604	0.1056	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4506	36.4506	2.6000e-004	0.0000	36.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	9.7000e-004	9.3300e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5249	2.5249	1.0000e-004	0.0000	2.5270
Total	**9.2800e-003**	**0.0614**	**0.1149**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9754**	**38.9754**	**3.6000e-004**	**0.0000**	**38.9830**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0464	0.3315	0.4244	1.3300e-003		0.0132	0.0132		0.0126	0.0126	0.0000	125.9162	125.9162	0.0164	0.0000	126.2602
Total	**0.0464**	**0.3315**	**0.4244**	**1.3300e-003**		**0.0132**	**0.0132**		**0.0126**	**0.0126**	**0.0000**	**125.9162**	**125.9162**	**0.0164**	**0.0000**	**126.2602**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6400e-003	0.0146	0.0373	9.0000e-005	2.5600e-003	3.4000e-004	2.9100e-003	7.4000e-004	3.2000e-004	1.0500e-003	0.0000	7.9709	7.9709	6.0000e-005	0.0000	7.9721
Worker	1.6500e-003	2.3200e-003	0.0225	1.1000e-004	8.9900e-003	7.0000e-005	9.0500e-003	2.3900e-003	6.0000e-005	2.4500e-003	0.0000	6.2658	6.2658	2.4000e-004	0.0000	6.2709
Total	**4.2900e-003**	**0.0169**	**0.0597**	**2.0000e-004**	**0.0116**	**4.1000e-004**	**0.0120**	**3.1300e-003**	**3.8000e-004**	**3.5000e-003**	**0.0000**	**14.2367**	**14.2367**	**3.0000e-004**	**0.0000**	**14.2430**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0464	0.3315	0.4244	1.3300e-003		0.0132	0.0132		0.0126	0.0126	0.0000	125.9161	125.9161	0.0164	0.0000	126.2600

Total	**0.0464**	**0.3315**	**0.4244**	**1.3300e-003**		**0.0132**	**0.0132**		**0.0126**	**0.0126**	**0.0000**	**125.9161**	**125.9161**	**0.0164**	**0.0000**	**126.2600**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6400e-003	0.0146	0.0373	9.0000e-005	2.5600e-003	3.4000e-004	2.9100e-003	7.4000e-004	3.2000e-004	1.0500e-003	0.0000	7.9709	7.9709	6.0000e-005	0.0000	7.9721
Worker	1.6500e-003	2.3200e-003	0.0225	1.1000e-004	8.9900e-003	7.0000e-005	9.0500e-003	2.3900e-003	6.0000e-005	2.4500e-003	0.0000	6.2658	6.2658	2.4000e-004	0.0000	6.2709
Total	**4.2900e-003**	**0.0169**	**0.0597**	**2.0000e-004**	**0.0116**	**4.1000e-004**	**0.0120**	**3.1300e-003**	**3.8000e-004**	**3.5000e-003**	**0.0000**	**14.2367**	**14.2367**	**3.0000e-004**	**0.0000**	**14.2430**

3.6 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0135	0.1327	0.1554	3.3000e-004		5.6600e-003	5.6600e-003		5.2100e-003	5.2100e-003	0.0000	29.1068	29.1068	9.4100e-003	0.0000	29.3045
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0135**	**0.1327**	**0.1554**	**3.3000e-004**		**5.6600e-003**	**5.6600e-003**		**5.2100e-003**	**5.2100e-003**	**0.0000**	**29.1068**	**29.1068**	**9.4100e-003**	**0.0000**	**29.3045**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	4.0000e-004	3.9100e-003	2.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.0918	1.0918	4.0000e-005	0.0000	1.0927
Total	**2.9000e-004**	**4.0000e-004**	**3.9100e-003**	**2.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.0918**	**1.0918**	**4.0000e-005**	**0.0000**	**1.0927**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0135	0.1327	0.1554	3.3000e-004		5.6600e-003	5.6600e-003		5.2100e-003	5.2100e-003	0.0000	29.1068	29.1068	9.4100e-003	0.0000	29.3044
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0135**	**0.1327**	**0.1554**	**3.3000e-004**		**5.6600e-003**	**5.6600e-003**		**5.2100e-003**	**5.2100e-003**	**0.0000**	**29.1068**	**29.1068**	**9.4100e-003**	**0.0000**	**29.3044**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	4.0000e-004	3.9100e-003	2.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.0918	1.0918	4.0000e-005	0.0000	1.0927
Total	**2.9000e-004**	**4.0000e-004**	**3.9100e-003**	**2.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.0918**	**1.0918**	**4.0000e-005**	**0.0000**	**1.0927**

3.7 Architectural Coatings - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3666					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9300e-003	0.0202	0.0468	9.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	7.5288	7.5288	3.2000e-004	0.0000	7.5355
Total	**0.3706**	**0.0202**	**0.0468**	**9.0000e-005**		**9.5000e-004**	**9.5000e-004**		**9.5000e-004**	**9.5000e-004**	**0.0000**	**7.5288**	**7.5288**	**3.2000e-004**	**0.0000**	**7.5355**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.6000e-004	1.5600e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4367	0.4367	2.0000e-005	0.0000	0.4371
Total	**1.1000e-004**	**1.6000e-004**	**1.5600e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4367**	**0.4367**	**2.0000e-005**	**0.0000**	**0.4371**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3666					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9300e-003	0.0202	0.0468	9.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	7.5288	7.5288	3.2000e-004	0.0000	7.5355
Total	**0.3706**	**0.0202**	**0.0468**	**9.0000e-005**		**9.5000e-004**	**9.5000e-004**		**9.5000e-004**	**9.5000e-004**	**0.0000**	**7.5288**	**7.5288**	**3.2000e-004**	**0.0000**	**7.5355**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.6000e-004	1.5600e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4367	0.4367	2.0000e-005	0.0000	0.4371
Total	**1.1000e-004**	**1.6000e-004**	**1.5600e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4367**	**0.4367**	**2.0000e-005**	**0.0000**	**0.4371**

3.8 Landscaping - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	5.3900e-003	0.0545	0.0910	1.3000e-004		2.2100e-003	2.2100e-003		2.0300e-003	2.0300e-003	0.0000	11.1868	11.1868	3.6200e-003	0.0000	11.2628
Total	**5.3900e-003**	**0.0545**	**0.0910**	**1.3000e-004**		**2.2100e-003**	**2.2100e-003**		**2.0300e-003**	**2.0300e-003**	**0.0000**	**11.1868**	**11.1868**	**3.6200e-003**	**0.0000**	**11.2628**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.9000e-004	3.7400e-003	2.0000e-005	2.7900e-003	1.0000e-005	2.8000e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	1.0443	1.0443	4.0000e-005	0.0000	1.0452
Total	**2.7000e-004**	**3.9000e-004**	**3.7400e-003**	**2.0000e-005**	**2.7900e-003**	**1.0000e-005**	**2.8000e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**1.0443**	**1.0443**	**4.0000e-005**	**0.0000**	**1.0452**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3900e-003	0.0545	0.0910	1.3000e-004		2.2100e-003	2.2100e-003		2.0300e-003	2.0300e-003	0.0000	11.1868	11.1868	3.6200e-003	0.0000	11.2628
Total	**5.3900e-003**	**0.0545**	**0.0910**	**1.3000e-004**		**2.2100e-003**	**2.2100e-003**		**2.0300e-003**	**2.0300e-003**	**0.0000**	**11.1868**	**11.1868**	**3.6200e-003**	**0.0000**	**11.2628**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.9000e-004	3.7400e-003	2.0000e-005	2.7900e-003	1.0000e-005	2.8000e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	1.0443	1.0443	4.0000e-005	0.0000	1.0452
Total	**2.7000e-004**	**3.9000e-004**	**3.7400e-003**	**2.0000e-005**	**2.7900e-003**	**1.0000e-005**	**2.8000e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**1.0443**	**1.0443**	**4.0000e-005**	**0.0000**	**1.0452**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.7000e-004	2.2200e-003	0.0103	3.0000e-005	2.0300e-003	5.0000e-005	2.0800e-003	5.5000e-004	5.0000e-005	5.9000e-004	0.0000	2.1250	2.1250	6.0000e-005	0.0000	2.1262
Unmitigated	9.7000e-004	2.2200e-003	0.0103	3.0000e-005	2.0300e-003	5.0000e-005	2.0800e-003	5.5000e-004	5.0000e-005	5.9000e-004	0.0000	2.1250	2.1250	6.0000e-005	0.0000	2.1262

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.54	2.54	2.54	5,431	5,431
Total	2.54	2.54	2.54	5,431	5,431

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3113	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.3113	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0367					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2746					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.3113**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	0.2746					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Architectural Coating	0.0367					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3113**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.9411	9.0000e-005	2.0000e-005	1.9485

Unmitigated	1.9411	9.0000e-005	2.0000e-005	1.9485

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.90637	1.9411	9.0000e-005	2.0000e-005	1.9485
Total		**1.9411**	**9.0000e-005**	**2.0000e-005**	**1.9485**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.90637	1.9411	9.0000e-005	2.0000e-005	1.9485
Total		**1.9411**	**9.0000e-005**	**2.0000e-005**	**1.9485**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0284	1.6800e-003	0.0000	0.0637
Unmitigated	0.0284	1.6800e-003	0.0000	0.0637

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.14	0.0284	1.6800e-003	0.0000	0.0637
Total		**0.0284**	**1.6800e-003**	**0.0000**	**0.0637**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.14	0.0284	1.6800e-003	0.0000	0.0637

Total		**0.0284**	**1.6800e-003**	**0.0000**	**0.0637**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.60	Acre	1.60	70,310.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Converted cy are footages to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	200.00	66.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	PhaseEndDate	7/3/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	3/2/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	1/31/2029	11/30/2028
tblConstructionPhase	PhaseEndDate	7/3/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	1/1/2029	11/30/2028
tblConstructionPhase	PhaseStartDate	6/1/2029	5/1/2029
tblConstructionPhase	PhaseStartDate	12/1/2028	3/1/2029
tblConstructionPhase	PhaseStartDate	12/1/2028	10/1/2028
tblConstructionPhase	PhaseStartDate	6/1/2029	5/1/2029
tblConstructionPhase	PhaseStartDate	11/1/2028	10/1/2028
tblGrading	AcresOfGrading	44.00	1.60
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	69,696.00	70,310.00
tblOffRoadEquipment	HorsePower	78.00	150.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00

tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030

tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	7.2150	61.5406	61.7626	0.1657	12.7257	2.5736	15.2993	6.4989	2.3677	8.8667	0.0000	15,837.9146	15,837.9146	4.4549	0.0000	15,931.4679
2029	34.9640	23.8773	32.5492	0.0854	0.5611	0.9888	1.5499	0.1505	0.9293	1.0798	0.0000	8,368.5479	8,368.5479	1.4956	0.0000	8,399.9562
Total	**42.1790**	**85.4179**	**94.3118**	**0.2511**	**13.2869**	**3.5624**	**16.8492**	**6.6494**	**3.2970**	**9.9464**	**0.0000**	**24,206.4626**	**24,206.4626**	**5.9506**	**0.0000**	**24,331.4241**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	7.2150	61.5406	61.7626	0.1657	12.7257	2.5736	15.2993	6.4989	2.3677	8.8667	0.0000	15,837.9146	15,837.9146	4.4549	0.0000	15,931.4679
2029	34.9640	23.8773	32.5492	0.0854	0.5611	0.9888	1.5499	0.1505	0.9293	1.0798	0.0000	8,368.5479	8,368.5479	1.4956	0.0000	8,399.9562
Total	**42.1790**	**85.4179**	**94.3118**	**0.2511**	**13.2869**	**3.5624**	**16.8492**	**6.6494**	**3.2970**	**9.9464**	**0.0000**	**24,206.4625**	**24,206.4625**	**5.9506**	**0.0000**	**24,331.4241**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7055	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.5000e-004	3.5000e-004	0.0000		3.7000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	5.4900e-003	0.0116	0.0506	1.8000e-004	0.0116	2.8000e-004	0.0119	3.1100e-003	2.6000e-004	3.3600e-003		13.4982	13.4982	3.4000e-004		13.5053
Total	**1.7110**	**0.0116**	**0.0508**	**1.8000e-004**	**0.0116**	**2.8000e-004**	**0.0119**	**3.1100e-003**	**2.6000e-004**	**3.3600e-003**		**13.4985**	**13.4985**	**3.4000e-004**	**0.0000**	**13.5057**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7055	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.5000e-004	3.5000e-004	0.0000		3.7000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	5.4900e-003	0.0116	0.0506	1.8000e-004	0.0116	2.8000e-004	0.0119	3.1100e-003	2.6000e-004	3.3600e-003		13.4982	13.4982	3.4000e-004		13.5053
Total	**1.7110**	**0.0116**	**0.0508**	**1.8000e-004**	**0.0116**	**2.8000e-004**	**0.0119**	**3.1100e-003**	**2.6000e-004**	**3.3600e-003**		**13.4985**	**13.4985**	**3.4000e-004**	**0.0000**	**13.5057**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2028	10/31/2028	5	43	
2	Excavation	Site Preparation	10/1/2028	11/30/2028	5	44	
3	Grading	Grading	10/1/2028	11/30/2028	5	44	
4	Building Construction	Building Construction	3/1/2029	5/31/2029	5	66	
5	Paving	Paving	5/1/2029	5/31/2029	5	23	
6	Architectural Coatings	Architectural Coating	5/1/2029	5/31/2029	5	23	
7	Landscaping	Trenching	6/1/2029	8/31/2029	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.6

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 105,465; Non-Residential Outdoor: 35,155 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20

Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Architectural Coatings	Air Compressors	1	8.00	150	0.48
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Excavation	Graders	1	8.00	174	0.41
Excavation	Rubber Tired Dozers	1	7.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	30.00	12.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	6.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743		5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**		**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743	0.0000	5,713.3832	5,713.3832	1.8478		5,752.1875

Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**	**0.0000**	**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

3.3 Excavation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.2443	11.3855	13.2617	0.0200		0.5340	0.5340		0.4913	0.4913		1,939.7929	1,939.7929	0.6274		1,952.9677
Total	**1.2443**	**11.3855**	**13.2617**	**0.0200**	**5.7996**	**0.5340**	**6.3336**	**2.9537**	**0.4913**	**3.4450**		**1,939.7929**	**1,939.7929**	**0.6274**		**1,952.9677**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7100e-003	6.4800e-003	0.0780	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		22.7397	22.7397	8.4000e-004		22.7572
Total	**5.7100e-003**	**6.4800e-003**	**0.0780**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**		**22.7397**	**22.7397**	**8.4000e-004**		**22.7572**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.2443	11.3855	13.2617	0.0200		0.5340	0.5340		0.4913	0.4913	0.0000	1,939.7929	1,939.7929	0.6274		1,952.9677
Total	**1.2443**	**11.3855**	**13.2617**	**0.0200**	**5.7996**	**0.5340**	**6.3336**	**2.9537**	**0.4913**	**3.4450**	**0.0000**	**1,939.7929**	**1,939.7929**	**0.6274**		**1,952.9677**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	5.7100e-003	6.4800e-003	0.0780	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		22.7397	22.7397	8.4000e-004		22.7572
Total	**5.7100e-003**	**6.4800e-003**	**0.0780**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**		**22.7397**	**22.7397**	**8.4000e-004**		**22.7572**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0843	0.0000	6.0843	3.3180	0.0000	3.3180			0.0000			0.0000
Off-Road	2.6671	22.4755	17.4070	0.0625		0.8972	0.8972		0.8254	0.8254		6,045.8025	6,045.8025	1.9553		6,086.8645
Total	**2.6671**	**22.4755**	**17.4070**	**0.0625**	**6.0843**	**0.8972**	**6.9814**	**3.3180**	**0.8254**	**4.1434**		**6,045.8025**	**6,045.8025**	**1.9553**		**6,086.8645**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3726	2.6481	3.6808	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1602	1,828.1602	0.0130		1,828.4327
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434
Total	**0.4069**	**2.6870**	**4.1486**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,964.5983**	**1,964.5983**	**0.0180**		**1,964.9761**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0843	0.0000	6.0843	3.3180	0.0000	3.3180			0.0000			0.0000
Off-Road	2.6671	22.4755	17.4070	0.0625		0.8972	0.8972		0.8254	0.8254	0.0000	6,045.8025	6,045.8025	1.9553		6,086.8645
Total	**2.6671**	**22.4755**	**17.4070**	**0.0625**	**6.0843**	**0.8972**	**6.9814**	**3.3180**	**0.8254**	**4.1434**	**0.0000**	**6,045.8025**	**6,045.8025**	**1.9553**		**6,086.8645**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3726	2.6481	3.6808	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1602	1,828.1602	0.0130		1,828.4327
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434
Total	**0.4069**	**2.6870**	**4.1486**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,964.5983**	**1,964.5983**	**0.0180**		**1,964.9761**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810		4,206.0265	4,206.0265	0.5471		4,217.5155

Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**		**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0744	0.4289	0.8247	2.8500e-003	0.0802	0.0104	0.0905	0.0230	9.5200e-003	0.0325		267.1203	267.1203	1.9000e-003		267.1601
Worker	0.0548	0.0621	0.7513	3.5000e-003	0.2829	2.0700e-003	0.2850	0.0750	1.9200e-003	0.0770		225.7424	225.7424	8.1300e-003		225.9131
Total	**0.1292**	**0.4910**	**1.5760**	**6.3500e-003**	**0.3631**	**0.0124**	**0.3755**	**0.0980**	**0.0114**	**0.1094**		**492.8626**	**492.8626**	**0.0100**		**493.0733**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810	0.0000	4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**	**0.0000**	**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0744	0.4289	0.8247	2.8500e-003	0.0802	0.0104	0.0905	0.0230	9.5200e-003	0.0325		267.1203	267.1203	1.9000e-003		267.1601
Worker	0.0548	0.0621	0.7513	3.5000e-003	0.2829	2.0700e-003	0.2850	0.0750	1.9200e-003	0.0770		225.7424	225.7424	8.1300e-003		225.9131
Total	**0.1292**	**0.4910**	**1.5760**	**6.3500e-003**	**0.3631**	**0.0124**	**0.3755**	**0.0980**	**0.0114**	**0.1094**		**492.8626**	**492.8626**	**0.0100**		**493.0733**

3.6 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1701	11.5398	13.5167	0.0288		0.4923	0.4923		0.4529	0.4529		2,789.9775	2,789.9775	0.9023		2,808.9266
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1701**	**11.5398**	**13.5167**	**0.0288**		**0.4923**	**0.4923**		**0.4529**	**0.4529**		**2,789.9775**	**2,789.9775**	**0.9023**		**2,808.9266**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0274	0.0311	0.3757	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.8712	112.8712	4.0700e-003		112.9566
Total	**0.0274**	**0.0311**	**0.3757**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.8712**	**112.8712**	**4.0700e-003**		**112.9566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1701	11.5398	13.5167	0.0288		0.4923	0.4923		0.4529	0.4529	0.0000	2,789.9775	2,789.9775	0.9023		2,808.9266
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1701**	**11.5398**	**13.5167**	**0.0288**		**0.4923**	**0.4923**		**0.4529**	**0.4529**	**0.0000**	**2,789.9775**	**2,789.9775**	**0.9023**		**2,808.9266**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0274	0.0311	0.3757	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.8712	112.8712	4.0700e-003		112.9566
Total	**0.0274**	**0.0311**	**0.3757**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.8712**	**112.8712**	**4.0700e-003**		**112.9566**

3.7 Architectural Coatings - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	31.8802					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3416	1.7562	4.0699	7.6200e-003		0.0825	0.0825		0.0825	0.0825		721.6617	721.6617	0.0305		722.3017
Total	**32.2218**	**1.7562**	**4.0699**	**7.6200e-003**		**0.0825**	**0.0825**		**0.0825**	**0.0825**		**721.6617**	**721.6617**	**0.0305**		**722.3017**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0110	0.0124	0.1503	7.0000e-004	0.0566	4.1000e-004	0.0570	0.0150	3.8000e-004	0.0154		45.1485	45.1485	1.6300e-003		45.1826
Total	**0.0110**	**0.0124**	**0.1503**	**7.0000e-004**	**0.0566**	**4.1000e-004**	**0.0570**	**0.0150**	**3.8000e-004**	**0.0154**		**45.1485**	**45.1485**	**1.6300e-003**		**45.1826**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Archit. Coating	31.8802					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3416	1.7562	4.0699	7.6200e-003		0.0825	0.0825		0.0825	0.0825	0.0000	721.6617	721.6617	0.0305		722.3017
Total	**32.2218**	**1.7562**	**4.0699**	**7.6200e-003**		**0.0825**	**0.0825**		**0.0825**	**0.0825**	**0.0000**	**721.6617**	**721.6617**	**0.0305**		**722.3017**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0110	0.0124	0.1503	7.0000e-004	0.0566	4.1000e-004	0.0570	0.0150	3.8000e-004	0.0154		45.1485	45.1485	1.6300e-003		45.1826
Total	**0.0110**	**0.0124**	**0.1503**	**7.0000e-004**	**0.0566**	**4.1000e-004**	**0.0570**	**0.0150**	**3.8000e-004**	**0.0154**		**45.1485**	**45.1485**	**1.6300e-003**		**45.1826**

3.8 Landscaping - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616		373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**		**373.6773**	**373.6773**	**0.1209**		**376.2153**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0881	3.4000e-004	0.0885	0.0226	3.2000e-004	0.0229		37.6237	37.6237	1.3600e-003		37.6522
Total	**9.1300e-003**	**0.0104**	**0.1252**	**5.8000e-004**	**0.0881**	**3.4000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**37.6237**	**37.6237**	**1.3600e-003**		**37.6522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616	0.0000	373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**	**0.0000**	**373.6773**	**373.6773**	**0.1209**		**376.2153**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0881	3.4000e-004	0.0885	0.0226	3.2000e-004	0.0229		37.6237	37.6237	1.3600e-003		37.6522
Total	**9.1300e-003**	**0.0104**	**0.1252**	**5.8000e-004**	**0.0881**	**3.4000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**37.6237**	**37.6237**	**1.3600e-003**		**37.6522**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.4900e-003	0.0116	0.0506	1.8000e-004	0.0116	2.8000e-004	0.0119	3.1100e-003	2.6000e-004	3.3600e-003		13.4982	13.4982	3.4000e-004		13.5053
Unmitigated	5.4900e-003	0.0116	0.0506	1.8000e-004	0.0116	2.8000e-004	0.0119	3.1100e-003	2.6000e-004	3.3600e-003		13.4982	13.4982	3.4000e-004		13.5053

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.54	2.54	2.54	5,431	5,431
Total	2.54	2.54	2.54	5,431	5,431

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7055	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.5000e-004	3.5000e-004	0.0000		3.7000e-004
Unmitigated	1.7055	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.5000e-004	3.5000e-004	0.0000		3.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Consumer Products	1.5046					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.5000e-004	3.5000e-004	0.0000		3.7000e-004
Architectural Coating	0.2009					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7055**	**0.0000**	**1.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.5000e-004**	**3.5000e-004**	**0.0000**		**3.7000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	1.5046					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.5000e-004	3.5000e-004	0.0000		3.7000e-004
Architectural Coating	0.2009					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7055**	**0.0000**	**1.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.5000e-004**	**3.5000e-004**	**0.0000**		**3.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.72	Acre	0.72	31,240.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Con. orted sq. ore footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	44.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	2.00	22.00
tblConstructionPhase	NumDays	1.00	22.00
tblConstructionPhase	PhaseEndDate	8/1/2028	6/30/2028
tblConstructionPhase	PhaseEndDate	11/30/2028	3/31/2029
tblConstructionPhase	PhaseStartDate	7/1/2028	6/1/2028
tblConstructionPhase	PhaseStartDate	9/1/2028	1/1/2029
tblGrading	AcresOfGrading	22.00	0.72
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	31,363.20	31,240.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.1143	0.9133	1.0459	2.9900e-003	0.0902	0.0371	0.1272	0.0418	0.0345	0.0763	0.0000	265.0542	265.0542	0.0543	0.0000	266.1936
2029	5.5800e-003	0.0541	0.0933	1.4000e-004	2.7500e-003	2.1900e-003	4.9400e-003	7.1000e-004	2.0100e-003	2.7200e-003	0.0000	12.0458	12.0458	3.6000e-003	0.0000	12.1215
Total	**0.1198**	**0.9673**	**1.1392**	**3.1300e-003**	**0.0929**	**0.0393**	**0.1322**	**0.0425**	**0.0365**	**0.0790**	**0.0000**	**277.1000**	**277.1000**	**0.0579**	**0.0000**	**278.3151**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	tons/yr										MT/yr					
2028	0.1143	0.9133	1.0459	2.9900e-003	0.0902	0.0371	0.1272	0.0418	0.0345	0.0763	0.0000	265.0539	265.0539	0.0543	0.0000	266.1934
2029	5.5800e-003	0.0541	0.0933	1.4000e-004	2.7500e-003	2.1900e-003	4.9400e-003	7.1000e-004	2.0100e-003	2.7200e-003	0.0000	12.0458	12.0458	3.6000e-003	0.0000	12.1214
Total	**0.1198**	**0.9673**	**1.1392**	**3.1300e-003**	**0.0929**	**0.0393**	**0.1322**	**0.0425**	**0.0365**	**0.0790**	**0.0000**	**277.0997**	**277.0997**	**0.0579**	**0.0000**	**278.3148**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1383	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.4000e-004	1.0000e-003	4.6400e-003	1.0000e-005	9.2000e-004	2.0000e-005	9.4000e-004	2.5000e-004	2.0000e-005	2.7000e-004	0.0000	0.9563	0.9563	3.0000e-005	0.0000	0.9568
Waste						0.0000	0.0000		0.0000	0.0000	0.0122	0.0000	0.0122	7.2000e-004	0.0000	0.0273
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.8735	0.8735	4.0000e-005	1.0000e-005	0.8768
Total	**0.1387**	**1.0000e-003**	**4.6500e-003**	**1.0000e-005**	**9.2000e-004**	**2.0000e-005**	**9.4000e-004**	**2.5000e-004**	**2.0000e-005**	**2.7000e-004**	**0.0122**	**1.8297**	**1.8419**	**7.9000e-004**	**1.0000e-005**	**1.8609**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1383	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.4000e-004	1.0000e-003	4.6400e-003	1.0000e-005	9.2000e-004	2.0000e-005	9.4000e-004	2.5000e-004	2.0000e-005	2.7000e-004	0.0000	0.9563	0.9563	3.0000e-005	0.0000	0.9568
Waste						0.0000	0.0000		0.0000	0.0000	0.0122	0.0000	0.0122	7.2000e-004	0.0000	0.0273
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.8735	0.8735	4.0000e-005	1.0000e-005	0.8768
Total	**0.1387**	**1.0000e-003**	**4.6500e-003**	**1.0000e-005**	**9.2000e-004**	**2.0000e-005**	**9.4000e-004**	**2.5000e-004**	**2.0000e-005**	**2.7000e-004**	**0.0122**	**1.8297**	**1.8419**	**7.9000e-004**	**1.0000e-005**	**1.8609**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2028	5/31/2028	5	23	
2	Excavation	Site Preparation	6/1/2028	6/30/2028	5	22	
3	Grading	Grading	6/1/2028	6/30/2028	5	22	
4	Building Construction	Building Construction	7/1/2028	8/31/2028	5	44	
5	Landscaping	Trenching	1/1/2029	3/31/2029	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.72

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	13.00	5.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0328	0.2868	0.3030	6.8000e-004		0.0122	0.0122		0.0112	0.0112	0.0000	59.6056	59.6056	0.0193	0.0000	60.0104
Total	**0.0328**	**0.2868**	**0.3030**	**6.8000e-004**	**0.0000**	**0.0122**	**0.0122**	**0.0000**	**0.0112**	**0.0112**	**0.0000**	**59.6056**	**59.6056**	**0.0193**	**0.0000**	**60.0104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	5.6000e-004	5.4200e-003	2.0000e-005	2.0900e-003	2.0000e-005	2.1000e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.4665	1.4665	6.0000e-005	0.0000	1.4677
Total	**4.0000e-004**	**5.6000e-004**	**5.4200e-003**	**2.0000e-005**	**2.0900e-003**	**2.0000e-005**	**2.1000e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.4665**	**1.4665**	**6.0000e-005**	**0.0000**	**1.4677**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0328	0.2868	0.3030	6.8000e-004		0.0122	0.0122		0.0112	0.0112	0.0000	59.6055	59.6055	0.0193	0.0000	60.0103
Total	**0.0328**	**0.2868**	**0.3030**	**6.8000e-004**	**0.0000**	**0.0122**	**0.0122**	**0.0000**	**0.0112**	**0.0112**	**0.0000**	**59.6055**	**59.6055**	**0.0193**	**0.0000**	**60.0103**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	5.6000e-004	5.4200e-003	2.0000e-005	2.0900e-003	2.0000e-005	2.1000e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.4665	1.4665	6.0000e-005	0.0000	1.4677
Total	**4.0000e-004**	**5.6000e-004**	**5.4200e-003**	**2.0000e-005**	**2.0900e-003**	**2.0000e-005**	**2.1000e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.4665**	**1.4665**	**6.0000e-005**	**0.0000**	**1.4677**

3.3 Excavation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8300e-003	0.0000	5.8300e-003	6.3000e-004	0.0000	6.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3400e-003	0.0669	0.0946	1.3000e-004		3.2700e-003	3.2700e-003		3.0000e-003	3.0000e-003	0.0000	11.8317	11.8317	3.8300e-003	0.0000	11.9121

Total	**7.3400e-003**	**0.0669**	**0.0946**	**1.3000e-004**	**5.8300e-003**	**3.2700e-003**	**9.1000e-003**	**6.3000e-004**	**3.0000e-003**	**3.6300e-003**	**0.0000**	**11.8317**	**11.8317**	**3.8300e-003**	**0.0000**	**11.9121**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	8.0000e-005	7.8000e-004	0.0000	3.0000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2104	0.2104	1.0000e-005	0.0000	0.2106
Total	**6.0000e-005**	**8.0000e-005**	**7.8000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2104**	**0.2104**	**1.0000e-005**	**0.0000**	**0.2106**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8300e-003	0.0000	5.8300e-003	6.3000e-004	0.0000	6.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3400e-003	0.0669	0.0946	1.3000e-004		3.2700e-003	3.2700e-003		3.0000e-003	3.0000e-003	0.0000	11.8317	11.8317	3.8300e-003	0.0000	11.9120
Total	**7.3400e-003**	**0.0669**	**0.0946**	**1.3000e-004**	**5.8300e-003**	**3.2700e-003**	**9.1000e-003**	**6.3000e-004**	**3.0000e-003**	**3.6300e-003**	**0.0000**	**11.8317**	**11.8317**	**3.8300e-003**	**0.0000**	**11.9120**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	8.0000e-005	7.8000e-004	0.0000	3.0000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2104	0.2104	1.0000e-005	0.0000	0.2106
Total	**6.0000e-005**	**8.0000e-005**	**7.8000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2104**	**0.2104**	**1.0000e-005**	**0.0000**	**0.2106**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0671	0.0000	0.0671	0.0365	0.0000	0.0365	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0326	0.2722	0.2316	7.6000e-004		0.0109	0.0109		0.0101	0.0101	0.0000	66.2455	66.2455	0.0198	0.0000	66.6607
Total	**0.0326**	**0.2722**	**0.2316**	**7.6000e-004**	**0.0671**	**0.0109**	**0.0780**	**0.0365**	**0.0101**	**0.0466**	**0.0000**	**66.2455**	**66.2455**	**0.0198**	**0.0000**	**66.6607**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0604	0.1056	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4506	36.4506	2.6000e-004	0.0000	36.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	3.4000e-004	4.8000e-004	4.6700e-003	2.0000e-005	1.8000e-003	1.0000e-005	1.8100e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.2624	1.2624	5.0000e-005	0.0000	1.2635
Total	**8.9300e-003**	**0.0609**	**0.1103**	**4.5000e-004**	**0.0115**	**1.7900e-003**	**0.0133**	**3.1400e-003**	**1.6400e-003**	**4.7900e-003**	**0.0000**	**37.7130**	**37.7130**	**3.1000e-004**	**0.0000**	**37.7195**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0671	0.0000	0.0671	0.0365	0.0000	0.0365	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0326	0.2722	0.2316	7.6000e-004		0.0109	0.0109		0.0101	0.0101	0.0000	66.2454	66.2454	0.0198	0.0000	66.6606
Total	**0.0326**	**0.2722**	**0.2316**	**7.6000e-004**	**0.0671**	**0.0109**	**0.0780**	**0.0365**	**0.0101**	**0.0466**	**0.0000**	**66.2454**	**66.2454**	**0.0198**	**0.0000**	**66.6606**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0604	0.1056	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4506	36.4506	2.6000e-004	0.0000	36.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	4.8000e-004	4.6700e-003	2.0000e-005	1.8000e-003	1.0000e-005	1.8100e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.2624	1.2624	5.0000e-005	0.0000	1.2635
Total	**8.9300e-003**	**0.0609**	**0.1103**	**4.5000e-004**	**0.0115**	**1.7900e-003**	**0.0133**	**3.1400e-003**	**1.6400e-003**	**4.7900e-003**	**0.0000**	**37.7130**	**37.7130**	**3.1000e-004**	**0.0000**	**37.7195**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0309	0.2210	0.2829	8.8000e-004		8.8000e-003	8.8000e-003		8.3800e-003	8.3800e-003	0.0000	83.9442	83.9442	0.0109	0.0000	84.1735
Total	**0.0309**	**0.2210**	**0.2829**	**8.8000e-004**		**8.8000e-003**	**8.8000e-003**		**8.3800e-003**	**8.3800e-003**	**0.0000**	**83.9442**	**83.9442**	**0.0109**	**0.0000**	**84.1735**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.5000e-004	4.0700e-003	0.0105	3.0000e-005	7.1000e-004	1.0000e-004	8.1000e-004	2.0000e-004	9.0000e-005	2.9000e-004	0.0000	2.2139	2.2139	2.0000e-005	0.0000	2.2142
Worker	5.0000e-004	7.0000e-004	6.7400e-003	3.0000e-005	2.6000e-003	2.0000e-005	2.6200e-003	6.9000e-004	2.0000e-005	7.1000e-004	0.0000	1.8235	1.8235	7.0000e-005	0.0000	1.8250
Total	**1.2500e-003**	**4.7700e-003**	**0.0173**	**6.0000e-005**	**3.3100e-003**	**1.2000e-004**	**3.4300e-003**	**8.9000e-004**	**1.1000e-004**	**1.0000e-003**	**0.0000**	**4.0374**	**4.0374**	**9.0000e-005**	**0.0000**	**4.0392**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0309	0.2210	0.2829	8.8000e-004		8.8000e-003	8.8000e-003		8.3800e-003	8.3800e-003	0.0000	83.9441	83.9441	0.0109	0.0000	84.1734

Total	**0.0309**	**0.2210**	**0.2829**	**8.8000e-004**		**8.8000e-003**	**8.8000e-003**		**8.3800e-003**	**8.3800e-003**	**0.0000**	**83.9441**	**83.9441**	**0.0109**	**0.0000**	**84.1734**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.5000e-004	4.0700e-003	0.0105	3.0000e-005	7.1000e-004	1.0000e-004	8.1000e-004	2.0000e-004	9.0000e-005	2.9000e-004	0.0000	2.2139	2.2139	2.0000e-005	0.0000	2.2142
Worker	5.0000e-004	7.0000e-004	6.7400e-003	3.0000e-005	2.6000e-003	2.0000e-005	2.6200e-003	6.9000e-004	2.0000e-005	7.1000e-004	0.0000	1.8235	1.8235	7.0000e-005	0.0000	1.8250
Total	**1.2500e-003**	**4.7700e-003**	**0.0173**	**6.0000e-005**	**3.3100e-003**	**1.2000e-004**	**3.4300e-003**	**8.9000e-004**	**1.1000e-004**	**1.0000e-003**	**0.0000**	**4.0374**	**4.0374**	**9.0000e-005**	**0.0000**	**4.0392**

3.6 Landscaping - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3100e-003	0.0537	0.0897	1.3000e-004		2.1800e-003	2.1800e-003		2.0000e-003	2.0000e-003	0.0000	11.0173	11.0173	3.5600e-003	0.0000	11.0922
Total	**5.3100e-003**	**0.0537**	**0.0897**	**1.3000e-004**		**2.1800e-003**	**2.1800e-003**		**2.0000e-003**	**2.0000e-003**	**0.0000**	**11.0173**	**11.0173**	**3.5600e-003**	**0.0000**	**11.0922**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.8000e-004	3.6800e-003	2.0000e-005	2.7500e-003	1.0000e-005	2.7600e-003	7.1000e-004	1.0000e-005	7.2000e-004	0.0000	1.0285	1.0285	4.0000e-005	0.0000	1.0293
Total	**2.7000e-004**	**3.8000e-004**	**3.6800e-003**	**2.0000e-005**	**2.7500e-003**	**1.0000e-005**	**2.7600e-003**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**1.0285**	**1.0285**	**4.0000e-005**	**0.0000**	**1.0293**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3100e-003	0.0537	0.0897	1.3000e-004		2.1800e-003	2.1800e-003		2.0000e-003	2.0000e-003	0.0000	11.0173	11.0173	3.5600e-003	0.0000	11.0921
Total	**5.3100e-003**	**0.0537**	**0.0897**	**1.3000e-004**		**2.1800e-003**	**2.1800e-003**		**2.0000e-003**	**2.0000e-003**	**0.0000**	**11.0173**	**11.0173**	**3.5600e-003**	**0.0000**	**11.0921**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.8000e-004	3.6800e-003	2.0000e-005	2.7500e-003	1.0000e-005	2.7600e-003	7.1000e-004	1.0000e-005	7.2000e-004	0.0000	1.0285	1.0285	4.0000e-005	0.0000	1.0293
Total	**2.7000e-004**	**3.8000e-004**	**3.6800e-003**	**2.0000e-005**	**2.7500e-003**	**1.0000e-005**	**2.7600e-003**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**1.0285**	**1.0285**	**4.0000e-005**	**0.0000**	**1.0293**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4000e-004	1.0000e-003	4.6400e-003	1.0000e-005	9.2000e-004	2.0000e-005	9.4000e-004	2.5000e-004	2.0000e-005	2.7000e-004	0.0000	0.9563	0.9563	3.0000e-005	0.0000	0.9568
Unmitigated	4.4000e-004	1.0000e-003	4.6400e-003	1.0000e-005	9.2000e-004	2.0000e-005	9.4000e-004	2.5000e-004	2.0000e-005	2.7000e-004	0.0000	0.9563	0.9563	3.0000e-005	0.0000	0.9568

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.14	1.14	1.14	2,444	2,444
Total	1.14	1.14	1.14	2,444	2,444

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1383	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Unmitigated	0.1383	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0163					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1220					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**0.1383**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0163					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1220					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**0.1383**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.8735	4.0000e-005	1.0000e-005	0.8768
Unmitigated	0.8735	4.0000e-005	1.0000e-005	0.8768

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.857867	0.8735	4.0000e-005	1.0000e-005	0.8768
Total		**0.8735**	**4.0000e-005**	**1.0000e-005**	**0.8768**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.857867	0.8735	4.0000e-005	1.0000e-005	0.8768
Total		**0.8735**	**4.0000e-005**	**1.0000e-005**	**0.8768**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0122	7.2000e-004	0.0000	0.0273

Unmitigated	0.0122	7.2000e-004	0.0000	0.0273

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.06	0.0122	7.2000e-004	0.0000	0.0273
Total		**0.0122**	**7.2000e-004**	**0.0000**	**0.0273**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.06	0.0122	7.2000e-004	0.0000	0.0273
Total		**0.0122**	**7.2000e-004**	**0.0000**	**0.0273**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.72	Acre	0.72	31,240.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Conv. ted sq. are footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	44.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	2.00	22.00
tblConstructionPhase	NumDays	1.00	22.00
tblConstructionPhase	PhaseEndDate	8/1/2028	6/30/2028
tblConstructionPhase	PhaseEndDate	11/30/2028	3/31/2029
tblConstructionPhase	PhaseStartDate	7/1/2028	6/1/2028
tblConstructionPhase	PhaseStartDate	9/1/2028	1/1/2029
tblGrading	AcresOfGrading	22.00	0.72
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	31,363.20	31,240.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	4.4142	36.1678	37.5632	0.1223	7.7428	1.4496	9.1924	3.6803	1.3411	5.0214	0.0000	11,639.6210	11,639.6210	2.3967	0.0000	11,689.9511
2029	0.1726	1.6620	2.8836	4.4400e-003	0.0881	0.0673	0.1554	0.0226	0.0619	0.0845	0.0000	411.3011	411.3011	0.1222	0.0000	413.8675
Total	**4.5868**	**37.8298**	**40.4468**	**0.1267**	**7.8309**	**1.5169**	**9.3478**	**3.7029**	**1.4030**	**5.1058**	**0.0000**	**12,050.9221**	**12,050.9221**	**2.5189**	**0.0000**	**12,103.8186**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	lb/day										lb/day					
2028	4.4142	36.1678	37.5632	0.1223	7.7428	1.4496	9.1924	3.6803	1.3411	5.0214	0.0000	11,639.6210	11,639.6210	2.3967	0.0000	11,689.9511
2029	0.1726	1.6620	2.8836	4.4400e-003	0.0881	0.0673	0.1554	0.0226	0.0619	0.0845	0.0000	411.3011	411.3011	0.1222	0.0000	413.8675
Total	**4.5868**	**37.8298**	**40.4468**	**0.1267**	**7.8309**	**1.5169**	**9.3478**	**3.7029**	**1.4030**	**5.1058**	**0.0000**	**12,050.9221**	**12,050.9221**	**2.5189**	**0.0000**	**12,103.8186**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.7578	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-004	1.6000e-004	0.0000		1.7000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.4700e-003	5.2000e-003	0.0228	8.0000e-005	5.2200e-003	1.2000e-004	5.3500e-003	1.4000e-003	1.1000e-004	1.5100e-003		6.0742	6.0742	1.5000e-004		6.0774
Total	**0.7603**	**5.2000e-003**	**0.0229**	**8.0000e-005**	**5.2200e-003**	**1.2000e-004**	**5.3500e-003**	**1.4000e-003**	**1.1000e-004**	**1.5100e-003**		**6.0744**	**6.0744**	**1.5000e-004**	**0.0000**	**6.0776**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Area	0.7578	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-004	1.6000e-004	0.0000		1.7000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.4700e-003	5.2000e-003	0.0228	8.0000e-005	5.2200e-003	1.2000e-004	5.3500e-003	1.4000e-003	1.1000e-004	1.5100e-003		6.0742	6.0742	1.5000e-004		6.0774
Total	**0.7603**	**5.2000e-003**	**0.0229**	**8.0000e-005**	**5.2200e-003**	**1.2000e-004**	**5.3500e-003**	**1.4000e-003**	**1.1000e-004**	**1.5100e-003**		**6.0744**	**6.0744**	**1.5000e-004**	**0.0000**	**6.0776**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2028	5/31/2028	5	23	
2	Excavation	Site Preparation	6/1/2028	6/30/2028	5	22	
3	Grading	Grading	6/1/2028	6/30/2028	5	22	
4	Building Construction	Building Construction	7/1/2028	8/31/2028	5	44	
5	Landscaping	Trenching	1/1/2029	3/31/2029	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.72

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40

Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	13.00	5.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743		5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**		**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000

Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743	0.0000	5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**	**0.0000**	**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

3.3 Excavation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6668	6.0815	8.6040	0.0123		0.2969	0.2969		0.2732	0.2732		1,185.6547	1,185.6547	0.3835		1,193.7075
Total	**0.6668**	**6.0815**	**8.6040**	**0.0123**	**0.5303**	**0.2969**	**0.8272**	**0.0573**	**0.2732**	**0.3304**		**1,185.6547**	**1,185.6547**	**0.3835**		**1,193.7075**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7100e-003	6.4800e-003	0.0780	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		22.7397	22.7397	8.4000e-004		22.7572
Total	**5.7100e-003**	**6.4800e-003**	**0.0780**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**		**22.7397**	**22.7397**	**8.4000e-004**		**22.7572**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6668	6.0815	8.6040	0.0123		0.2969	0.2969		0.2732	0.2732	0.0000	1,185.6547	1,185.6547	0.3835		1,193.7075
Total	**0.6668**	**6.0815**	**8.6040**	**0.0123**	**0.5303**	**0.2969**	**0.8272**	**0.0573**	**0.2732**	**0.3304**	**0.0000**	**1,185.6547**	**1,185.6547**	**0.3835**		**1,193.7075**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7100e-003	6.4800e-003	0.0780	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		22.7397	22.7397	8.4000e-004		22.7572
Total	**5.7100e-003**	**6.4800e-003**	**0.0780**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**		**22.7397**	**22.7397**	**8.4000e-004**		**22.7572**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1040	0.0000	6.1040	3.3211	0.0000	3.3211			0.0000			0.0000
Off-Road	2.9622	24.7448	21.0519	0.0687		0.9900	0.9900		0.9182	0.9182		6,638.4682	6,638.4682	1.9814		6,680.0777
Total	**2.9622**	**24.7448**	**21.0519**	**0.0687**	**6.1040**	**0.9900**	**7.0940**	**3.3211**	**0.9182**	**4.2393**		**6,638.4682**	**6,638.4682**	**1.9814**		**6,680.0777**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7452	5.2962	7.3616	0.0388	0.9105	0.1613	1.0718	0.2494	0.1484	0.3978		3,656.3203	3,656.3203	0.0260		3,656.8653
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434
Total	**0.7795**	**5.3350**	**7.8294**	**0.0409**	**1.0803**	**0.1625**	**1.2428**	**0.2944**	**0.1495**	**0.4440**		**3,792.7585**	**3,792.7585**	**0.0310**		**3,793.4087**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1040	0.0000	6.1040	3.3211	0.0000	3.3211			0.0000			0.0000
Off-Road	2.9622	24.7448	21.0519	0.0687		0.9900	0.9900		0.9182	0.9182	0.0000	6,638.4682	6,638.4682	1.9814		6,680.0777
Total	**2.9622**	**24.7448**	**21.0519**	**0.0687**	**6.1040**	**0.9900**	**7.0940**	**3.3211**	**0.9182**	**4.2393**	**0.0000**	**6,638.4682**	**6,638.4682**	**1.9814**		**6,680.0777**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7452	5.2962	7.3616	0.0388	0.9105	0.1613	1.0718	0.2494	0.1484	0.3978		3,656.3203	3,656.3203	0.0260		3,656.8653
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434
Total	**0.7795**	**5.3350**	**7.8294**	**0.0409**	**1.0803**	**0.1625**	**1.2428**	**0.2944**	**0.1495**	**0.4440**		**3,792.7585**	**3,792.7585**	**0.0310**		**3,793.4087**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810		4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**		**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0315	0.1796	0.3482	1.1900e-003	0.0334	4.3100e-003	0.0377	9.5600e-003	3.9600e-003	0.0135		111.2857	111.2857	7.9000e-004		111.3023
Worker	0.0247	0.0281	0.3379	1.5200e-003	0.1226	8.9000e-004	0.1235	0.0325	8.3000e-004	0.0333		98.5387	98.5387	3.6200e-003		98.6147
Total	**0.0562**	**0.2077**	**0.6861**	**2.7100e-003**	**0.1560**	**5.2000e-003**	**0.1612**	**0.0421**	**4.7900e-003**	**0.0469**		**209.8243**	**209.8243**	**4.4100e-003**		**209.9169**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810	0.0000	4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**	**0.0000**	**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0315	0.1796	0.3482	1.1900e-003	0.0334	4.3100e-003	0.0377	9.5600e-003	3.9600e-003	0.0135		111.2857	111.2857	7.9000e-004		111.3023
Worker	0.0247	0.0281	0.3379	1.5200e-003	0.1226	8.9000e-004	0.1235	0.0325	8.3000e-004	0.0333		98.5387	98.5387	3.6200e-003		98.6147
Total	**0.0562**	**0.2077**	**0.6861**	**2.7100e-003**	**0.1560**	**5.2000e-003**	**0.1612**	**0.0421**	**4.7900e-003**	**0.0469**		**209.8243**	**209.8243**	**4.4100e-003**		**209.9169**

3.6 Landscaping - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616		373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**		**373.6773**	**373.6773**	**0.1209**		**376.2153**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0881	3.4000e-004	0.0885	0.0226	3.2000e-004	0.0229		37.6237	37.6237	1.3600e-003		37.6522
Total	**9.1300e-003**	**0.0104**	**0.1252**	**5.8000e-004**	**0.0881**	**3.4000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**37.6237**	**37.6237**	**1.3600e-003**		**37.6522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616	0.0000	373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**	**0.0000**	**373.6773**	**373.6773**	**0.1209**		**376.2153**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0881	3.4000e-004	0.0885	0.0226	3.2000e-004	0.0229		37.6237	37.6237	1.3600e-003		37.6522
Total	**9.1300e-003**	**0.0104**	**0.1252**	**5.8000e-004**	**0.0881**	**3.4000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**37.6237**	**37.6237**	**1.3600e-003**		**37.6522**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4700e-003	5.2000e-003	0.0228	8.0000e-005	5.2200e-003	1.2000e-004	5.3500e-003	1.4000e-003	1.1000e-004	1.5100e-003		6.0742	6.0742	1.5000e-004		6.0774
Unmitigated	2.4700e-003	5.2000e-003	0.0228	8.0000e-005	5.2200e-003	1.2000e-004	5.3500e-003	1.4000e-003	1.1000e-004	1.5100e-003		6.0742	6.0742	1.5000e-004		6.0774

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.14	1.14	1.14	2,444	2,444
Total	1.14	1.14	1.14	2,444	2,444

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7578	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-004	1.6000e-004	0.0000		1.7000e-004
Unmitigated	0.7578	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-004	1.6000e-004	0.0000		1.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0893					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6685					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-004	1.6000e-004	0.0000		1.7000e-004

Total	**0.7578**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.6000e-004**	**1.6000e-004**	**0.0000**		**1.7000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0893					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6685					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-004	1.6000e-004	0.0000		1.7000e-004
Total	**0.7578**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.6000e-004**	**1.6000e-004**	**0.0000**		**1.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.25	Acre	0.25	10,990.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Con. orted sq. ore footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	130.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	1.00	44.00
tblConstructionPhase	PhaseEndDate	5/31/2029	9/30/2029
tblConstructionPhase	PhaseEndDate	1/31/2029	11/30/2028
tblConstructionPhase	PhaseEndDate	1/1/2029	11/30/2028
tblConstructionPhase	PhaseStartDate	12/1/2028	4/1/2029
tblConstructionPhase	PhaseStartDate	12/1/2028	10/1/2028
tblConstructionPhase	PhaseStartDate	11/1/2028	10/1/2028
tblGrading	AcresOfGrading	44.00	0.25
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	10,890.00	10,990.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.1513	1.2770	1.3455	3.5700e-003	0.1626	0.0529	0.2155	0.0790	0.0489	0.1278	0.0000	309.7288	309.7288	0.0837	0.0000	311.4870
2029	0.0984	0.7135	0.9503	2.8200e-003	6.5800e-003	0.0284	0.0349	1.7400e-003	0.0269	0.0287	0.0000	264.9216	264.9216	0.0360	0.0000	265.6780
Total	**0.2497**	**1.9905**	**2.2958**	**6.3900e-003**	**0.1692**	**0.0813**	**0.2504**	**0.0807**	**0.0758**	**0.1565**	**0.0000**	**574.6504**	**574.6504**	**0.1198**	**0.0000**	**577.1650**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.1513	1.2770	1.3455	3.5700e-003	0.1626	0.0529	0.2155	0.0790	0.0489	0.1278	0.0000	309.7285	309.7285	0.0837	0.0000	311.4867
2029	0.0984	0.7135	0.9503	2.8200e-003	6.5800e-003	0.0284	0.0349	1.7400e-003	0.0269	0.0287	0.0000	264.9213	264.9213	0.0360	0.0000	265.6776
Total	**0.2497**	**1.9905**	**2.2958**	**6.3900e-003**	**0.1692**	**0.0813**	**0.2504**	**0.0807**	**0.0758**	**0.1565**	**0.0000**	**574.6497**	**574.6497**	**0.1198**	**0.0000**	**577.1643**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0487	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.5000e-004	3.5000e-004	1.6100e-003	0.0000	3.2000e-004	1.0000e-005	3.3000e-004	9.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.3320	0.3320	1.0000e-005	0.0000	0.3322
Waste						0.0000	0.0000		0.0000	0.0000	4.0600e-003	0.0000	4.0600e-003	2.4000e-004	0.0000	9.1000e-003
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.3033	0.3033	1.0000e-005	0.0000	0.3045
Total	**0.0488**	**3.5000e-004**	**1.6100e-003**	**0.0000**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**9.0000e-005**	**1.0000e-005**	**9.0000e-005**	**4.0600e-003**	**0.6353**	**0.6394**	**2.6000e-004**	**0.0000**	**0.6458**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0487	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.5000e-004	3.5000e-004	1.6100e-003	0.0000	3.2000e-004	1.0000e-005	3.3000e-004	9.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.3320	0.3320	1.0000e-005	0.0000	0.3322
Waste						0.0000	0.0000		0.0000	0.0000	4.0600e-003	0.0000	4.0600e-003	2.4000e-004	0.0000	9.1000e-003
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.3033	0.3033	1.0000e-005	0.0000	0.3045
Total	**0.0488**	**3.5000e-004**	**1.6100e-003**	**0.0000**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**9.0000e-005**	**1.0000e-005**	**9.0000e-005**	**4.0600e-003**	**0.6353**	**0.6394**	**2.6000e-004**	**0.0000**	**0.6458**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2028	10/31/2028	5	43	
2	Excavation	Site Preparation	10/1/2028	11/30/2028	5	44	
3	Grading	Grading	10/1/2028	11/30/2028	5	44	
4	Building Construction	Building Construction	4/1/2029	9/30/2029	5	130	
5	Landscaping	Trenching	10/1/2029	12/31/2029	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.25

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Building Construction	5	5.00	2.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0613	0.5363	0.5665	1.2700e-003		0.0228	0.0228		0.0210	0.0210	0.0000	111.4365	111.4365	0.0360	0.0000	112.1934
Total	**0.0613**	**0.5363**	**0.5665**	**1.2700e-003**	**0.0000**	**0.0228**	**0.0228**	**0.0000**	**0.0210**	**0.0210**	**0.0000**	**111.4365**	**111.4365**	**0.0360**	**0.0000**	**112.1934**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	1.0500e-003	0.0101	5.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	2.7417	2.7417	1.1000e-004	0.0000	2.7440
Total	**7.4000e-004**	**1.0500e-003**	**0.0101**	**5.0000e-005**	**3.9000e-003**	**3.0000e-005**	**3.9300e-003**	**1.0400e-003**	**3.0000e-005**	**1.0700e-003**	**0.0000**	**2.7417**	**2.7417**	**1.1000e-004**	**0.0000**	**2.7440**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0613	0.5363	0.5665	1.2700e-003		0.0228	0.0228		0.0210	0.0210	0.0000	111.4364	111.4364	0.0360	0.0000	112.1933
Total	**0.0613**	**0.5363**	**0.5665**	**1.2700e-003**	**0.0000**	**0.0228**	**0.0228**	**0.0000**	**0.0210**	**0.0210**	**0.0000**	**111.4364**	**111.4364**	**0.0360**	**0.0000**	**112.1933**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	1.0500e-003	0.0101	5.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	2.7417	2.7417	1.1000e-004	0.0000	2.7440
Total	**7.4000e-004**	**1.0500e-003**	**0.0101**	**5.0000e-005**	**3.9000e-003**	**3.0000e-005**	**3.9300e-003**	**1.0400e-003**	**3.0000e-005**	**1.0700e-003**	**0.0000**	**2.7417**	**2.7417**	**1.1000e-004**	**0.0000**	**2.7440**

3.3 Excavation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.0117	0.0000	0.0117	1.2600e-003	0.0000	1.2600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0147	0.1338	0.1893	2.7000e-004		6.5300e-003	6.5300e-003		6.0100e-003	6.0100e-003	0.0000	23.6634	23.6634	7.6500e-003	0.0000	23.8241
Total	**0.0147**	**0.1338**	**0.1893**	**2.7000e-004**	**0.0117**	**6.5300e-003**	**0.0182**	**1.2600e-003**	**6.0100e-003**	**7.2700e-003**	**0.0000**	**23.6634**	**23.6634**	**7.6500e-003**	**0.0000**	**23.8241**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.6000e-004	1.5600e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4208	0.4208	2.0000e-005	0.0000	0.4212
Total	**1.1000e-004**	**1.6000e-004**	**1.5600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4208**	**0.4208**	**2.0000e-005**	**0.0000**	**0.4212**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0117	0.0000	0.0117	1.2600e-003	0.0000	1.2600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0147	0.1338	0.1893	2.7000e-004		6.5300e-003	6.5300e-003		6.0100e-003	6.0100e-003	0.0000	23.6633	23.6633	7.6500e-003	0.0000	23.8241
Total	**0.0147**	**0.1338**	**0.1893**	**2.7000e-004**	**0.0117**	**6.5300e-003**	**0.0182**	**1.2600e-003**	**6.0100e-003**	**7.2700e-003**	**0.0000**	**23.6633**	**23.6633**	**7.6500e-003**	**0.0000**	**23.8241**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.6000e-004	1.5600e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4208	0.4208	2.0000e-005	0.0000	0.4212
Total	**1.1000e-004**	**1.6000e-004**	**1.5600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4208**	**0.4208**	**2.0000e-005**	**0.0000**	**0.4212**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1331	0.0000	0.1331	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0652	0.5444	0.4631	1.5100e-003		0.0218	0.0218		0.0202	0.0202	0.0000	132.4910	132.4910	0.0396	0.0000	133.3214
Total	**0.0652**	**0.5444**	**0.4631**	**1.5100e-003**	**0.1331**	**0.0218**	**0.1549**	**0.0729**	**0.0202**	**0.0931**	**0.0000**	**132.4910**	**132.4910**	**0.0396**	**0.0000**	**133.3214**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	8.5900e-003	0.0604	0.1056	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4506	36.4506	2.6000e-004	0.0000	36.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	9.7000e-004	9.3300e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5249	2.5249	1.0000e-004	0.0000	2.5270
Total	**9.2800e-003**	**0.0614**	**0.1149**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9754**	**38.9754**	**3.6000e-004**	**0.0000**	**38.9830**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1331	0.0000	0.1331	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0652	0.5444	0.4631	1.5100e-003		0.0218	0.0218		0.0202	0.0202	0.0000	132.4908	132.4908	0.0395	0.0000	133.3213
Total	**0.0652**	**0.5444**	**0.4631**	**1.5100e-003**	**0.1331**	**0.0218**	**0.1549**	**0.0729**	**0.0202**	**0.0931**	**0.0000**	**132.4908**	**132.4908**	**0.0395**	**0.0000**	**133.3213**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0604	0.1056	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4506	36.4506	2.6000e-004	0.0000	36.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	9.7000e-004	9.3300e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5249	2.5249	1.0000e-004	0.0000	2.5270
Total	**9.2800e-003**	**0.0614**	**0.1149**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9754**	**38.9754**	**3.6000e-004**	**0.0000**	**38.9830**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0913	0.6530	0.8359	2.6100e-003		0.0260	0.0260		0.0248	0.0248	0.0000	248.0168	248.0168	0.0323	0.0000	248.6943
Total	**0.0913**	**0.6530**	**0.8359**	**2.6100e-003**		**0.0260**	**0.0260**		**0.0248**	**0.0248**	**0.0000**	**248.0168**	**248.0168**	**0.0323**	**0.0000**	**248.6943**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.7000e-004	4.7900e-003	0.0122	3.0000e-005	8.4000e-004	1.1000e-004	9.5000e-004	2.4000e-004	1.0000e-004	3.5000e-004	0.0000	2.6167	2.6167	2.0000e-005	0.0000	2.6171
Worker	5.4000e-004	7.6000e-004	7.3700e-003	4.0000e-005	2.9500e-003	2.0000e-005	2.9700e-003	7.8000e-004	2.0000e-005	8.1000e-004	0.0000	2.0570	2.0570	8.0000e-005	0.0000	2.0586
Total	**1.4100e-003**	**5.5500e-003**	**0.0196**	**7.0000e-005**	**3.7900e-003**	**1.3000e-004**	**3.9200e-003**	**1.0200e-003**	**1.2000e-004**	**1.1600e-003**	**0.0000**	**4.6737**	**4.6737**	**1.0000e-004**	**0.0000**	**4.6757**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	0.0913	0.6530	0.8359	2.6100e-003		0.0260	0.0260		0.0248	0.0248	0.0000	248.0165	248.0165	0.0323	0.0000	248.6940
Total	**0.0913**	**0.6530**	**0.8359**	**2.6100e-003**		**0.0260**	**0.0260**		**0.0248**	**0.0248**	**0.0000**	**248.0165**	**248.0165**	**0.0323**	**0.0000**	**248.6940**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.7000e-004	4.7900e-003	0.0122	3.0000e-005	8.4000e-004	1.1000e-004	9.5000e-004	2.4000e-004	1.0000e-004	3.5000e-004	0.0000	2.6167	2.6167	2.0000e-005	0.0000	2.6171
Worker	5.4000e-004	7.6000e-004	7.3700e-003	4.0000e-005	2.9500e-003	2.0000e-005	2.9700e-003	7.8000e-004	2.0000e-005	8.1000e-004	0.0000	2.0570	2.0570	8.0000e-005	0.0000	2.0586
Total	**1.4100e-003**	**5.5500e-003**	**0.0196**	**7.0000e-005**	**3.7900e-003**	**1.3000e-004**	**3.9200e-003**	**1.0200e-003**	**1.2000e-004**	**1.1600e-003**	**0.0000**	**4.6737**	**4.6737**	**1.0000e-004**	**0.0000**	**4.6757**

3.6 Landscaping - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3900e-003	0.0545	0.0910	1.3000e-004		2.2100e-003	2.2100e-003		2.0300e-003	2.0300e-003	0.0000	11.1868	11.1868	3.6200e-003	0.0000	11.2628
Total	**5.3900e-003**	**0.0545**	**0.0910**	**1.3000e-004**		**2.2100e-003**	**2.2100e-003**		**2.0300e-003**	**2.0300e-003**	**0.0000**	**11.1868**	**11.1868**	**3.6200e-003**	**0.0000**	**11.2628**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.9000e-004	3.7400e-003	2.0000e-005	2.7900e-003	1.0000e-005	2.8000e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	1.0443	1.0443	4.0000e-005	0.0000	1.0452
Total	**2.7000e-004**	**3.9000e-004**	**3.7400e-003**	**2.0000e-005**	**2.7900e-003**	**1.0000e-005**	**2.8000e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**1.0443**	**1.0443**	**4.0000e-005**	**0.0000**	**1.0452**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3900e-003	0.0545	0.0910	1.3000e-004		2.2100e-003	2.2100e-003		2.0300e-003	2.0300e-003	0.0000	11.1868	11.1868	3.6200e-003	0.0000	11.2628
Total	**5.3900e-003**	**0.0545**	**0.0910**	**1.3000e-004**		**2.2100e-003**	**2.2100e-003**		**2.0300e-003**	**2.0300e-003**	**0.0000**	**11.1868**	**11.1868**	**3.6200e-003**	**0.0000**	**11.2628**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.9000e-004	3.7400e-003	2.0000e-005	2.7900e-003	1.0000e-005	2.8000e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	1.0443	1.0443	4.0000e-005	0.0000	1.0452
Total	**2.7000e-004**	**3.9000e-004**	**3.7400e-003**	**2.0000e-005**	**2.7900e-003**	**1.0000e-005**	**2.8000e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**1.0443**	**1.0443**	**4.0000e-005**	**0.0000**	**1.0452**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.5000e-004	3.5000e-004	1.6100e-003	0.0000	3.2000e-004	1.0000e-005	3.3000e-004	9.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.3320	0.3320	1.0000e-005	0.0000	0.3322
Unmitigated	1.5000e-004	3.5000e-004	1.6100e-003	0.0000	3.2000e-004	1.0000e-005	3.3000e-004	9.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.3320	0.3320	1.0000e-005	0.0000	0.3322

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.40	0.40	0.40	849	849
Total	0.40	0.40	0.40	849	849

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0487	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0487	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.7300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0429					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0487**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.7300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0429					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0487**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.3033	1.0000e-005	0.0000	0.3045
Unmitigated	0.3033	1.0000e-005	0.0000	0.3045

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.29787	0.3033	1.0000e-005	0.0000	0.3045
Total		**0.3033**	**1.0000e-005**	**0.0000**	**0.3045**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.29787	0.3033	1.0000e-005	0.0000	0.3045
Total		**0.3033**	**1.0000e-005**	**0.0000**	**0.3045**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e

	MT/yr			
Mitigated	4.0600e-003	2.4000e-004	0.0000	9.1000e-003
Unmitigated	4.0600e-003	2.4000e-004	0.0000	9.1000e-003

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.02	4.0600e-003	2.4000e-004	0.0000	9.1000e-003
Total		**4.0600e-003**	**2.4000e-004**	**0.0000**	**9.1000e-003**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.02	4.0600e-003	2.4000e-004	0.0000	9.1000e-003
Total		**4.0600e-003**	**2.4000e-004**	**0.0000**	**9.1000e-003**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.25	Acre	0.25	10,990.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Conv. ted sq. are footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	130.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	1.00	44.00
tblConstructionPhase	PhaseEndDate	5/31/2029	9/30/2029
tblConstructionPhase	PhaseEndDate	1/31/2029	11/30/2028
tblConstructionPhase	PhaseEndDate	1/1/2029	11/30/2028
tblConstructionPhase	PhaseStartDate	12/1/2028	4/1/2029
tblConstructionPhase	PhaseStartDate	12/1/2028	10/1/2028
tblConstructionPhase	PhaseStartDate	11/1/2028	10/1/2028
tblGrading	AcresOfGrading	44.00	0.25
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	10,890.00	10,990.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	6.9327	58.5059	60.7498	0.1642	7.4239	2.4293	9.8532	3.5990	2.2424	5.8414	0.0000	15,676.4421	15,676.4421	4.2371	0.0000	15,765.4209
2029	1.4260	10.1286	13.1232	0.0412	0.0881	0.4021	0.4627	0.0226	0.3829	0.3993	0.0000	4,288.1703	4,288.1703	0.5488	0.0000	4,299.6944
Total	**8.3587**	**68.6345**	**73.8730**	**0.2054**	**7.5120**	**2.8315**	**10.3158**	**3.6215**	**2.6254**	**6.2406**	**0.0000**	**19,964.6123**	**19,964.6123**	**4.7859**	**0.0000**	**20,065.1153**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	6.9327	58.5059	60.7498	0.1642	7.4239	2.4293	9.8532	3.5990	2.2424	5.8414	0.0000	15,676.4420	15,676.4420	4.2371	0.0000	15,765.4209
2029	1.4260	10.1286	13.1232	0.0412	0.0881	0.4021	0.4627	0.0226	0.3829	0.3993	0.0000	4,288.1703	4,288.1703	0.5488	0.0000	4,299.6944
Total	**8.3587**	**68.6345**	**73.8730**	**0.2054**	**7.5120**	**2.8315**	**10.3158**	**3.6215**	**2.6254**	**6.2406**	**0.0000**	**19,964.6123**	**19,964.6123**	**4.7859**	**0.0000**	**20,065.1153**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2666	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		5.0000e-005	5.0000e-005	0.0000		6.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	8.6000e-004	1.8100e-003	7.9100e-003	3.0000e-005	1.8100e-003	4.0000e-005	1.8600e-003	4.9000e-004	4.0000e-005	5.3000e-004		2.1091	2.1091	5.0000e-005		2.1102
Total	**0.2675**	**1.8100e-003**	**7.9400e-003**	**3.0000e-005**	**1.8100e-003**	**4.0000e-005**	**1.8600e-003**	**4.9000e-004**	**4.0000e-005**	**5.3000e-004**		**2.1091**	**2.1091**	**5.0000e-005**	**0.0000**	**2.1103**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2666	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		5.0000e-005	5.0000e-005	0.0000		6.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	8.6000e-004	1.8100e-003	7.9100e-003	3.0000e-005	1.8100e-003	4.0000e-005	1.8600e-003	4.9000e-004	4.0000e-005	5.3000e-004		2.1091	2.1091	5.0000e-005		2.1102
Total	**0.2675**	**1.8100e-003**	**7.9400e-003**	**3.0000e-005**	**1.8100e-003**	**4.0000e-005**	**1.8600e-003**	**4.9000e-004**	**4.0000e-005**	**5.3000e-004**		**2.1091**	**2.1091**	**5.0000e-005**	**0.0000**	**2.1103**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2028	10/31/2028	5	43	
2	Excavation	Site Preparation	10/1/2028	11/30/2028	5	44	
3	Grading	Grading	10/1/2028	11/30/2028	5	44	
4	Building Construction	Building Construction	4/1/2029	9/30/2029	5	130	
5	Landscaping	Trenching	10/1/2029	12/31/2029	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.25

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	5.00	2.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743		5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**		**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743	0.0000	5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**	**0.0000**	**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

3.3 Excavation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6668	6.0815	8.6040	0.0123		0.2969	0.2969		0.2732	0.2732		1,185.6547	1,185.6547	0.3835		1,193.7075
Total	**0.6668**	**6.0815**	**8.6040**	**0.0123**	**0.5303**	**0.2969**	**0.8272**	**0.0573**	**0.2732**	**0.3304**		**1,185.6547**	**1,185.6547**	**0.3835**		**1,193.7075**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7100e-003	6.4800e-003	0.0780	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		22.7397	22.7397	8.4000e-004		22.7572
Total	**5.7100e-003**	**6.4800e-003**	**0.0780**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**		**22.7397**	**22.7397**	**8.4000e-004**		**22.7572**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6668	6.0815	8.6040	0.0123		0.2969	0.2969		0.2732	0.2732	0.0000	1,185.6547	1,185.6547	0.3835		1,193.7075
Total	**0.6668**	**6.0815**	**8.6040**	**0.0123**	**0.5303**	**0.2969**	**0.8272**	**0.0573**	**0.2732**	**0.3304**	**0.0000**	**1,185.6547**	**1,185.6547**	**0.3835**		**1,193.7075**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7100e-003	6.4800e-003	0.0780	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		22.7397	22.7397	8.4000e-004		22.7572
Total	**5.7100e-003**	**6.4800e-003**	**0.0780**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**		**22.7397**	**22.7397**	**8.4000e-004**		**22.7572**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Fugitive Dust					6.0517	0.0000	6.0517	3.3145	0.0000	3.3145			0.0000			0.0000
Off-Road	2.9622	24.7448	21.0519	0.0687		0.9900	0.9900		0.9182	0.9182		6,638.4682	6,638.4682	1.9814		6,680.0777
Total	**2.9622**	**24.7448**	**21.0519**	**0.0687**	**6.0517**	**0.9900**	**7.0417**	**3.3145**	**0.9182**	**4.2326**		**6,638.4682**	**6,638.4682**	**1.9814**		**6,680.0777**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.3726	2.6481	3.6808	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1602	1,828.1602	0.0130		1,828.4327
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434

Total	**0.4069**	**2.6870**	**4.1486**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,964.5983**	**1,964.5983**	**0.0180**		**1,964.9761**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0517	0.0000	6.0517	3.3145	0.0000	3.3145			0.0000			0.0000
Off-Road	2.9622	24.7448	21.0519	0.0687		0.9900	0.9900		0.9182	0.9182	0.0000	6,638.4682	6,638.4682	1.9814		6,680.0777
Total	**2.9622**	**24.7448**	**21.0519**	**0.0687**	**6.0517**	**0.9900**	**7.0417**	**3.3145**	**0.9182**	**4.2326**	**0.0000**	**6,638.4682**	**6,638.4682**	**1.9814**		**6,680.0777**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3726	2.6481	3.6808	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1602	1,828.1602	0.0130		1,828.4327
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434
Total	**0.4069**	**2.6870**	**4.1486**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,964.5983**	**1,964.5983**	**0.0180**		**1,964.9761**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810		4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**		**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0124	0.0715	0.1375	4.7000e-004	0.0134	1.7200e-003	0.0151	3.8200e-003	1.5900e-003	5.4100e-003		44.5201	44.5201	3.2000e-004		44.5267
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0472	3.4000e-004	0.0475	0.0125	3.2000e-004	0.0128		37.6237	37.6237	1.3600e-003		37.6522
Total	**0.0215**	**0.0818**	**0.2627**	**1.0500e-003**	**0.0605**	**2.0600e-003**	**0.0626**	**0.0163**	**1.9100e-003**	**0.0182**		**82.1438**	**82.1438**	**1.6800e-003**		**82.1789**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810	0.0000	4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**	**0.0000**	**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0124	0.0715	0.1375	4.7000e-004	0.0134	1.7200e-003	0.0151	3.8200e-003	1.5900e-003	5.4100e-003		44.5201	44.5201	3.2000e-004		44.5267
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0472	3.4000e-004	0.0475	0.0125	3.2000e-004	0.0128		37.6237	37.6237	1.3600e-003		37.6522
Total	**0.0215**	**0.0818**	**0.2627**	**1.0500e-003**	**0.0605**	**2.0600e-003**	**0.0626**	**0.0163**	**1.9100e-003**	**0.0182**		**82.1438**	**82.1438**	**1.6800e-003**		**82.1789**

3.6 Landscaping - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616		373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**		**373.6773**	**373.6773**	**0.1209**		**376.2153**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0881	3.4000e-004	0.0885	0.0226	3.2000e-004	0.0229		37.6237	37.6237	1.3600e-003		37.6522
Total	**9.1300e-003**	**0.0104**	**0.1252**	**5.8000e-004**	**0.0881**	**3.4000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**37.6237**	**37.6237**	**1.3600e-003**		**37.6522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616	0.0000	373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**	**0.0000**	**373.6773**	**373.6773**	**0.1209**		**376.2153**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0881	3.4000e-004	0.0885	0.0226	3.2000e-004	0.0229		37.6237	37.6237	1.3600e-003		37.6522
Total	**9.1300e-003**	**0.0104**	**0.1252**	**5.8000e-004**	**0.0881**	**3.4000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**37.6237**	**37.6237**	**1.3600e-003**		**37.6522**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.6000e-004	1.8100e-003	7.9100e-003	3.0000e-005	1.8100e-003	4.0000e-005	1.8600e-003	4.9000e-004	4.0000e-005	5.3000e-004		2.1091	2.1091	5.0000e-005		2.1102
Unmitigated	8.6000e-004	1.8100e-003	7.9100e-003	3.0000e-005	1.8100e-003	4.0000e-005	1.8600e-003	4.9000e-004	4.0000e-005	5.3000e-004		2.1091	2.1091	5.0000e-005		2.1102

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.40	0.40	0.40	849	849
Total	0.40	0.40	0.40	849	849

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2666	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		5.0000e-005	5.0000e-005	0.0000		6.0000e-005
Unmitigated	0.2666	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		5.0000e-005	5.0000e-005	0.0000		6.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Architectural Coating	0.0314					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2352					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		5.0000e-005	5.0000e-005	0.0000		6.0000e-005
Total	**0.2666**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**5.0000e-005**	**5.0000e-005**	**0.0000**		**6.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0314					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2352					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		5.0000e-005	5.0000e-005	0.0000		6.0000e-005
Total	**0.2666**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**5.0000e-005**	**5.0000e-005**	**0.0000**		**6.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.77	Acre	1.77	76,860.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Con. orted sq. ore footage to acres

Sequestration -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	44.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	4.00	21.00
tblConstructionPhase	NumDays	2.00	21.00
tblConstructionPhase	PhaseEndDate	10/30/2028	9/30/2028
tblConstructionPhase	PhaseEndDate	9/29/2028	9/30/2028
tblConstructionPhase	PhaseStartDate	10/1/2028	9/1/2028
tblGrading	AcresOfGrading	21.00	1.77
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	77,101.20	76,860.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00

tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblSequestration	NumberOfNewTrees	0.00	950.00
tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.1191	0.9547	1.0983	3.0900e-003	0.1485	0.0388	0.1873	0.0722	0.0360	0.1082	0.0000	273.0779	273.0779	0.0566	0.0000	274.2655
2029	3.6900e-003	0.0358	0.0617	9.0000e-005	1.8200e-003	1.4500e-003	3.2700e-003	4.7000e-004	1.3300e-003	1.8000e-003	0.0000	7.9688	7.9688	2.3800e-003	0.0000	8.0188
Total	**0.1228**	**0.9904**	**1.1600**	**3.1800e-003**	**0.1503**	**0.0403**	**0.1906**	**0.0726**	**0.0373**	**0.1100**	**0.0000**	**281.0466**	**281.0466**	**0.0589**	**0.0000**	**282.2843**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	tons/yr										MT/yr					
2028	0.1191	0.9547	1.0983	3.0900e-003	0.1485	0.0388	0.1873	0.0722	0.0360	0.1082	0.0000	273.0776	273.0776	0.0566	0.0000	274.2653
2029	3.6900e-003	0.0358	0.0617	9.0000e-005	1.8200e-003	1.4500e-003	3.2700e-003	4.7000e-004	1.3300e-003	1.8000e-003	0.0000	7.9687	7.9687	2.3800e-003	0.0000	8.0188
Total	**0.1228**	**0.9904**	**1.1600**	**3.1800e-003**	**0.1503**	**0.0403**	**0.1906**	**0.0726**	**0.0373**	**0.1100**	**0.0000**	**281.0463**	**281.0463**	**0.0589**	**0.0000**	**282.2841**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3403	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.0700e-003	2.4600e-003	0.0114	4.0000e-005	2.2500e-003	6.0000e-005	2.3100e-003	6.0000e-004	5.0000e-005	6.6000e-004	0.0000	2.3508	2.3508	6.0000e-005	0.0000	2.3521
Waste						0.0000	0.0000		0.0000	0.0000	0.0305	0.0000	0.0305	1.8000e-003	0.0000	0.0682
Water						0.0000	0.0000		0.0000	0.0000	0.0000	2.1473	2.1473	1.0000e-004	2.0000e-005	2.1556
Total	**0.3413**	**2.4600e-003**	**0.0114**	**4.0000e-005**	**2.2500e-003**	**6.0000e-005**	**2.3100e-003**	**6.0000e-004**	**5.0000e-005**	**6.6000e-004**	**0.0305**	**4.4981**	**4.5286**	**1.9600e-003**	**2.0000e-005**	**4.5759**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3403	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.0700e-003	2.4600e-003	0.0114	4.0000e-005	2.2500e-003	6.0000e-005	2.3100e-003	6.0000e-004	5.0000e-005	6.6000e-004	0.0000	2.3508	2.3508	6.0000e-005	0.0000	2.3521
Waste						0.0000	0.0000		0.0000	0.0000	0.0305	0.0000	0.0305	1.8000e-003	0.0000	0.0682
Water						0.0000	0.0000		0.0000	0.0000	0.0000	2.1473	2.1473	1.0000e-004	2.0000e-005	2.1556
Total	**0.3413**	**2.4600e-003**	**0.0114**	**4.0000e-005**	**2.2500e-003**	**6.0000e-005**	**2.3100e-003**	**6.0000e-004**	**5.0000e-005**	**6.6000e-004**	**0.0305**	**4.4981**	**4.5286**	**1.9600e-003**	**2.0000e-005**	**4.5759**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	672.6000
Total	**672.6000**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2028	8/31/2028	5	23	
2	Excavation	Site Preparation	9/1/2028	9/30/2028	5	21	
3	Grading	Grading	9/1/2028	9/30/2028	5	21	
4	Building Construction	Building Construction	10/1/2028	11/30/2028	5	44	
5	Landscaping	Trenching	12/1/2028	2/28/2029	5	64	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.77

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37

Excavation	Graders	1	8.00	174	0.41
Excavation	Rubber Tired Dozers	1	7.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	32.00	13.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0328	0.2868	0.3030	6.8000e-004		0.0122	0.0122		0.0112	0.0112	0.0000	59.6056	59.6056	0.0193	0.0000	60.0104
Total	**0.0328**	**0.2868**	**0.3030**	**6.8000e-004**	**0.0000**	**0.0122**	**0.0122**	**0.0000**	**0.0112**	**0.0112**	**0.0000**	**59.6056**	**59.6056**	**0.0193**	**0.0000**	**60.0104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	5.6000e-004	5.4200e-003	2.0000e-005	2.0900e-003	2.0000e-005	2.1000e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.4665	1.4665	6.0000e-005	0.0000	1.4677
Total	**4.0000e-004**	**5.6000e-004**	**5.4200e-003**	**2.0000e-005**	**2.0900e-003**	**2.0000e-005**	**2.1000e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.4665**	**1.4665**	**6.0000e-005**	**0.0000**	**1.4677**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0328	0.2868	0.3030	6.8000e-004		0.0122	0.0122		0.0112	0.0112	0.0000	59.6055	59.6055	0.0193	0.0000	60.0103
Total	**0.0328**	**0.2868**	**0.3030**	**6.8000e-004**	**0.0000**	**0.0122**	**0.0122**	**0.0000**	**0.0112**	**0.0112**	**0.0000**	**59.6055**	**59.6055**	**0.0193**	**0.0000**	**60.0103**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	4.0000e-004	5.6000e-004	5.4200e-003	2.0000e-005	2.0900e-003	2.0000e-005	2.1000e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.4665	1.4665	6.0000e-005	0.0000	1.4677
Total	**4.0000e-004**	**5.6000e-004**	**5.4200e-003**	**2.0000e-005**	**2.0900e-003**	**2.0000e-005**	**2.1000e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.4665**	**1.4665**	**6.0000e-005**	**0.0000**	**1.4677**

3.3 Excavation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0609	0.0000	0.0609	0.0310	0.0000	0.0310	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0131	0.1196	0.1393	2.1000e-004		5.6100e-003	5.6100e-003		5.1600e-003	5.1600e-003	0.0000	18.4774	18.4774	5.9800e-003	0.0000	18.6029
Total	**0.0131**	**0.1196**	**0.1393**	**2.1000e-004**	**0.0609**	**5.6100e-003**	**0.0665**	**0.0310**	**5.1600e-003**	**0.0362**	**0.0000**	**18.4774**	**18.4774**	**5.9800e-003**	**0.0000**	**18.6029**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	8.0000e-005	7.4000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2008	0.2008	1.0000e-005	0.0000	0.2010
Total	**5.0000e-005**	**8.0000e-005**	**7.4000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**2.9000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2008**	**0.2008**	**1.0000e-005**	**0.0000**	**0.2010**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0609	0.0000	0.0609	0.0310	0.0000	0.0310	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0131	0.1196	0.1393	2.1000e-004		5.6100e-003	5.6100e-003		5.1600e-003	5.1600e-003	0.0000	18.4774	18.4774	5.9800e-003	0.0000	18.6029
Total	**0.0131**	**0.1196**	**0.1393**	**2.1000e-004**	**0.0609**	**5.6100e-003**	**0.0665**	**0.0310**	**5.1600e-003**	**0.0362**	**0.0000**	**18.4774**	**18.4774**	**5.9800e-003**	**0.0000**	**18.6029**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	8.0000e-005	7.4000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2008	0.2008	1.0000e-005	0.0000	0.2010
Total	**5.0000e-005**	**8.0000e-005**	**7.4000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**2.9000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2008**	**0.2008**	**1.0000e-005**	**0.0000**	**0.2010**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0647	0.0000	0.0647	0.0349	0.0000	0.0349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0280	0.2360	0.1828	6.6000e-004		9.4200e-003	9.4200e-003		8.6700e-003	8.6700e-003	0.0000	57.5889	57.5889	0.0186	0.0000	57.9801
Total	**0.0280**	**0.2360**	**0.1828**	**6.6000e-004**	**0.0647**	**9.4200e-003**	**0.0741**	**0.0349**	**8.6700e-003**	**0.0436**	**0.0000**	**57.5889**	**57.5889**	**0.0186**	**0.0000**	**57.9801**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0604	0.1056	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4506	36.4506	2.6000e-004	0.0000	36.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	4.6000e-004	4.4500e-003	2.0000e-005	1.7200e-003	1.0000e-005	1.7300e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.2051	1.2051	5.0000e-005	0.0000	1.2061
Total	**8.9200e-003**	**0.0609**	**0.1100**	**4.5000e-004**	**0.0114**	**1.7900e-003**	**0.0132**	**3.1200e-003**	**1.6400e-003**	**4.7700e-003**	**0.0000**	**37.6556**	**37.6556**	**3.1000e-004**	**0.0000**	**37.6621**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0647	0.0000	0.0647	0.0349	0.0000	0.0349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0280	0.2360	0.1828	6.6000e-004		9.4200e-003	9.4200e-003		8.6700e-003	8.6700e-003	0.0000	57.5889	57.5889	0.0186	0.0000	57.9800
Total	**0.0280**	**0.2360**	**0.1828**	**6.6000e-004**	**0.0647**	**9.4200e-003**	**0.0741**	**0.0349**	**8.6700e-003**	**0.0436**	**0.0000**	**57.5889**	**57.5889**	**0.0186**	**0.0000**	**57.9800**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0604	0.1056	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4506	36.4506	2.6000e-004	0.0000	36.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	4.6000e-004	4.4500e-003	2.0000e-005	1.7200e-003	1.0000e-005	1.7300e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.2051	1.2051	5.0000e-005	0.0000	1.2061
Total	**8.9200e-003**	**0.0609**	**0.1100**	**4.5000e-004**	**0.0114**	**1.7900e-003**	**0.0132**	**3.1200e-003**	**1.6400e-003**	**4.7700e-003**	**0.0000**	**37.6556**	**37.6556**	**3.1000e-004**	**0.0000**	**37.6621**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0309	0.2210	0.2829	8.8000e-004		8.8000e-003	8.8000e-003		8.3800e-003	8.3800e-003	0.0000	83.9442	83.9442	0.0109	0.0000	84.1735
Total	**0.0309**	**0.2210**	**0.2829**	**8.8000e-004**		**8.8000e-003**	**8.8000e-003**		**8.3800e-003**	**8.3800e-003**	**0.0000**	**83.9442**	**83.9442**	**0.0109**	**0.0000**	**84.1735**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	1.9400e-003	0.0106	0.0274	7.0000e-005	1.8500e-003	2.5000e-004	2.1000e-003	5.3000e-004	2.3000e-004	7.6000e-004	0.0000	5.7560	5.7560	4.0000e-005	0.0000	5.7569
Worker	1.2200e-003	1.7200e-003	0.0166	8.0000e-005	6.3900e-003	5.0000e-005	6.4400e-003	1.7000e-003	4.0000e-005	1.7400e-003	0.0000	4.4887	4.4887	1.8000e-004	0.0000	4.4924
Total	**3.1600e-003**	**0.0123**	**0.0439**	**1.5000e-004**	**8.2400e-003**	**3.0000e-004**	**8.5400e-003**	**2.2300e-003**	**2.7000e-004**	**2.5000e-003**	**0.0000**	**10.2447**	**10.2447**	**2.2000e-004**	**0.0000**	**10.2493**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0309	0.2210	0.2829	8.8000e-004		8.8000e-003	8.8000e-003		8.3800e-003	8.3800e-003	0.0000	83.9441	83.9441	0.0109	0.0000	84.1734
Total	**0.0309**	**0.2210**	**0.2829**	**8.8000e-004**		**8.8000e-003**	**8.8000e-003**		**8.3800e-003**	**8.3800e-003**	**0.0000**	**83.9441**	**83.9441**	**0.0109**	**0.0000**	**84.1734**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9400e-003	0.0106	0.0274	7.0000e-005	1.8500e-003	2.5000e-004	2.1000e-003	5.3000e-004	2.3000e-004	7.6000e-004	0.0000	5.7560	5.7560	4.0000e-005	0.0000	5.7569
Worker	1.2200e-003	1.7200e-003	0.0166	8.0000e-005	6.3900e-003	5.0000e-005	6.4400e-003	1.7000e-003	4.0000e-005	1.7400e-003	0.0000	4.4887	4.4887	1.8000e-004	0.0000	4.4924
Total	**3.1600e-003**	**0.0123**	**0.0439**	**1.5000e-004**	**8.2400e-003**	**3.0000e-004**	**8.5400e-003**	**2.2300e-003**	**2.7000e-004**	**2.5000e-003**	**0.0000**	**10.2447**	**10.2447**	**2.2000e-004**	**0.0000**	**10.2493**

3.6 Landscaping - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7200e-003	0.0173	0.0290	4.0000e-005		7.0000e-004	7.0000e-004		6.5000e-004	6.5000e-004	0.0000	3.5594	3.5594	1.1500e-003	0.0000	3.5836
Total	**1.7200e-003**	**0.0173**	**0.0290**	**4.0000e-005**		**7.0000e-004**	**7.0000e-004**		**6.5000e-004**	**6.5000e-004**	**0.0000**	**3.5594**	**3.5594**	**1.1500e-003**	**0.0000**	**3.5836**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.3000e-004	1.2400e-003	1.0000e-005	8.9000e-004	0.0000	8.9000e-004	2.3000e-004	0.0000	2.3000e-004	0.0000	0.3347	0.3347	1.0000e-005	0.0000	0.3350
Total	**9.0000e-005**	**1.3000e-004**	**1.2400e-003**	**1.0000e-005**	**8.9000e-004**	**0.0000**	**8.9000e-004**	**2.3000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**0.3347**	**0.3347**	**1.0000e-005**	**0.0000**	**0.3350**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	1.7200e-003	0.0173	0.0290	4.0000e-005		7.0000e-004	7.0000e-004		6.5000e-004	6.5000e-004	0.0000	3.5594	3.5594	1.1500e-003	0.0000	3.5836
Total	**1.7200e-003**	**0.0173**	**0.0290**	**4.0000e-005**		**7.0000e-004**	**7.0000e-004**		**6.5000e-004**	**6.5000e-004**	**0.0000**	**3.5594**	**3.5594**	**1.1500e-003**	**0.0000**	**3.5836**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.3000e-004	1.2400e-003	1.0000e-005	8.9000e-004	0.0000	8.9000e-004	2.3000e-004	0.0000	2.3000e-004	0.0000	0.3347	0.3347	1.0000e-005	0.0000	0.3350
Total	**9.0000e-005**	**1.3000e-004**	**1.2400e-003**	**1.0000e-005**	**8.9000e-004**	**0.0000**	**8.9000e-004**	**2.3000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**0.3347**	**0.3347**	**1.0000e-005**	**0.0000**	**0.3350**

3.6 Landscaping - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5100e-003	0.0355	0.0593	8.0000e-005		1.4400e-003	1.4400e-003		1.3200e-003	1.3200e-003	0.0000	7.2884	7.2884	2.3600e-003	0.0000	7.3379
Total	**3.5100e-003**	**0.0355**	**0.0593**	**8.0000e-005**		**1.4400e-003**	**1.4400e-003**		**1.3200e-003**	**1.3200e-003**	**0.0000**	**7.2884**	**7.2884**	**2.3600e-003**	**0.0000**	**7.3379**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	2.5000e-004	2.4400e-003	1.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.7000e-004	1.0000e-005	4.7000e-004	0.0000	0.6804	0.6804	3.0000e-005	0.0000	0.6809
Total	**1.8000e-004**	**2.5000e-004**	**2.4400e-003**	**1.0000e-005**	**1.8200e-003**	**1.0000e-005**	**1.8300e-003**	**4.7000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**0.6804**	**0.6804**	**3.0000e-005**	**0.0000**	**0.6809**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5100e-003	0.0355	0.0593	8.0000e-005		1.4400e-003	1.4400e-003		1.3200e-003	1.3200e-003	0.0000	7.2884	7.2884	2.3600e-003	0.0000	7.3379
Total	**3.5100e-003**	**0.0355**	**0.0593**	**8.0000e-005**		**1.4400e-003**	**1.4400e-003**		**1.3200e-003**	**1.3200e-003**	**0.0000**	**7.2884**	**7.2884**	**2.3600e-003**	**0.0000**	**7.3379**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	2.5000e-004	2.4400e-003	1.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.7000e-004	1.0000e-005	4.7000e-004	0.0000	0.6804	0.6804	3.0000e-005	0.0000	0.6809
Total	**1.8000e-004**	**2.5000e-004**	**2.4400e-003**	**1.0000e-005**	**1.8200e-003**	**1.0000e-005**	**1.8300e-003**	**4.7000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**0.6804**	**0.6804**	**3.0000e-005**	**0.0000**	**0.6809**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0700e-003	2.4600e-003	0.0114	4.0000e-005	2.2500e-003	6.0000e-005	2.3100e-003	6.0000e-004	5.0000e-005	6.6000e-004	0.0000	2.3508	2.3508	6.0000e-005	0.0000	2.3521
Unmitigated	1.0700e-003	2.4600e-003	0.0114	4.0000e-005	2.2500e-003	6.0000e-005	2.3100e-003	6.0000e-004	5.0000e-005	6.6000e-004	0.0000	2.3508	2.3508	6.0000e-005	0.0000	2.3521

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.81	2.81	2.81	6,008	6,008
Total	2.81	2.81	2.81	6,008	6,008

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3403	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.3403	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0401					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3002					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

Total	**0.3403**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0401					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3002					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.3403**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.1473	1.0000e-004	2.0000e-005	2.1556
Unmitigated	2.1473	1.0000e-004	2.0000e-005	2.1556

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 2.10892	2.1473	1.0000e-004	2.0000e-005	2.1556
Total		**2.1473**	**1.0000e-004**	**2.0000e-005**	**2.1556**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 2.10892	2.1473	1.0000e-004	2.0000e-005	2.1556
Total		**2.1473**	**1.0000e-004**	**2.0000e-005**	**2.1556**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e

	MT/yr			
Mitigated	0.0305	1.8000e-003	0.0000	0.0682
Unmitigated	0.0305	1.8000e-003	0.0000	0.0682

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.15	0.0305	1.8000e-003	0.0000	0.0682
Total		**0.0305**	**1.8000e-003**	**0.0000**	**0.0682**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.15	0.0305	1.8000e-003	0.0000	0.0682
Total		**0.0305**	**1.8000e-003**	**0.0000**	**0.0682**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	672.6000	0.0000	0.0000	672.6000

10.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	950	672.6000	0.0000	0.0000	672.6000
Total		**672.6000**	**0.0000**	**0.0000**	**672.6000**

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.77	Acre	1.77	76,860.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Con. orted sq. are footage to acres

Sequestration -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	44.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	4.00	21.00
tblConstructionPhase	NumDays	2.00	21.00
tblConstructionPhase	PhaseEndDate	10/30/2028	9/30/2028
tblConstructionPhase	PhaseEndDate	9/29/2028	9/30/2028
tblConstructionPhase	PhaseStartDate	10/1/2028	9/1/2028
tblGrading	AcresOfGrading	21.00	1.77
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	77,101.20	76,860.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00

tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblSequestration	NumberOfNewTrees	0.00	950.00
tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	4.7320	39.4547	38.9266	0.1256	13.1124	1.6016	14.7140	6.5949	1.4735	8.0683	0.0000	11,975.2041	11,975.2041	2.6157	0.0000	12,030.1346
2029	0.1726	1.6620	2.8836	4.4400e-003	0.0881	0.0673	0.1554	0.0226	0.0619	0.0845	0.0000	411.3011	411.3011	0.1222	0.0000	413.8675
Total	**4.9046**	**41.1167**	**41.8102**	**0.1301**	**13.2005**	**1.6689**	**14.8694**	**6.6174**	**1.5354**	**8.1528**	**0.0000**	**12,386.5052**	**12,386.5052**	**2.7380**	**0.0000**	**12,444.0021**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	lb/day										lb/day					
2028	4.7320	39.4547	38.9266	0.1256	13.1124	1.6016	14.7140	6.5949	1.4735	8.0683	0.0000	11,975.2041	11,975.2041	2.6157	0.0000	12,030.1346
2029	0.1726	1.6620	2.8836	4.4400e-003	0.0881	0.0673	0.1554	0.0226	0.0619	0.0845	0.0000	411.3011	411.3011	0.1222	0.0000	413.8675
Total	**4.9046**	**41.1167**	**41.8102**	**0.1301**	**13.2005**	**1.6689**	**14.8694**	**6.6174**	**1.5354**	**8.1528**	**0.0000**	**12,386.5052**	**12,386.5052**	**2.7380**	**0.0000**	**12,444.0021**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.8644	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.9000e-004	3.9000e-004	0.0000		4.1000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	6.0800e-003	0.0128	0.0560	2.0000e-004	0.0128	3.1000e-004	0.0131	3.4400e-003	2.8000e-004	3.7200e-003		14.9324	14.9324	3.7000e-004		14.9402
Total	**1.8705**	**0.0128**	**0.0562**	**2.0000e-004**	**0.0128**	**3.1000e-004**	**0.0131**	**3.4400e-003**	**2.8000e-004**	**3.7200e-003**		**14.9328**	**14.9328**	**3.7000e-004**	**0.0000**	**14.9406**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Area	1.8644	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.9000e-004	3.9000e-004	0.0000		4.1000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	6.0800e-003	0.0128	0.0560	2.0000e-004	0.0128	3.1000e-004	0.0131	3.4400e-003	2.8000e-004	3.7200e-003		14.9324	14.9324	3.7000e-004		14.9402
Total	**1.8705**	**0.0128**	**0.0562**	**2.0000e-004**	**0.0128**	**3.1000e-004**	**0.0131**	**3.4400e-003**	**2.8000e-004**	**3.7200e-003**		**14.9328**	**14.9328**	**3.7000e-004**	**0.0000**	**14.9406**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2028	8/31/2028	5	23	
2	Excavation	Site Preparation	9/1/2028	9/30/2028	5	21	
3	Grading	Grading	9/1/2028	9/30/2028	5	21	
4	Building Construction	Building Construction	10/1/2028	11/30/2028	5	44	
5	Landscaping	Trenching	12/1/2028	2/28/2029	5	64	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.77

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40

Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Excavation	Graders	1	8.00	174	0.41
Excavation	Rubber Tired Dozers	1	7.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	32.00	13.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743		5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**		**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000

Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743	0.0000	5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**	**0.0000**	**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

3.3 Excavation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.2443	11.3855	13.2617	0.0200		0.5340	0.5340		0.4913	0.4913		1,939.7929	1,939.7929	0.6274		1,952.9677
Total	**1.2443**	**11.3855**	**13.2617**	**0.0200**	**5.7996**	**0.5340**	**6.3336**	**2.9537**	**0.4913**	**3.4450**		**1,939.7929**	**1,939.7929**	**0.6274**		**1,952.9677**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7100e-003	6.4800e-003	0.0780	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		22.7397	22.7397	8.4000e-004		22.7572
Total	**5.7100e-003**	**6.4800e-003**	**0.0780**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**		**22.7397**	**22.7397**	**8.4000e-004**		**22.7572**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.2443	11.3855	13.2617	0.0200		0.5340	0.5340		0.4913	0.4913	0.0000	1,939.7929	1,939.7929	0.6274		1,952.9677
Total	**1.2443**	**11.3855**	**13.2617**	**0.0200**	**5.7996**	**0.5340**	**6.3336**	**2.9537**	**0.4913**	**3.4450**	**0.0000**	**1,939.7929**	**1,939.7929**	**0.6274**		**1,952.9677**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7100e-003	6.4800e-003	0.0780	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		22.7397	22.7397	8.4000e-004		22.7572
Total	**5.7100e-003**	**6.4800e-003**	**0.0780**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**		**22.7397**	**22.7397**	**8.4000e-004**		**22.7572**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1609	0.0000	6.1609	3.3274	0.0000	3.3274			0.0000			0.0000
Off-Road	2.6671	22.4755	17.4070	0.0625		0.8972	0.8972		0.8254	0.8254		6,045.8025	6,045.8025	1.9553		6,086.8645
Total	**2.6671**	**22.4755**	**17.4070**	**0.0625**	**6.1609**	**0.8972**	**7.0581**	**3.3274**	**0.8254**	**4.1528**		**6,045.8025**	**6,045.8025**	**1.9553**		**6,086.8645**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7807	5.5484	7.7121	0.0407	0.9539	0.1690	1.1229	0.2613	0.1555	0.4167		3,830.4308	3,830.4308	0.0272		3,831.0018
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434
Total	**0.8150**	**5.5872**	**8.1800**	**0.0428**	**1.1236**	**0.1702**	**1.2938**	**0.3063**	**0.1566**	**0.4629**		**3,966.8690**	**3,966.8690**	**0.0322**		**3,967.5452**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1609	0.0000	6.1609	3.3274	0.0000	3.3274			0.0000			0.0000
Off-Road	2.6671	22.4755	17.4070	0.0625		0.8972	0.8972		0.8254	0.8254	0.0000	6,045.8025	6,045.8025	1.9553		6,086.8645
Total	**2.6671**	**22.4755**	**17.4070**	**0.0625**	**6.1609**	**0.8972**	**7.0581**	**3.3274**	**0.8254**	**4.1528**	**0.0000**	**6,045.8025**	**6,045.8025**	**1.9553**		**6,086.8645**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7807	5.5484	7.7121	0.0407	0.9539	0.1690	1.1229	0.2613	0.1555	0.4167		3,830.4308	3,830.4308	0.0272		3,831.0018
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434
Total	**0.8150**	**5.5872**	**8.1800**	**0.0428**	**1.1236**	**0.1702**	**1.2938**	**0.3063**	**0.1566**	**0.4629**		**3,966.8690**	**3,966.8690**	**0.0322**		**3,967.5452**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810		4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**		**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0818	0.4669	0.9054	3.0800e-003	0.0869	0.0112	0.0981	0.0249	0.0103	0.0352		289.3427	289.3427	2.0500e-003		289.3859
Worker	0.0609	0.0691	0.8317	3.7300e-003	0.3018	2.2000e-003	0.3040	0.0800	2.0400e-003	0.0821		242.5567	242.5567	8.9100e-003		242.7438
Total	**0.1427**	**0.5361**	**1.7371**	**6.8100e-003**	**0.3886**	**0.0134**	**0.4020**	**0.1049**	**0.0124**	**0.1172**		**531.8995**	**531.8995**	**0.0110**		**532.1297**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810	0.0000	4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**	**0.0000**	**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0818	0.4669	0.9054	3.0800e-003	0.0869	0.0112	0.0981	0.0249	0.0103	0.0352		289.3427	289.3427	2.0500e-003		289.3859
Worker	0.0609	0.0691	0.8317	3.7300e-003	0.3018	2.2000e-003	0.3040	0.0800	2.0400e-003	0.0821		242.5567	242.5567	8.9100e-003		242.7438
Total	**0.1427**	**0.5361**	**1.7371**	**6.8100e-003**	**0.3886**	**0.0134**	**0.4020**	**0.1049**	**0.0124**	**0.1172**		**531.8995**	**531.8995**	**0.0110**		**532.1297**

3.6 Landscaping - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616		373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**		**373.6773**	**373.6773**	**0.1209**		**376.2153**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.5100e-003	0.0108	0.1300	5.8000e-004	0.0881	3.4000e-004	0.0885	0.0226	3.2000e-004	0.0229		37.8995	37.8995	1.3900e-003		37.9287
Total	**9.5100e-003**	**0.0108**	**0.1300**	**5.8000e-004**	**0.0881**	**3.4000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**37.8995**	**37.8995**	**1.3900e-003**		**37.9287**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616	0.0000	373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**	**0.0000**	**373.6773**	**373.6773**	**0.1209**		**376.2153**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.5100e-003	0.0108	0.1300	5.8000e-004	0.0881	3.4000e-004	0.0885	0.0226	3.2000e-004	0.0229		37.8995	37.8995	1.3900e-003		37.9287
Total	**9.5100e-003**	**0.0108**	**0.1300**	**5.8000e-004**	**0.0881**	**3.4000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**37.8995**	**37.8995**	**1.3900e-003**		**37.9287**

3.6 Landscaping - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616		373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**		**373.6773**	**373.6773**	**0.1209**		**376.2153**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0881	3.4000e-004	0.0885	0.0226	3.2000e-004	0.0229		37.6237	37.6237	1.3600e-003		37.6522
Total	**9.1300e-003**	**0.0104**	**0.1252**	**5.8000e-004**	**0.0881**	**3.4000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**37.6237**	**37.6237**	**1.3600e-003**		**37.6522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616	0.0000	373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**	**0.0000**	**373.6773**	**373.6773**	**0.1209**		**376.2153**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0881	3.4000e-004	0.0885	0.0226	3.2000e-004	0.0229		37.6237	37.6237	1.3600e-003		37.6522
Total	**9.1300e-003**	**0.0104**	**0.1252**	**5.8000e-004**	**0.0881**	**3.4000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**37.6237**	**37.6237**	**1.3600e-003**		**37.6522**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.0800e-003	0.0128	0.0560	2.0000e-004	0.0128	3.1000e-004	0.0131	3.4400e-003	2.8000e-004	3.7200e-003		14.9324	14.9324	3.7000e-004		14.9402

Unmitigated	6.0800e-003	0.0128	0.0560	2.0000e-004	0.0128	3.1000e-004	0.0131	3.4400e-003	2.8000e-004	3.7200e-003		14.9324	14.9324	3.7000e-004		14.9402

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.81	2.81	2.81	6,008	6,008
Total	2.81	2.81	2.81	6,008	6,008

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.8644	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.9000e-004	3.9000e-004	0.0000		4.1000e-004
Unmitigated	1.8644	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.9000e-004	3.9000e-004	0.0000		4.1000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6448					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.9000e-004	3.9000e-004	0.0000		4.1000e-004
Total	**1.8644**	**0.0000**	**1.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.9000e-004**	**3.9000e-004**	**0.0000**		**4.1000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Architectural Coating	0.2196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6448					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.9000e-004	3.9000e-004	0.0000		4.1000e-004
Total	**1.8644**	**0.0000**	**1.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.9000e-004**	**3.9000e-004**	**0.0000**		**4.1000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	5.30	Acre	5.30	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Con. orted sq. ore footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	44.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	10.00	44.00
tblConstructionPhase	PhaseEndDate	11/1/2028	9/30/2028
tblConstructionPhase	PhaseEndDate	11/1/2028	8/31/2028
tblConstructionPhase	PhaseEndDate	9/29/2028	8/31/2028
tblConstructionPhase	PhaseEndDate	12/29/2028	12/31/2028
tblConstructionPhase	PhaseStartDate	9/1/2028	8/1/2028
tblConstructionPhase	PhaseStartDate	9/1/2028	7/1/2028
tblConstructionPhase	PhaseStartDate	8/1/2028	7/1/2028
tblGrading	AcresOfGrading	44.00	5.30
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	230,868.00	0.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	120.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	20.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.2245	1.9136	2.0456	5.1200e-003	0.5538	0.0791	0.6329	0.2972	0.0731	0.3703	0.0000	451.5710	451.5710	0.1164	0.0000	454.0150
Total	**0.2245**	**1.9136**	**2.0456**	**5.1200e-003**	**0.5538**	**0.0791**	**0.6329**	**0.2972**	**0.0731**	**0.3703**	**0.0000**	**451.5710**	**451.5710**	**0.1164**	**0.0000**	**454.0150**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.2245	1.9136	2.0456	5.1200e-003	0.5538	0.0791	0.6329	0.2972	0.0731	0.3703	0.0000	451.5705	451.5705	0.1164	0.0000	454.0145
Total	**0.2245**	**1.9136**	**2.0456**	**5.1200e-003**	**0.5538**	**0.0791**	**0.6329**	**0.2972**	**0.0731**	**0.3703**	**0.0000**	**451.5705**	**451.5705**	**0.1164**	**0.0000**	**454.0145**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.2000e-003	7.3500e-003	0.0341	1.1000e-004	6.7400e-003	1.7000e-004	6.9000e-003	1.8100e-003	1.5000e-004	1.9700e-003	0.0000	7.0391	7.0391	1.8000e-004	0.0000	7.0430
Waste						0.0000	0.0000		0.0000	0.0000	0.0934	0.0000	0.0934	5.5200e-003	0.0000	0.2093
Water						0.0000	0.0000		0.0000	0.0000	0.0000	6.4297	6.4297	2.9000e-004	6.0000e-005	6.4545
Total	**3.2000e-003**	**7.3500e-003**	**0.0342**	**1.1000e-004**	**6.7400e-003**	**1.7000e-004**	**6.9000e-003**	**1.8100e-003**	**1.5000e-004**	**1.9700e-003**	**0.0934**	**13.4690**	**13.5623**	**5.9900e-003**	**6.0000e-005**	**13.7069**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.2000e-003	7.3500e-003	0.0341	1.1000e-004	6.7400e-003	1.7000e-004	6.9000e-003	1.8100e-003	1.5000e-004	1.9700e-003	0.0000	7.0391	7.0391	1.8000e-004	0.0000	7.0430
Waste						0.0000	0.0000		0.0000	0.0000	0.0934	0.0000	0.0934	5.5200e-003	0.0000	0.2093
Water						0.0000	0.0000		0.0000	0.0000	0.0000	6.4297	6.4297	2.9000e-004	6.0000e-005	6.4545
Total	**3.2000e-003**	**7.3500e-003**	**0.0342**	**1.1000e-004**	**6.7400e-003**	**1.7000e-004**	**6.9000e-003**	**1.8100e-003**	**1.5000e-004**	**1.9700e-003**	**0.0934**	**13.4690**	**13.5623**	**5.9900e-003**	**6.0000e-005**	**13.7069**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2028	7/31/2028	5	43	
2	Excavation	Site Preparation	7/1/2028	8/31/2028	5	44	
3	Grading	Grading	7/1/2028	8/31/2028	5	44	
4	Building Construction	Building Construction	8/1/2028	9/30/2028	5	44	
5	Landscaping	Trenching	10/1/2028	12/31/2028	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5.3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Excavation	Rubber Tired Dozers	3	8.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	8	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0613	0.5363	0.5665	1.2700e-003		0.0228	0.0228		0.0210	0.0210	0.0000	111.4365	111.4365	0.0360	0.0000	112.1934
Total	**0.0613**	**0.5363**	**0.5665**	**1.2700e-003**	**0.0000**	**0.0228**	**0.0228**	**0.0000**	**0.0210**	**0.0210**	**0.0000**	**111.4365**	**111.4365**	**0.0360**	**0.0000**	**112.1934**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	1.0500e-003	0.0101	5.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	2.7417	2.7417	1.1000e-004	0.0000	2.7440
Total	**7.4000e-004**	**1.0500e-003**	**0.0101**	**5.0000e-005**	**3.9000e-003**	**3.0000e-005**	**3.9300e-003**	**1.0400e-003**	**3.0000e-005**	**1.0700e-003**	**0.0000**	**2.7417**	**2.7417**	**1.1000e-004**	**0.0000**	**2.7440**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0613	0.5363	0.5665	1.2700e-003		0.0228	0.0228		0.0210	0.0210	0.0000	111.4364	111.4364	0.0360	0.0000	112.1933
Total	**0.0613**	**0.5363**	**0.5665**	**1.2700e-003**	**0.0000**	**0.0228**	**0.0228**	**0.0000**	**0.0210**	**0.0210**	**0.0000**	**111.4364**	**111.4364**	**0.0360**	**0.0000**	**112.1933**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	1.0500e-003	0.0101	5.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	2.7417	2.7417	1.1000e-004	0.0000	2.7440
Total	**7.4000e-004**	**1.0500e-003**	**0.0101**	**5.0000e-005**	**3.9000e-003**	**3.0000e-005**	**3.9300e-003**	**1.0400e-003**	**3.0000e-005**	**1.0700e-003**	**0.0000**	**2.7417**	**2.7417**	**1.1000e-004**	**0.0000**	**2.7440**

3.3 Excavation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3975	0.0000	0.3975	0.2185	0.0000	0.2185	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0578	0.5452	0.5932	9.3000e-004		0.0238	0.0238		0.0219	0.0219	0.0000	81.3365	81.3365	0.0263	0.0000	81.8889
Total	**0.0578**	**0.5452**	**0.5932**	**9.3000e-004**	**0.3975**	**0.0238**	**0.4212**	**0.2185**	**0.0219**	**0.2404**	**0.0000**	**81.3365**	**81.3365**	**0.0263**	**0.0000**	**81.8889**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.6000e-004	1.5600e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4208	0.4208	2.0000e-005	0.0000	0.4212
Total	**1.1000e-004**	**1.6000e-004**	**1.5600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4208**	**0.4208**	**2.0000e-005**	**0.0000**	**0.4212**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3975	0.0000	0.3975	0.2185	0.0000	0.2185	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0578	0.5452	0.5932	9.3000e-004		0.0238	0.0238		0.0219	0.0219	0.0000	81.3364	81.3364	0.0263	0.0000	81.8888
Total	**0.0578**	**0.5452**	**0.5932**	**9.3000e-004**	**0.3975**	**0.0238**	**0.4212**	**0.2185**	**0.0219**	**0.2404**	**0.0000**	**81.3364**	**81.3364**	**0.0263**	**0.0000**	**81.8888**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.6000e-004	1.5600e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4208	0.4208	2.0000e-005	0.0000	0.4212
Total	**1.1000e-004**	**1.6000e-004**	**1.5600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4208**	**0.4208**	**2.0000e-005**	**0.0000**	**0.4212**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1358	0.0000	0.1358	0.0732	0.0000	0.0732	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0587	0.4945	0.3830	1.3700e-003		0.0197	0.0197		0.0182	0.0182	0.0000	120.6625	120.6625	0.0390	0.0000	121.4820
Total	**0.0587**	**0.4945**	**0.3830**	**1.3700e-003**	**0.1358**	**0.0197**	**0.1556**	**0.0732**	**0.0182**	**0.0914**	**0.0000**	**120.6625**	**120.6625**	**0.0390**	**0.0000**	**121.4820**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0604	0.1056	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4506	36.4506	2.6000e-004	0.0000	36.4560

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	9.7000e-004	9.3300e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5249	2.5249	1.0000e-004	0.0000	2.5270
Total	**9.2800e-003**	**0.0614**	**0.1149**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9754**	**38.9754**	**3.6000e-004**	**0.0000**	**38.9830**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1358	0.0000	0.1358	0.0732	0.0000	0.0732	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0587	0.4945	0.3830	1.3700e-003		0.0197	0.0197		0.0182	0.0182	0.0000	120.6624	120.6624	0.0390	0.0000	121.4819
Total	**0.0587**	**0.4945**	**0.3830**	**1.3700e-003**	**0.1358**	**0.0197**	**0.1556**	**0.0732**	**0.0182**	**0.0914**	**0.0000**	**120.6624**	**120.6624**	**0.0390**	**0.0000**	**121.4819**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0604	0.1056	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4506	36.4506	2.6000e-004	0.0000	36.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	9.7000e-004	9.3300e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5249	2.5249	1.0000e-004	0.0000	2.5270
Total	**9.2800e-003**	**0.0614**	**0.1149**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9754**	**38.9754**	**3.6000e-004**	**0.0000**	**38.9830**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0309	0.2210	0.2829	8.8000e-004		8.8000e-003	8.8000e-003		8.3800e-003	8.3800e-003	0.0000	83.9442	83.9442	0.0109	0.0000	84.1735
Total	**0.0309**	**0.2210**	**0.2829**	**8.8000e-004**		**8.8000e-003**	**8.8000e-003**		**8.3800e-003**	**8.3800e-003**	**0.0000**	**83.9442**	**83.9442**	**0.0109**	**0.0000**	**84.1735**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.0309	0.2210	0.2829	8.8000e-004		8.8000e-003	8.8000e-003		8.3800e-003	8.3800e-003	0.0000	83.9441	83.9441	0.0109	0.0000	84.1734
Total	**0.0309**	**0.2210**	**0.2829**	**8.8000e-004**		**8.8000e-003**	**8.8000e-003**		**8.3800e-003**	**8.3800e-003**	**0.0000**	**83.9441**	**83.9441**	**0.0109**	**0.0000**	**84.1734**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Landscaping - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3100e-003	0.0537	0.0897	1.3000e-004		2.1800e-003	2.1800e-003		2.0000e-003	2.0000e-003	0.0000	11.0173	11.0173	3.5600e-003	0.0000	11.0922
Total	**5.3100e-003**	**0.0537**	**0.0897**	**1.3000e-004**		**2.1800e-003**	**2.1800e-003**		**2.0000e-003**	**2.0000e-003**	**0.0000**	**11.0173**	**11.0173**	**3.5600e-003**	**0.0000**	**11.0922**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	4.0000e-004	3.8300e-003	2.0000e-005	2.7500e-003	1.0000e-005	2.7600e-003	7.1000e-004	1.0000e-005	7.2000e-004	0.0000	1.0361	1.0361	4.0000e-005	0.0000	1.0370
Total	**2.8000e-004**	**4.0000e-004**	**3.8300e-003**	**2.0000e-005**	**2.7500e-003**	**1.0000e-005**	**2.7600e-003**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**1.0361**	**1.0361**	**4.0000e-005**	**0.0000**	**1.0370**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3100e-003	0.0537	0.0897	1.3000e-004		2.1800e-003	2.1800e-003		2.0000e-003	2.0000e-003	0.0000	11.0173	11.0173	3.5600e-003	0.0000	11.0921
Total	**5.3100e-003**	**0.0537**	**0.0897**	**1.3000e-004**		**2.1800e-003**	**2.1800e-003**		**2.0000e-003**	**2.0000e-003**	**0.0000**	**11.0173**	**11.0173**	**3.5600e-003**	**0.0000**	**11.0921**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	4.0000e-004	3.8300e-003	2.0000e-005	2.7500e-003	1.0000e-005	2.7600e-003	7.1000e-004	1.0000e-005	7.2000e-004	0.0000	1.0361	1.0361	4.0000e-005	0.0000	1.0370
Total	**2.8000e-004**	**4.0000e-004**	**3.8300e-003**	**2.0000e-005**	**2.7500e-003**	**1.0000e-005**	**2.7600e-003**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**1.0361**	**1.0361**	**4.0000e-005**	**0.0000**	**1.0370**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.2000e-003	7.3500e-003	0.0341	1.1000e-004	6.7400e-003	1.7000e-004	6.9000e-003	1.8100e-003	1.5000e-004	1.9700e-003	0.0000	7.0391	7.0391	1.8000e-004	0.0000	7.0430
Unmitigated	3.2000e-003	7.3500e-003	0.0341	1.1000e-004	6.7400e-003	1.7000e-004	6.9000e-003	1.8100e-003	1.5000e-004	1.9700e-003	0.0000	7.0391	7.0391	1.8000e-004	0.0000	7.0430

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	8.43	8.43	8.43	17,990	17,990
Total	8.43	8.43	8.43	17,990	17,990

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Unmitigated	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004

Total	**0.0000**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**1.0000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Total	**0.0000**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**1.0000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	6.4297	2.9000e-004	6.0000e-005	6.4545
Unmitigated	6.4297	2.9000e-004	6.0000e-005	6.4545

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 6.31485	6.4297	2.9000e-004	6.0000e-005	6.4545
Total		**6.4297**	**2.9000e-004**	**6.0000e-005**	**6.4545**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 6.31485	6.4297	2.9000e-004	6.0000e-005	6.4545
Total		**6.4297**	**2.9000e-004**	**6.0000e-005**	**6.4545**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e

	MT/yr			
Mitigated	0.0934	5.5200e-003	0.0000	0.2093
Unmitigated	0.0934	5.5200e-003	0.0000	0.2093

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.46	0.0934	5.5200e-003	0.0000	0.2093
Total		**0.0934**	**5.5200e-003**	**0.0000**	**0.2093**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.46	0.0934	5.5200e-003	0.0000	0.2093
Total		**0.0934**	**5.5200e-003**	**0.0000**	**0.2093**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	5.30	Acre	5.30	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Con. orted sq. ore footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	44.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	10.00	44.00
tblConstructionPhase	PhaseEndDate	11/1/2028	9/30/2028
tblConstructionPhase	PhaseEndDate	11/1/2028	8/31/2028
tblConstructionPhase	PhaseEndDate	9/29/2028	8/31/2028
tblConstructionPhase	PhaseEndDate	12/29/2028	12/31/2028
tblConstructionPhase	PhaseStartDate	9/1/2028	8/1/2028
tblConstructionPhase	PhaseStartDate	9/1/2028	7/1/2028
tblConstructionPhase	PhaseStartDate	8/1/2028	7/1/2028
tblGrading	AcresOfGrading	44.00	5.30
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	230,868.00	0.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	120.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	20.00	3.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	8.6000	74.9369	75.4631	0.1878	25.0816	3.1203	28.2019	13.4855	2.8707	16.3562	0.0000	17,973.4909	17,973.4909	5.1456	0.0000	18,081.5487
Total	**8.6000**	**74.9369**	**75.4631**	**0.1878**	**25.0816**	**3.1203**	**28.2019**	**13.4855**	**2.8707**	**16.3562**	**0.0000**	**17,973.4909**	**17,973.4909**	**5.1456**	**0.0000**	**18,081.5487**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	8.6000	74.9369	75.4631	0.1878	25.0816	3.1203	28.2019	13.4855	2.8707	16.3562	0.0000	17,973.4909	17,973.4909	5.1456	0.0000	18,081.5487
Total	**8.6000**	**74.9369**	**75.4631**	**0.1878**	**25.0816**	**3.1203**	**28.2019**	**13.4855**	**2.8707**	**16.3562**	**0.0000**	**17,973.4909**	**17,973.4909**	**5.1456**	**0.0000**	**18,081.5487**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.0000e-005	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0182	0.0383	0.1677	6.1000e-004	0.0384	9.2000e-004	0.0394	0.0103	8.5000e-004	0.0111		44.7128	44.7128	1.1200e-003		44.7363
Total	**0.0182**	**0.0383**	**0.1682**	**6.1000e-004**	**0.0384**	**9.2000e-004**	**0.0394**	**0.0103**	**8.5000e-004**	**0.0111**		**44.7139**	**44.7139**	**1.1200e-003**	**0.0000**	**44.7375**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Area	5.0000e-005	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0182	0.0383	0.1677	6.1000e-004	0.0384	9.2000e-004	0.0394	0.0103	8.5000e-004	0.0111		44.7128	44.7128	1.1200e-003		44.7363
Total	**0.0182**	**0.0383**	**0.1682**	**6.1000e-004**	**0.0384**	**9.2000e-004**	**0.0394**	**0.0103**	**8.5000e-004**	**0.0111**		**44.7139**	**44.7139**	**1.1200e-003**	**0.0000**	**44.7375**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2028	7/31/2028	5	43	
2	Excavation	Site Preparation	7/1/2028	8/31/2028	5	44	
3	Grading	Grading	7/1/2028	8/31/2028	5	44	
4	Building Construction	Building Construction	8/1/2028	9/30/2028	5	44	
5	Landscaping	Trenching	10/1/2028	12/31/2028	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5.3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73

Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Excavation	Rubber Tired Dozers	3	8.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	8	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743		5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**		**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000

Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743	0.0000	5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**	**0.0000**	**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

3.3 Excavation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6293	24.7818	26.9621	0.0421		1.0807	1.0807		0.9943	0.9943		4,075.3693	4,075.3693	1.3181		4,103.0485
Total	**2.6293**	**24.7818**	**26.9621**	**0.0421**	**18.0663**	**1.0807**	**19.1470**	**9.9307**	**0.9943**	**10.9250**		**4,075.3693**	**4,075.3693**	**1.3181**		**4,103.0485**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7100e-003	6.4800e-003	0.0780	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		22.7397	22.7397	8.4000e-004		22.7572
Total	**5.7100e-003**	**6.4800e-003**	**0.0780**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**		**22.7397**	**22.7397**	**8.4000e-004**		**22.7572**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6293	24.7818	26.9621	0.0421		1.0807	1.0807		0.9943	0.9943	0.0000	4,075.3693	4,075.3693	1.3181		4,103.0485
Total	**2.6293**	**24.7818**	**26.9621**	**0.0421**	**18.0663**	**1.0807**	**19.1470**	**9.9307**	**0.9943**	**10.9250**	**0.0000**	**4,075.3693**	**4,075.3693**	**1.3181**		**4,103.0485**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7100e-003	6.4800e-003	0.0780	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		22.7397	22.7397	8.4000e-004		22.7572
Total	**5.7100e-003**	**6.4800e-003**	**0.0780**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**		**22.7397**	**22.7397**	**8.4000e-004**		**22.7572**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1734	0.0000	6.1734	3.3276	0.0000	3.3276			0.0000			0.0000
Off-Road	2.6671	22.4755	17.4070	0.0625		0.8972	0.8972		0.8254	0.8254		6,045.8025	6,045.8025	1.9553		6,086.8645
Total	**2.6671**	**22.4755**	**17.4070**	**0.0625**	**6.1734**	**0.8972**	**7.0706**	**3.3276**	**0.8254**	**4.1530**		**6,045.8025**	**6,045.8025**	**1.9553**		**6,086.8645**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3726	2.6481	3.6808	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1602	1,828.1602	0.0130		1,828.4327
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434
Total	**0.4069**	**2.6870**	**4.1486**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,964.5983**	**1,964.5983**	**0.0180**		**1,964.9761**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1734	0.0000	6.1734	3.3276	0.0000	3.3276			0.0000			0.0000
Off-Road	2.6671	22.4755	17.4070	0.0625		0.8972	0.8972		0.8254	0.8254	0.0000	6,045.8025	6,045.8025	1.9553		6,086.8645
Total	**2.6671**	**22.4755**	**17.4070**	**0.0625**	**6.1734**	**0.8972**	**7.0706**	**3.3276**	**0.8254**	**4.1530**	**0.0000**	**6,045.8025**	**6,045.8025**	**1.9553**		**6,086.8645**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3726	2.6481	3.6808	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1602	1,828.1602	0.0130		1,828.4327
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434
Total	**0.4069**	**2.6870**	**4.1486**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,964.5983**	**1,964.5983**	**0.0180**		**1,964.9761**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810		4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**		**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810	0.0000	4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**	**0.0000**	**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Landscaping - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616		373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**		**373.6773**	**373.6773**	**0.1209**		**376.2153**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.5100e-003	0.0108	0.1300	5.8000e-004	0.0881	3.4000e-004	0.0885	0.0226	3.2000e-004	0.0229		37.8995	37.8995	1.3900e-003		37.9287
Total	**9.5100e-003**	**0.0108**	**0.1300**	**5.8000e-004**	**0.0881**	**3.4000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**37.8995**	**37.8995**	**1.3900e-003**		**37.9287**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616	0.0000	373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**	**0.0000**	**373.6773**	**373.6773**	**0.1209**		**376.2153**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.5100e-003	0.0108	0.1300	5.8000e-004	0.0881	3.4000e-004	0.0885	0.0226	3.2000e-004	0.0229		37.8995	37.8995	1.3900e-003		37.9287
Total	**9.5100e-003**	**0.0108**	**0.1300**	**5.8000e-004**	**0.0881**	**3.4000e-004**	**0.0885**	**0.0226**	**3.2000e-004**	**0.0229**		**37.8995**	**37.8995**	**1.3900e-003**		**37.9287**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0182	0.0383	0.1677	6.1000e-004	0.0384	9.2000e-004	0.0394	0.0103	8.5000e-004	0.0111		44.7128	44.7128	1.1200e-003		44.7363
Unmitigated	0.0182	0.0383	0.1677	6.1000e-004	0.0384	9.2000e-004	0.0394	0.0103	8.5000e-004	0.0111		44.7128	44.7128	1.1200e-003		44.7363

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	8.43	8.43	8.43	17,990	17,990
Total	8.43	8.43	8.43	17,990	17,990

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.0000e-005	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2200e-003
Unmitigated	5.0000e-005	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2200e-003

Total	**5.0000e-005**	**0.0000**	**5.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.1600e-003**	**1.1600e-003**	**0.0000**		**1.2200e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2200e-003
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**5.0000e-005**	**0.0000**	**5.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.1600e-003**	**1.1600e-003**	**0.0000**		**1.2200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.45	Acre	1.45	63,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Con. orted sq. ore footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	43.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	PhaseEndDate	7/31/2029	10/31/2029
tblConstructionPhase	PhaseEndDate	3/30/2029	3/31/2029
tblConstructionPhase	PhaseEndDate	8/1/2029	5/31/2029
tblConstructionPhase	PhaseStartDate	6/1/2029	9/1/2029
tblConstructionPhase	PhaseStartDate	6/1/2029	4/1/2029
tblGrading	AcresOfGrading	44.00	1.45
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	63,162.00	63,000.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00

tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					

2029	0.1853	1.5551	1.6918	4.5900e-003	0.2866	0.0644	0.3510	0.1448	0.0595	0.2043	0.0000	403.5175	403.5175	0.0989	0.0000	405.5951
Total	**0.1853**	**1.5551**	**1.6918**	**4.5900e-003**	**0.2866**	**0.0644**	**0.3510**	**0.1448**	**0.0595**	**0.2043**	**0.0000**	**403.5175**	**403.5175**	**0.0989**	**0.0000**	**405.5951**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2029	0.1853	1.5551	1.6918	4.5900e-003	0.2866	0.0644	0.3510	0.1448	0.0595	0.2043	0.0000	403.5171	403.5171	0.0989	0.0000	405.5946
Total	**0.1853**	**1.5551**	**1.6918**	**4.5900e-003**	**0.2866**	**0.0644**	**0.3510**	**0.1448**	**0.0595**	**0.2043**	**0.0000**	**403.5171**	**403.5171**	**0.0989**	**0.0000**	**405.5946**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2789	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mobile	8.8000e-004	2.0100e-003	9.3400e-003	3.0000e-005	1.8400e-003	5.0000e-005	1.8900e-003	5.0000e-004	4.0000e-005	5.4000e-004	0.0000	1.9258	1.9258	5.0000e-005	0.0000	1.9269
Waste						0.0000	0.0000		0.0000	0.0000	0.0244	0.0000	0.0244	1.4400e-003	0.0000	0.0546
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.7591	1.7591	8.0000e-005	2.0000e-005	1.7659
Total	**0.2798**	**2.0100e-003**	**9.3500e-003**	**3.0000e-005**	**1.8400e-003**	**5.0000e-005**	**1.8900e-003**	**5.0000e-004**	**4.0000e-005**	**5.4000e-004**	**0.0244**	**3.6849**	**3.7093**	**1.5700e-003**	**2.0000e-005**	**3.7473**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2789	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	8.8000e-004	2.0100e-003	9.3400e-003	3.0000e-005	1.8400e-003	5.0000e-005	1.8900e-003	5.0000e-004	4.0000e-005	5.4000e-004	0.0000	1.9258	1.9258	5.0000e-005	0.0000	1.9269
Waste						0.0000	0.0000		0.0000	0.0000	0.0244	0.0000	0.0244	1.4400e-003	0.0000	0.0546
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.7591	1.7591	8.0000e-005	2.0000e-005	1.7659
Total	**0.2798**	**2.0100e-003**	**9.3500e-003**	**3.0000e-005**	**1.8400e-003**	**5.0000e-005**	**1.8900e-003**	**5.0000e-004**	**4.0000e-005**	**5.4000e-004**	**0.0244**	**3.6849**	**3.7093**	**1.5700e-003**	**2.0000e-005**	**3.7473**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description

1	Demolition	Demolition	3/1/2029	3/31/2029	5	22	
2	Excavation	Site Preparation	4/1/2029	5/31/2029	5	44	
3	Grading	Grading	4/1/2029	5/31/2029	5	44	
4	Building Construction	Building Construction	9/1/2029	10/31/2029	5	43	
5	Paving	Paving	11/1/2029	12/31/2029	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.45

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36

Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Excavation	Graders	1	8.00	174	0.41
Excavation	Rubber Tired Dozers	1	7.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	26.00	10.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0314	0.2744	0.2898	6.5000e-004		0.0117	0.0117		0.0107	0.0107	0.0000	57.0140	57.0140	0.0184	0.0000	57.4013
Total	**0.0314**	**0.2744**	**0.2898**	**6.5000e-004**	**0.0000**	**0.0117**	**0.0117**	**0.0000**	**0.0107**	**0.0107**	**0.0000**	**57.0140**	**57.0140**	**0.0184**	**0.0000**	**57.4013**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	5.1000e-004	4.9900e-003	2.0000e-005	2.0000e-003	2.0000e-005	2.0100e-003	5.3000e-004	1.0000e-005	5.5000e-004	0.0000	1.3924	1.3924	5.0000e-005	0.0000	1.3935
Total	**3.7000e-004**	**5.1000e-004**	**4.9900e-003**	**2.0000e-005**	**2.0000e-003**	**2.0000e-005**	**2.0100e-003**	**5.3000e-004**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**1.3924**	**1.3924**	**5.0000e-005**	**0.0000**	**1.3935**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0314	0.2744	0.2898	6.5000e-004		0.0117	0.0117		0.0107	0.0107	0.0000	57.0140	57.0140	0.0184	0.0000	57.4012
Total	**0.0314**	**0.2744**	**0.2898**	**6.5000e-004**	**0.0000**	**0.0117**	**0.0117**	**0.0000**	**0.0107**	**0.0107**	**0.0000**	**57.0140**	**57.0140**	**0.0184**	**0.0000**	**57.4012**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	5.1000e-004	4.9900e-003	2.0000e-005	2.0000e-003	2.0000e-005	2.0100e-003	5.3000e-004	1.0000e-005	5.5000e-004	0.0000	1.3924	1.3924	5.0000e-005	0.0000	1.3935
Total	**3.7000e-004**	**5.1000e-004**	**4.9900e-003**	**2.0000e-005**	**2.0000e-003**	**2.0000e-005**	**2.0100e-003**	**5.3000e-004**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**1.3924**	**1.3924**	**5.0000e-005**	**0.0000**	**1.3935**

3.3 Excavation - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1276	0.0000	0.1276	0.0650	0.0000	0.0650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0274	0.2505	0.2918	4.4000e-004		0.0118	0.0118		0.0108	0.0108	0.0000	38.7145	38.7145	0.0125	0.0000	38.9775
Total	**0.0274**	**0.2505**	**0.2918**	**4.4000e-004**	**0.1276**	**0.0118**	**0.1393**	**0.0650**	**0.0108**	**0.0758**	**0.0000**	**38.7145**	**38.7145**	**0.0125**	**0.0000**	**38.9775**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.5000e-004	1.5000e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4177	0.4177	2.0000e-005	0.0000	0.4181
Total	**1.1000e-004**	**1.5000e-004**	**1.5000e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4177**	**0.4177**	**2.0000e-005**	**0.0000**	**0.4181**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1276	0.0000	0.1276	0.0650	0.0000	0.0650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0274	0.2505	0.2918	4.4000e-004		0.0118	0.0118		0.0108	0.0108	0.0000	38.7145	38.7145	0.0125	0.0000	38.9774
Total	**0.0274**	**0.2505**	**0.2918**	**4.4000e-004**	**0.1276**	**0.0118**	**0.1393**	**0.0650**	**0.0108**	**0.0758**	**0.0000**	**38.7145**	**38.7145**	**0.0125**	**0.0000**	**38.9774**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.5000e-004	1.5000e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4177	0.4177	2.0000e-005	0.0000	0.4181
Total	**1.1000e-004**	**1.5000e-004**	**1.5000e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4177**	**0.4177**	**2.0000e-005**	**0.0000**	**0.4181**

3.4 Grading - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.1338	0.0000	0.1338	0.0730	0.0000	0.0730	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0587	0.4945	0.3830	1.3700e-003		0.0197	0.0197		0.0182	0.0182	0.0000	120.6625	120.6625	0.0390	0.0000	121.4820
Total	**0.0587**	**0.4945**	**0.3830**	**1.3700e-003**	**0.1338**	**0.0197**	**0.1535**	**0.0730**	**0.0182**	**0.0912**	**0.0000**	**120.6625**	**120.6625**	**0.0390**	**0.0000**	**121.4820**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5000e-003	0.0601	0.1045	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4499	36.4499	2.6000e-004	0.0000	36.4554
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	9.3000e-004	8.9800e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5063	2.5063	1.0000e-004	0.0000	2.5084
Total	**9.1600e-003**	**0.0611**	**0.1135**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9562**	**38.9562**	**3.6000e-004**	**0.0000**	**38.9637**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1338	0.0000	0.1338	0.0730	0.0000	0.0730	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0587	0.4945	0.3830	1.3700e-003		0.0197	0.0197		0.0182	0.0182	0.0000	120.6624	120.6624	0.0390	0.0000	121.4819
Total	**0.0587**	**0.4945**	**0.3830**	**1.3700e-003**	**0.1338**	**0.0197**	**0.1535**	**0.0730**	**0.0182**	**0.0912**	**0.0000**	**120.6624**	**120.6624**	**0.0390**	**0.0000**	**121.4819**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5000e-003	0.0601	0.1045	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4499	36.4499	2.6000e-004	0.0000	36.4554
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	9.3000e-004	8.9800e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5063	2.5063	1.0000e-004	0.0000	2.5084
Total	**9.1600e-003**	**0.0611**	**0.1135**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9562**	**38.9562**	**3.6000e-004**	**0.0000**	**38.9637**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0302	0.2160	0.2765	8.6000e-004		8.6000e-003	8.6000e-003		8.1900e-003	8.1900e-003	0.0000	82.0363	82.0363	0.0107	0.0000	82.2604
Total	**0.0302**	**0.2160**	**0.2765**	**8.6000e-004**		**8.6000e-003**	**8.6000e-003**		**8.1900e-003**	**8.1900e-003**	**0.0000**	**82.0363**	**82.0363**	**0.0107**	**0.0000**	**82.2604**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4300e-003	7.9200e-003	0.0202	5.0000e-005	1.3900e-003	1.9000e-004	1.5800e-003	4.0000e-004	1.7000e-004	5.7000e-004	0.0000	4.3276	4.3276	3.0000e-005	0.0000	4.3283
Worker	9.3000e-004	1.3100e-003	0.0127	6.0000e-005	5.0700e-003	4.0000e-005	5.1100e-003	1.3500e-003	4.0000e-005	1.3900e-003	0.0000	3.5380	3.5380	1.4000e-004	0.0000	3.5408
Total	**2.3600e-003**	**9.2300e-003**	**0.0329**	**1.1000e-004**	**6.4600e-003**	**2.3000e-004**	**6.6900e-003**	**1.7500e-003**	**2.1000e-004**	**1.9600e-003**	**0.0000**	**7.8656**	**7.8656**	**1.7000e-004**	**0.0000**	**7.8691**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0302	0.2160	0.2765	8.6000e-004		8.6000e-003	8.6000e-003		8.1900e-003	8.1900e-003	0.0000	82.0362	82.0362	0.0107	0.0000	82.2603
Total	**0.0302**	**0.2160**	**0.2765**	**8.6000e-004**		**8.6000e-003**	**8.6000e-003**		**8.1900e-003**	**8.1900e-003**	**0.0000**	**82.0362**	**82.0362**	**0.0107**	**0.0000**	**82.2603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4300e-003	7.9200e-003	0.0202	5.0000e-005	1.3900e-003	1.9000e-004	1.5800e-003	4.0000e-004	1.7000e-004	5.7000e-004	0.0000	4.3276	4.3276	3.0000e-005	0.0000	4.3283
Worker	9.3000e-004	1.3100e-003	0.0127	6.0000e-005	5.0700e-003	4.0000e-005	5.1100e-003	1.3500e-003	4.0000e-005	1.3900e-003	0.0000	3.5380	3.5380	1.4000e-004	0.0000	3.5408
Total	**2.3600e-003**	**9.2300e-003**	**0.0329**	**1.1000e-004**	**6.4600e-003**	**2.3000e-004**	**6.6900e-003**	**1.7500e-003**	**2.1000e-004**	**1.9600e-003**	**0.0000**	**7.8656**	**7.8656**	**1.7000e-004**	**0.0000**	**7.8691**

3.6 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0252	0.2481	0.2906	6.2000e-004		0.0106	0.0106		9.7400e-003	9.7400e-003	0.0000	54.4170	54.4170	0.0176	0.0000	54.7866
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0252**	**0.2481**	**0.2906**	**6.2000e-004**		**0.0106**	**0.0106**		**9.7400e-003**	**9.7400e-003**	**0.0000**	**54.4170**	**54.4170**	**0.0176**	**0.0000**	**54.7866**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.4000e-004	7.5000e-004	7.3100e-003	3.0000e-005	2.9300e-003	2.0000e-005	2.9500e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.0411	2.0411	8.0000e-005	0.0000	2.0428
Total	**5.4000e-004**	**7.5000e-004**	**7.3100e-003**	**3.0000e-005**	**2.9300e-003**	**2.0000e-005**	**2.9500e-003**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**0.0000**	**2.0411**	**2.0411**	**8.0000e-005**	**0.0000**	**2.0428**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	0.0252	0.2481	0.2906	6.2000e-004		0.0106	0.0106		9.7400e-003	9.7400e-003	0.0000	54.4170	54.4170	0.0176	0.0000	54.7866
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0252**	**0.2481**	**0.2906**	**6.2000e-004**		**0.0106**	**0.0106**		**9.7400e-003**	**9.7400e-003**	**0.0000**	**54.4170**	**54.4170**	**0.0176**	**0.0000**	**54.7866**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.4000e-004	7.5000e-004	7.3100e-003	3.0000e-005	2.9300e-003	2.0000e-005	2.9500e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.0411	2.0411	8.0000e-005	0.0000	2.0428
Total	**5.4000e-004**	**7.5000e-004**	**7.3100e-003**	**3.0000e-005**	**2.9300e-003**	**2.0000e-005**	**2.9500e-003**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**0.0000**	**2.0411**	**2.0411**	**8.0000e-005**	**0.0000**	**2.0428**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.8000e-004	2.0100e-003	9.3400e-003	3.0000e-005	1.8400e-003	5.0000e-005	1.8900e-003	5.0000e-004	4.0000e-005	5.4000e-004	0.0000	1.9258	1.9258	5.0000e-005	0.0000	1.9269

Unmitigated	8.8000e-004	2.0100e-003	9.3400e-003	3.0000e-005	1.8400e-003	5.0000e-005	1.8900e-003	5.0000e-004	4.0000e-005	5.4000e-004	0.0000	1.9258	1.9258	5.0000e-005	0.0000	1.9269

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.31	2.31	2.31	4,922	4,922
Total	2.31	2.31	2.31	4,922	4,922

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Mitigated	0.2789	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.2789	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0329					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2461					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.2789**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0329					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2461					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.2789**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.7591	8.0000e-005	2.0000e-005	1.7659
Unmitigated	1.7591	8.0000e-005	2.0000e-005	1.7659

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.72765	1.7591	8.0000e-005	2.0000e-005	1.7659
Total		**1.7591**	**8.0000e-005**	**2.0000e-005**	**1.7659**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
City Park	0 / 1.72765	1.7591	8.0000e-005	2.0000e-005	1.7659
Total		**1.7591**	**8.0000e-005**	**2.0000e-005**	**1.7659**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0244	1.4400e-003	0.0000	0.0546
Unmitigated	0.0244	1.4400e-003	0.0000	0.0546

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.12	0.0244	1.4400e-003	0.0000	0.0546
Total		**0.0244**	**1.4400e-003**	**0.0000**	**0.0546**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.12	0.0244	1.4400e-003	0.0000	0.0546
Total		**0.0244**	**1.4400e-003**	**0.0000**	**0.0546**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.45	Acre	1.45	63,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Con. orted sq. ore footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	43.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	PhaseEndDate	7/31/2029	10/31/2029
tblConstructionPhase	PhaseEndDate	3/30/2029	3/31/2029
tblConstructionPhase	PhaseEndDate	8/1/2029	5/31/2029
tblConstructionPhase	PhaseStartDate	6/1/2029	9/1/2029
tblConstructionPhase	PhaseStartDate	6/1/2029	4/1/2029
tblGrading	AcresOfGrading	44.00	1.45
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	63,162.00	63,000.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00

tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					

2029	4.3195	36.5412	34.8493	0.1044	12.5335	1.5133	14.0468	6.4485	1.3922	7.8407	0.0000	9,971.7432	9,971.7432	2.6014	0.0000	10,026.3721
Total	**4.3195**	**36.5412**	**34.8493**	**0.1044**	**12.5335**	**1.5133**	**14.0468**	**6.4485**	**1.3922**	**7.8407**	**0.0000**	**9,971.7432**	**9,971.7432**	**2.6014**	**0.0000**	**10,026.3721**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2029	4.3195	36.5412	34.8493	0.1044	12.5335	1.5133	14.0468	6.4485	1.3922	7.8407	0.0000	9,971.7432	9,971.7432	2.6014	0.0000	10,026.3721
Total	**4.3195**	**36.5412**	**34.8493**	**0.1044**	**12.5335**	**1.5133**	**14.0468**	**6.4485**	**1.3922**	**7.8407**	**0.0000**	**9,971.7432**	**9,971.7432**	**2.6014**	**0.0000**	**10,026.3721**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.5282	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.2000e-004	3.2000e-004	0.0000		3.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mobile	4.9800e-003	0.0105	0.0459	1.7000e-004	0.0105	2.5000e-004	0.0108	2.8200e-003	2.3000e-004	3.0500e-003		12.2327	12.2327	3.1000e-004		12.2392
Total	**1.5332**	**0.0105**	**0.0460**	**1.7000e-004**	**0.0105**	**2.5000e-004**	**0.0108**	**2.8200e-003**	**2.3000e-004**	**3.0500e-003**		**12.2331**	**12.2331**	**3.1000e-004**	**0.0000**	**12.2395**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.5282	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.2000e-004	3.2000e-004	0.0000		3.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.9800e-003	0.0105	0.0459	1.7000e-004	0.0105	2.5000e-004	0.0108	2.8200e-003	2.3000e-004	3.0500e-003		12.2327	12.2327	3.1000e-004		12.2392
Total	**1.5332**	**0.0105**	**0.0460**	**1.7000e-004**	**0.0105**	**2.5000e-004**	**0.0108**	**2.8200e-003**	**2.3000e-004**	**3.0500e-003**		**12.2331**	**12.2331**	**3.1000e-004**	**0.0000**	**12.2395**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2029	3/31/2029	5	22	
2	Excavation	Site Preparation	4/1/2029	5/31/2029	5	44	
3	Grading	Grading	4/1/2029	5/31/2029	5	44	
4	Building Construction	Building Construction	9/1/2029	10/31/2029	5	43	
5	Paving	Paving	11/1/2029	12/31/2029	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.45

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Excavation	Graders	1	8.00	174	0.41
Excavation	Rubber Tired Dozers	1	7.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	26.00	10.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743		5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**		**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0365	0.0414	0.5009	2.3300e-003	0.1886	1.3800e-003	0.1900	0.0500	1.2800e-003	0.0513		150.4949	150.4949	5.4200e-003		150.6088
Total	**0.0365**	**0.0414**	**0.5009**	**2.3300e-003**	**0.1886**	**1.3800e-003**	**0.1900**	**0.0500**	**1.2800e-003**	**0.0513**		**150.4949**	**150.4949**	**5.4200e-003**		**150.6088**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743	0.0000	5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**	**0.0000**	**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0365	0.0414	0.5009	2.3300e-003	0.1886	1.3800e-003	0.1900	0.0500	1.2800e-003	0.0513		150.4949	150.4949	5.4200e-003		150.6088
Total	**0.0365**	**0.0414**	**0.5009**	**2.3300e-003**	**0.1886**	**1.3800e-003**	**0.1900**	**0.0500**	**1.2800e-003**	**0.0513**		**150.4949**	**150.4949**	**5.4200e-003**		**150.6088**

3.3 Excavation - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.2443	11.3855	13.2617	0.0200		0.5340	0.5340		0.4913	0.4913		1,939.7929	1,939.7929	0.6274		1,952.9677
Total	**1.2443**	**11.3855**	**13.2617**	**0.0200**	**5.7996**	**0.5340**	**6.3336**	**2.9537**	**0.4913**	**3.4450**		**1,939.7929**	**1,939.7929**	**0.6274**		**1,952.9677**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.4800e-003	6.2100e-003	0.0751	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		22.5742	22.5742	8.1000e-004		22.5913
Total	**5.4800e-003**	**6.2100e-003**	**0.0751**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.7000e-003**		**22.5742**	**22.5742**	**8.1000e-004**		**22.5913**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.2443	11.3855	13.2617	0.0200		0.5340	0.5340		0.4913	0.4913	0.0000	1,939.7929	1,939.7929	0.6274		1,952.9677
Total	**1.2443**	**11.3855**	**13.2617**	**0.0200**	**5.7996**	**0.5340**	**6.3336**	**2.9537**	**0.4913**	**3.4450**	**0.0000**	**1,939.7929**	**1,939.7929**	**0.6274**		**1,952.9677**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.4800e-003	6.2100e-003	0.0751	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		22.5742	22.5742	8.1000e-004		22.5913
Total	**5.4800e-003**	**6.2100e-003**	**0.0751**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.7000e-003**		**22.5742**	**22.5742**	**8.1000e-004**		**22.5913**

3.4 Grading - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0806	0.0000	6.0806	3.3176	0.0000	3.3176			0.0000			0.0000
Off-Road	2.6671	22.4755	17.4070	0.0625		0.8972	0.8972		0.8254	0.8254		6,045.8025	6,045.8025	1.9553		6,086.8645
Total	**2.6671**	**22.4755**	**17.4070**	**0.0625**	**6.0806**	**0.8972**	**6.9778**	**3.3176**	**0.8254**	**4.1430**		**6,045.8025**	**6,045.8025**	**1.9553**		**6,086.8645**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3698	2.6367	3.6547	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1282	1,828.1282	0.0130		1,828.4007
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0329	0.0373	0.4508	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		135.4454	135.4454	4.8800e-003		135.5479
Total	**0.4027**	**2.6740**	**4.1055**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,963.5736**	**1,963.5736**	**0.0179**		**1,963.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0806	0.0000	6.0806	3.3176	0.0000	3.3176			0.0000			0.0000
Off-Road	2.6671	22.4755	17.4070	0.0625		0.8972	0.8972		0.8254	0.8254	0.0000	6,045.8025	6,045.8025	1.9553		6,086.8645
Total	**2.6671**	**22.4755**	**17.4070**	**0.0625**	**6.0806**	**0.8972**	**6.9778**	**3.3176**	**0.8254**	**4.1430**	**0.0000**	**6,045.8025**	**6,045.8025**	**1.9553**		**6,086.8645**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.3698	2.6367	3.6547	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1282	1,828.1282	0.0130		1,828.4007
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0329	0.0373	0.4508	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		135.4454	135.4454	4.8800e-003		135.5479
Total	**0.4027**	**2.6740**	**4.1055**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,963.5736**	**1,963.5736**	**0.0179**		**1,963.9486**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810		4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**		**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0620	0.3574	0.6873	2.3700e-003	0.0668	8.6200e-003	0.0755	0.0191	7.9300e-003	0.0271		222.6002	222.6002	1.5800e-003		222.6334
Worker	0.0475	0.0538	0.6512	3.0300e-003	0.2452	1.7900e-003	0.2470	0.0650	1.6600e-003	0.0667		195.6434	195.6434	7.0500e-003		195.7914

Total	**0.1095**	**0.4113**	**1.3384**	**5.4000e-003**	**0.3120**	**0.0104**	**0.3224**	**0.0842**	**9.5900e-003**	**0.0938**		**418.2436**	**418.2436**	**8.6300e-003**		**418.4248**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810	0.0000	4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**	**0.0000**	**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0620	0.3574	0.6873	2.3700e-003	0.0668	8.6200e-003	0.0755	0.0191	7.9300e-003	0.0271		222.6002	222.6002	1.5800e-003		222.6334
Worker	0.0475	0.0538	0.6512	3.0300e-003	0.2452	1.7900e-003	0.2470	0.0650	1.6600e-003	0.0667		195.6434	195.6434	7.0500e-003		195.7914
Total	**0.1095**	**0.4113**	**1.3384**	**5.4000e-003**	**0.3120**	**0.0104**	**0.3224**	**0.0842**	**9.5900e-003**	**0.0938**		**418.2436**	**418.2436**	**8.6300e-003**		**418.4248**

3.6 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1701	11.5398	13.5167	0.0288		0.4923	0.4923		0.4529	0.4529		2,789.9775	2,789.9775	0.9023		2,808.9266
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1701**	**11.5398**	**13.5167**	**0.0288**		**0.4923**	**0.4923**		**0.4529**	**0.4529**		**2,789.9775**	**2,789.9775**	**0.9023**		**2,808.9266**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0274	0.0311	0.3757	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.8712	112.8712	4.0700e-003		112.9566
Total	**0.0274**	**0.0311**	**0.3757**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.8712**	**112.8712**	**4.0700e-003**		**112.9566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1701	11.5398	13.5167	0.0288		0.4923	0.4923		0.4529	0.4529	0.0000	2,789.9775	2,789.9775	0.9023		2,808.9266
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**1.1701**	**11.5398**	**13.5167**	**0.0288**		**0.4923**	**0.4923**		**0.4529**	**0.4529**	**0.0000**	**2,789.9775**	**2,789.9775**	**0.9023**		**2,808.9266**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0274	0.0311	0.3757	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.8712	112.8712	4.0700e-003		112.9566
Total	**0.0274**	**0.0311**	**0.3757**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.8712**	**112.8712**	**4.0700e-003**		**112.9566**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.9800e-003	0.0105	0.0459	1.7000e-004	0.0105	2.5000e-004	0.0108	2.8200e-003	2.3000e-004	3.0500e-003		12.2327	12.2327	3.1000e-004		12.2392
Unmitigated	4.9800e-003	0.0105	0.0459	1.7000e-004	0.0105	2.5000e-004	0.0108	2.8200e-003	2.3000e-004	3.0500e-003		12.2327	12.2327	3.1000e-004		12.2392

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.31	2.31	2.31	4,922	4,922
Total	2.31	2.31	2.31	4,922	4,922

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Mitigated	1.5282	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.2000e-004	3.2000e-004	0.0000		3.3000e-004
Unmitigated	1.5282	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.2000e-004	3.2000e-004	0.0000		3.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1800					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3482					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.2000e-004	3.2000e-004	0.0000		3.3000e-004
Total	**1.5282**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.2000e-004**	**3.2000e-004**	**0.0000**		**3.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1800					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3482					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.2000e-004	3.2000e-004	0.0000		3.3000e-004
Total	**1.5282**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.2000e-004**	**3.2000e-004**	**0.0000**		**3.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	4.00	Acre	4.00	1,670.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Conv. ted sq. are footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	45.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	8.00	21.00
tblConstructionPhase	NumDays	18.00	64.00
tblConstructionPhase	NumDays	5.00	21.00
tblConstructionPhase	PhaseEndDate	7/2/2029	11/30/2029
tblConstructionPhase	PhaseEndDate	3/30/2029	3/31/2029
tblConstructionPhase	PhaseEndDate	5/29/2029	4/30/2029
tblConstructionPhase	PhaseStartDate	5/1/2029	10/1/2029
tblConstructionPhase	PhaseStartDate	5/1/2029	4/1/2029
tblGrading	AcresOfGrading	21.00	1.00
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	174,240.00	1,670.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	46.00	150.00

tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	20.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2029	0.1404	1.1794	1.3056	3.4500e-003	0.2693	0.0484	0.3177	0.1433	0.0448	0.1882	0.0000	306.2275	306.2275	0.0698	0.0000	307.6932
2030	0.0274	0.1027	0.2295	7.1000e-004	2.9300e-003	4.0900e-003	7.0200e-003	7.8000e-004	4.0900e-003	4.8700e-003	0.0000	67.0546	67.0546	2.2400e-003	0.0000	67.1016

Total	**0.1678**	**1.2821**	**1.5351**	**4.1600e-003**	**0.2722**	**0.0525**	**0.3247**	**0.1441**	**0.0489**	**0.1930**	**0.0000**	**373.2821**	**373.2821**	**0.0720**	**0.0000**	**374.7948**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2029	0.1404	1.1794	1.3056	3.4500e-003	0.2693	0.0484	0.3177	0.1433	0.0448	0.1882	0.0000	306.2272	306.2272	0.0698	0.0000	307.6929
2030	0.0274	0.1027	0.2295	7.1000e-004	2.9300e-003	4.0900e-003	7.0200e-003	7.8000e-004	4.0900e-003	4.8700e-003	0.0000	67.0545	67.0545	2.2400e-003	0.0000	67.1015
Total	**0.1678**	**1.2821**	**1.5351**	**4.1600e-003**	**0.2722**	**0.0525**	**0.3247**	**0.1441**	**0.0489**	**0.1930**	**0.0000**	**373.2817**	**373.2817**	**0.0720**	**0.0000**	**374.7944**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.4000e-003	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.4200e-003	5.5500e-003	0.0258	8.0000e-005	5.0800e-003	1.3000e-004	5.2100e-003	1.3700e-003	1.2000e-004	1.4800e-003	0.0000	5.3126	5.3126	1.4000e-004	0.0000	5.3155
Waste						0.0000	0.0000		0.0000	0.0000	0.0690	0.0000	0.0690	4.0800e-003	0.0000	0.1547

Water						0.0000	0.0000		0.0000	0.0000	0.0000	4.8526	4.8526	2.2000e-004	5.0000e-005	4.8713
Total	**9.8200e-003**	**5.5500e-003**	**0.0258**	**8.0000e-005**	**5.0800e-003**	**1.3000e-004**	**5.2100e-003**	**1.3700e-003**	**1.2000e-004**	**1.4800e-003**	**0.0690**	**10.1653**	**10.2343**	**4.4400e-003**	**5.0000e-005**	**10.3415**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.4000e-003	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.4200e-003	5.5500e-003	0.0258	8.0000e-005	5.0800e-003	1.3000e-004	5.2100e-003	1.3700e-003	1.2000e-004	1.4800e-003	0.0000	5.3126	5.3126	1.4000e-004	0.0000	5.3155
Waste						0.0000	0.0000		0.0000	0.0000	0.0690	0.0000	0.0690	4.0800e-003	0.0000	0.1547
Water						0.0000	0.0000		0.0000	0.0000	0.0000	4.8526	4.8526	2.2000e-004	5.0000e-005	4.8713
Total	**9.8200e-003**	**5.5500e-003**	**0.0258**	**8.0000e-005**	**5.0800e-003**	**1.3000e-004**	**5.2100e-003**	**1.3700e-003**	**1.2000e-004**	**1.4800e-003**	**0.0690**	**10.1653**	**10.2343**	**4.4400e-003**	**5.0000e-005**	**10.3415**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2029	3/31/2029	5	22	
2	Excavation	Site Preparation	4/1/2029	4/30/2029	5	21	
3	Grading	Grading	4/1/2029	4/30/2029	5	21	

4	Building Construction	Building Construction	10/1/2029	11/30/2029	5	45	
5	Paving	Paving	12/1/2029	2/28/2030	5	64	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Excavation	Rubber Tired Dozers	3	8.00	255	0.40

Excavation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	8	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	1.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0314	0.2744	0.2898	6.5000e-004		0.0117	0.0117		0.0107	0.0107	0.0000	57.0140	57.0140	0.0184	0.0000	57.4013
Total	**0.0314**	**0.2744**	**0.2898**	**6.5000e-004**	**0.0000**	**0.0117**	**0.0117**	**0.0000**	**0.0107**	**0.0107**	**0.0000**	**57.0140**	**57.0140**	**0.0184**	**0.0000**	**57.4013**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	5.1000e-004	4.9900e-003	2.0000e-005	2.0000e-003	2.0000e-005	2.0100e-003	5.3000e-004	1.0000e-005	5.5000e-004	0.0000	1.3924	1.3924	5.0000e-005	0.0000	1.3935
Total	**3.7000e-004**	**5.1000e-004**	**4.9900e-003**	**2.0000e-005**	**2.0000e-003**	**2.0000e-005**	**2.0100e-003**	**5.3000e-004**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**1.3924**	**1.3924**	**5.0000e-005**	**0.0000**	**1.3935**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0314	0.2744	0.2898	6.5000e-004		0.0117	0.0117		0.0107	0.0107	0.0000	57.0140	57.0140	0.0184	0.0000	57.4012
Total	**0.0314**	**0.2744**	**0.2898**	**6.5000e-004**	**0.0000**	**0.0117**	**0.0117**	**0.0000**	**0.0107**	**0.0107**	**0.0000**	**57.0140**	**57.0140**	**0.0184**	**0.0000**	**57.4012**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	5.1000e-004	4.9900e-003	2.0000e-005	2.0000e-003	2.0000e-005	2.0100e-003	5.3000e-004	1.0000e-005	5.5000e-004	0.0000	1.3924	1.3924	5.0000e-005	0.0000	1.3935

Total	**3.7000e-004**	**5.1000e-004**	**4.9900e-003**	**2.0000e-005**	**2.0000e-003**	**2.0000e-005**	**2.0100e-003**	**5.3000e-004**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**1.3924**	**1.3924**	**5.0000e-005**	**0.0000**	**1.3935**

3.3 Excavation - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1897	0.0000	0.1897	0.1043	0.0000	0.1043	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0276	0.2602	0.2831	4.4000e-004		0.0114	0.0114		0.0104	0.0104	0.0000	38.8197	38.8197	0.0126	0.0000	39.0833
Total	**0.0276**	**0.2602**	**0.2831**	**4.4000e-004**	**0.1897**	**0.0114**	**0.2011**	**0.1043**	**0.0104**	**0.1147**	**0.0000**	**38.8197**	**38.8197**	**0.0126**	**0.0000**	**39.0833**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	7.0000e-005	7.1000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.1994	0.1994	1.0000e-005	0.0000	0.1995
Total	**5.0000e-005**	**7.0000e-005**	**7.1000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**2.9000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.1994**	**0.1994**	**1.0000e-005**	**0.0000**	**0.1995**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1897	0.0000	0.1897	0.1043	0.0000	0.1043	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0276	0.2602	0.2831	4.4000e-004		0.0114	0.0114		0.0104	0.0104	0.0000	38.8196	38.8196	0.0126	0.0000	39.0833
Total	**0.0276**	**0.2602**	**0.2831**	**4.4000e-004**	**0.1897**	**0.0114**	**0.2011**	**0.1043**	**0.0104**	**0.1147**	**0.0000**	**38.8196**	**38.8196**	**0.0126**	**0.0000**	**39.0833**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	7.0000e-005	7.1000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.1994	0.1994	1.0000e-005	0.0000	0.1995
Total	**5.0000e-005**	**7.0000e-005**	**7.1000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**2.9000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.1994**	**0.1994**	**1.0000e-005**	**0.0000**	**0.1995**

3.4 Grading - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0643	0.0000	0.0643	0.0349	0.0000	0.0349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0280	0.2360	0.1828	6.6000e-004		9.4200e-003	9.4200e-003		8.6700e-003	8.6700e-003	0.0000	57.5889	57.5889	0.0186	0.0000	57.9801

Total	**0.0280**	**0.2360**	**0.1828**	**6.6000e-004**	**0.0643**	**9.4200e-003**	**0.0737**	**0.0349**	**8.6700e-003**	**0.0436**	**0.0000**	**57.5889**	**57.5889**	**0.0186**	**0.0000**	**57.9801**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5000e-003	0.0601	0.1045	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4499	36.4499	2.6000e-004	0.0000	36.4554
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	4.4000e-004	4.2900e-003	2.0000e-005	1.7200e-003	1.0000e-005	1.7300e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.1962	1.1962	5.0000e-005	0.0000	1.1972
Total	**8.8100e-003**	**0.0606**	**0.1088**	**4.5000e-004**	**0.0114**	**1.7900e-003**	**0.0132**	**3.1200e-003**	**1.6400e-003**	**4.7700e-003**	**0.0000**	**37.6461**	**37.6461**	**3.1000e-004**	**0.0000**	**37.6526**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0643	0.0000	0.0643	0.0349	0.0000	0.0349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0280	0.2360	0.1828	6.6000e-004		9.4200e-003	9.4200e-003		8.6700e-003	8.6700e-003	0.0000	57.5889	57.5889	0.0186	0.0000	57.9800
Total	**0.0280**	**0.2360**	**0.1828**	**6.6000e-004**	**0.0643**	**9.4200e-003**	**0.0737**	**0.0349**	**8.6700e-003**	**0.0436**	**0.0000**	**57.5889**	**57.5889**	**0.0186**	**0.0000**	**57.9800**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5000e-003	0.0601	0.1045	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4499	36.4499	2.6000e-004	0.0000	36.4554
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	4.4000e-004	4.2900e-003	2.0000e-005	1.7200e-003	1.0000e-005	1.7300e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.1962	1.1962	5.0000e-005	0.0000	1.1972
Total	**8.8100e-003**	**0.0606**	**0.1088**	**4.5000e-004**	**0.0114**	**1.7900e-003**	**0.0132**	**3.1200e-003**	**1.6400e-003**	**4.7700e-003**	**0.0000**	**37.6461**	**37.6461**	**3.1000e-004**	**0.0000**	**37.6526**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0316	0.2261	0.2894	9.0000e-004		9.0000e-003	9.0000e-003		8.5700e-003	8.5700e-003	0.0000	85.8520	85.8520	0.0112	0.0000	86.0865
Total	**0.0316**	**0.2261**	**0.2894**	**9.0000e-004**		**9.0000e-003**	**9.0000e-003**		**8.5700e-003**	**8.5700e-003**	**0.0000**	**85.8520**	**85.8520**	**0.0112**	**0.0000**	**86.0865**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	4.0000e-005	5.0000e-005	5.1000e-004	0.0000	2.0000e-004	0.0000	2.1000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.1424	0.1424	1.0000e-005	0.0000	0.1425
Total	**4.0000e-005**	**5.0000e-005**	**5.1000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.1000e-004**	**5.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1424**	**0.1424**	**1.0000e-005**	**0.0000**	**0.1425**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0316	0.2261	0.2894	9.0000e-004		9.0000e-003	9.0000e-003		8.5700e-003	8.5700e-003	0.0000	85.8519	85.8519	0.0112	0.0000	86.0864
Total	**0.0316**	**0.2261**	**0.2894**	**9.0000e-004**		**9.0000e-003**	**9.0000e-003**		**8.5700e-003**	**8.5700e-003**	**0.0000**	**85.8519**	**85.8519**	**0.0112**	**0.0000**	**86.0864**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	5.0000e-005	5.1000e-004	0.0000	2.0000e-004	0.0000	2.1000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.1424	0.1424	1.0000e-005	0.0000	0.1425
Total	**4.0000e-005**	**5.0000e-005**	**5.1000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.1000e-004**	**5.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1424**	**0.1424**	**1.0000e-005**	**0.0000**	**0.1425**

3.6 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0123	0.1212	0.1419	3.0000e-004		5.1700e-003	5.1700e-003		4.7600e-003	4.7600e-003	0.0000	26.5758	26.5758	8.6000e-003	0.0000	26.7563
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0123**	**0.1212**	**0.1419**	**3.0000e-004**		**5.1700e-003**	**5.1700e-003**		**4.7600e-003**	**4.7600e-003**	**0.0000**	**26.5758**	**26.5758**	**8.6000e-003**	**0.0000**	**26.7563**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	3.7000e-004	3.5700e-003	2.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	0.9968	0.9968	4.0000e-005	0.0000	0.9976
Total	**2.6000e-004**	**3.7000e-004**	**3.5700e-003**	**2.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**0.9968**	**0.9968**	**4.0000e-005**	**0.0000**	**0.9976**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0123	0.1212	0.1419	3.0000e-004		5.1700e-003	5.1700e-003		4.7600e-003	4.7600e-003	0.0000	26.5757	26.5757	8.6000e-003	0.0000	26.7562

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0123**	**0.1212**	**0.1419**	**3.0000e-004**		**5.1700e-003**	**5.1700e-003**		**4.7600e-003**	**4.7600e-003**	**0.0000**	**26.5757**	**26.5757**	**8.6000e-003**	**0.0000**	**26.7562**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	3.7000e-004	3.5700e-003	2.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	0.9968	0.9968	4.0000e-005	0.0000	0.9976
Total	**2.6000e-004**	**3.7000e-004**	**3.5700e-003**	**2.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**0.9968**	**0.9968**	**4.0000e-005**	**0.0000**	**0.9976**

3.6 Paving - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0269	0.1020	0.2224	6.7000e-004		4.0700e-003	4.0700e-003		4.0700e-003	4.0700e-003	0.0000	65.0265	65.0265	2.1600e-003	0.0000	65.0719
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0269**	**0.1020**	**0.2224**	**6.7000e-004**		**4.0700e-003**	**4.0700e-003**		**4.0700e-003**	**4.0700e-003**	**0.0000**	**65.0265**	**65.0265**	**2.1600e-003**	**0.0000**	**65.0719**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	7.2000e-004	7.0600e-003	3.0000e-005	2.9300e-003	2.0000e-005	2.9500e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.0281	2.0281	8.0000e-005	0.0000	2.0297
Total	**5.2000e-004**	**7.2000e-004**	**7.0600e-003**	**3.0000e-005**	**2.9300e-003**	**2.0000e-005**	**2.9500e-003**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**0.0000**	**2.0281**	**2.0281**	**8.0000e-005**	**0.0000**	**2.0297**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0269	0.1020	0.2224	6.7000e-004		4.0700e-003	4.0700e-003		4.0700e-003	4.0700e-003	0.0000	65.0264	65.0264	2.1600e-003	0.0000	65.0718
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0269**	**0.1020**	**0.2224**	**6.7000e-004**		**4.0700e-003**	**4.0700e-003**		**4.0700e-003**	**4.0700e-003**	**0.0000**	**65.0264**	**65.0264**	**2.1600e-003**	**0.0000**	**65.0718**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	7.2000e-004	7.0600e-003	3.0000e-005	2.9300e-003	2.0000e-005	2.9500e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.0281	2.0281	8.0000e-005	0.0000	2.0297
Total	**5.2000e-004**	**7.2000e-004**	**7.0600e-003**	**3.0000e-005**	**2.9300e-003**	**2.0000e-005**	**2.9500e-003**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**0.0000**	**2.0281**	**2.0281**	**8.0000e-005**	**0.0000**	**2.0297**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.4200e-003	5.5500e-003	0.0258	8.0000e-005	5.0800e-003	1.3000e-004	5.2100e-003	1.3700e-003	1.2000e-004	1.4800e-003	0.0000	5.3126	5.3126	1.4000e-004	0.0000	5.3155
Unmitigated	2.4200e-003	5.5500e-003	0.0258	8.0000e-005	5.0800e-003	1.3000e-004	5.2100e-003	1.3700e-003	1.2000e-004	1.4800e-003	0.0000	5.3126	5.3126	1.4000e-004	0.0000	5.3155

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	6.36	6.36	6.36	13,578	13,578
Total	6.36	6.36	6.36	13,578	13,578

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	7.4000e-003	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Unmitigated	7.4000e-003	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.5200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Total	**7.3900e-003**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.5200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Total	**7.3900e-003**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.8526	2.2000e-004	5.0000e-005	4.8713
Unmitigated	4.8526	2.2000e-004	5.0000e-005	4.8713

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.76593	4.8526	2.2000e-004	5.0000e-005	4.8713
Total		**4.8526**	**2.2000e-004**	**5.0000e-005**	**4.8713**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.76593	4.8526	2.2000e-004	5.0000e-005	4.8713
Total		**4.8526**	**2.2000e-004**	**5.0000e-005**	**4.8713**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0690	4.0800e-003	0.0000	0.1547

Unmitigated	0.0690	4.0800e-003	0.0000	0.1547

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1547
Total		**0.0690**	**4.0800e-003**	**0.0000**	**0.1547**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1547
Total		**0.0690**	**4.0800e-003**	**0.0000**	**0.1547**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	4.00	Acre	4.00	1,670.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Conv. ted sq. are footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	45.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	8.00	21.00
tblConstructionPhase	NumDays	18.00	64.00
tblConstructionPhase	NumDays	5.00	21.00
tblConstructionPhase	PhaseEndDate	7/2/2029	11/30/2029
tblConstructionPhase	PhaseEndDate	3/30/2029	3/31/2029
tblConstructionPhase	PhaseEndDate	5/29/2029	4/30/2029
tblConstructionPhase	PhaseStartDate	5/1/2029	10/1/2029
tblConstructionPhase	PhaseStartDate	5/1/2029	4/1/2029
tblGrading	AcresOfGrading	21.00	1.00
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	174,240.00	1,670.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	46.00	150.00

tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	20.00	3.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2029	6.1095	52.8253	52.5524	0.1477	25.3402	2.1483	27.4886	13.5677	1.9765	15.5441	0.0000	14,109.5551	14,109.5551	3.3063	0.0000	14,178.9870
2030	1.2774	4.7720	10.7081	0.0329	0.1415	0.1904	0.3319	0.0375	0.1904	0.2279	0.0000	3,446.0864	3,446.0864	0.1148	0.0000	3,448.4974

Total	**7.3869**	**57.5973**	**63.2606**	**0.1806**	**25.4817**	**2.3388**	**27.8204**	**13.6052**	**2.1668**	**15.7720**	**0.0000**	**17,555.6416**	**17,555.6416**	**3.4211**	**0.0000**	**17,627.4843**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2029	6.1095	52.8253	52.5524	0.1477	25.3402	2.1483	27.4886	13.5677	1.9765	15.5441	0.0000	14,109.5551	14,109.5551	3.3063	0.0000	14,178.9870
2030	1.2774	4.7720	10.7081	0.0329	0.1415	0.1904	0.3319	0.0375	0.1904	0.2279	0.0000	3,446.0864	3,446.0864	0.1148	0.0000	3,448.4974
Total	**7.3869**	**57.5973**	**63.2606**	**0.1806**	**25.4817**	**2.3388**	**27.8204**	**13.6052**	**2.1668**	**15.7720**	**0.0000**	**17,555.6416**	**17,555.6416**	**3.4211**	**0.0000**	**17,627.4843**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0406	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.2000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0137	0.0289	0.1266	4.6000e-004	0.0290	6.9000e-004	0.0297	7.7700e-003	6.4000e-004	8.4100e-003		33.7455	33.7455	8.4000e-004		33.7632
Total	**0.0543**	**0.0289**	**0.1270**	**4.6000e-004**	**0.0290**	**6.9000e-004**	**0.0297**	**7.7700e-003**	**6.4000e-004**	**8.4100e-003**		**33.7464**	**33.7464**	**8.4000e-004**	**0.0000**	**33.7641**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0406	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.2000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0137	0.0289	0.1266	4.6000e-004	0.0290	6.9000e-004	0.0297	7.7700e-003	6.4000e-004	8.4100e-003		33.7455	33.7455	8.4000e-004		33.7632
Total	**0.0543**	**0.0289**	**0.1270**	**4.6000e-004**	**0.0290**	**6.9000e-004**	**0.0297**	**7.7700e-003**	**6.4000e-004**	**8.4100e-003**		**33.7464**	**33.7464**	**8.4000e-004**	**0.0000**	**33.7641**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2029	3/31/2029	5	22	
2	Excavation	Site Preparation	4/1/2029	4/30/2029	5	21	
3	Grading	Grading	4/1/2029	4/30/2029	5	21	
4	Building Construction	Building Construction	10/1/2029	11/30/2029	5	45	
5	Paving	Paving	12/1/2029	2/28/2030	5	64	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Building Construction	Cranes	1	8.00	150	0.29
Building Construction	Forklifts	1	6.00	150	0.20
Building Construction	Generator Sets	1	6.00	400	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Building Construction	Welders	1	6.00	150	0.45
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Excavation	Rubber Tired Dozers	3	8.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Excavation	8	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	1.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743		5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**		**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0365	0.0414	0.5009	2.3300e-003	0.1886	1.3800e-003	0.1900	0.0500	1.2800e-003	0.0513		150.4949	150.4949	5.4200e-003		150.6088

Total	**0.0365**	**0.0414**	**0.5009**	**2.3300e-003**	**0.1886**	**1.3800e-003**	**0.1900**	**0.0500**	**1.2800e-003**	**0.0513**		**150.4949**	**150.4949**	**5.4200e-003**		**150.6088**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743	0.0000	5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**	**0.0000**	**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0365	0.0414	0.5009	2.3300e-003	0.1886	1.3800e-003	0.1900	0.0500	1.2800e-003	0.0513		150.4949	150.4949	5.4200e-003		150.6088
Total	**0.0365**	**0.0414**	**0.5009**	**2.3300e-003**	**0.1886**	**1.3800e-003**	**0.1900**	**0.0500**	**1.2800e-003**	**0.0513**		**150.4949**	**150.4949**	**5.4200e-003**		**150.6088**

3.3 Excavation - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6293	24.7818	26.9621	0.0421		1.0807	1.0807		0.9943	0.9943		4,075.3693	4,075.3693	1.3181		4,103.0485
Total	**2.6293**	**24.7818**	**26.9621**	**0.0421**	**18.0663**	**1.0807**	**19.1470**	**9.9307**	**0.9943**	**10.9250**		**4,075.3693**	**4,075.3693**	**1.3181**		**4,103.0485**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.4800e-003	6.2100e-003	0.0751	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		22.5742	22.5742	8.1000e-004		22.5913
Total	**5.4800e-003**	**6.2100e-003**	**0.0751**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.7000e-003**		**22.5742**	**22.5742**	**8.1000e-004**		**22.5913**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6293	24.7818	26.9621	0.0421		1.0807	1.0807		0.9943	0.9943	0.0000	4,075.3693	4,075.3693	1.3181		4,103.0485

Total	**2.6293**	**24.7818**	**26.9621**	**0.0421**	**18.0663**	**1.0807**	**19.1470**	**9.9307**	**0.9943**	**10.9250**	**0.0000**	**4,075.3693**	**4,075.3693**	**1.3181**		**4,103.0485**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.4800e-003	6.2100e-003	0.0751	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		22.5742	22.5742	8.1000e-004		22.5913
Total	**5.4800e-003**	**6.2100e-003**	**0.0751**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.7000e-003**		**22.5742**	**22.5742**	**8.1000e-004**		**22.5913**

3.4 Grading - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1220	0.0000	6.1220	3.3232	0.0000	3.3232			0.0000			0.0000
Off-Road	2.6671	22.4755	17.4070	0.0625		0.8972	0.8972		0.8254	0.8254		6,045.8025	6,045.8025	1.9553		6,086.8645
Total	**2.6671**	**22.4755**	**17.4070**	**0.0625**	**6.1220**	**0.8972**	**7.0192**	**3.3232**	**0.8254**	**4.1486**		**6,045.8025**	**6,045.8025**	**1.9553**		**6,086.8645**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7748	5.5245	7.6574	0.0407	0.9539	0.1690	1.1229	0.2613	0.1555	0.4168		3,830.3638	3,830.3638	0.0272		3,830.9348
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0329	0.0373	0.4508	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		135.4454	135.4454	4.8800e-003		135.5479
Total	**0.8077**	**5.5618**	**8.1082**	**0.0428**	**1.1237**	**0.1702**	**1.2939**	**0.3063**	**0.1566**	**0.4629**		**3,965.8092**	**3,965.8092**	**0.0321**		**3,966.4827**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1220	0.0000	6.1220	3.3232	0.0000	3.3232			0.0000			0.0000
Off-Road	2.6671	22.4755	17.4070	0.0625		0.8972	0.8972		0.8254	0.8254	0.0000	6,045.8025	6,045.8025	1.9553		6,086.8645
Total	**2.6671**	**22.4755**	**17.4070**	**0.0625**	**6.1220**	**0.8972**	**7.0192**	**3.3232**	**0.8254**	**4.1486**	**0.0000**	**6,045.8025**	**6,045.8025**	**1.9553**		**6,086.8645**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7748	5.5245	7.6574	0.0407	0.9539	0.1690	1.1229	0.2613	0.1555	0.4168		3,830.3638	3,830.3638	0.0272		3,830.9348
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0329	0.0373	0.4508	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		135.4454	135.4454	4.8800e-003		135.5479
Total	**0.8077**	**5.5618**	**8.1082**	**0.0428**	**1.1237**	**0.1702**	**1.2939**	**0.3063**	**0.1566**	**0.4629**		**3,965.8092**	**3,965.8092**	**0.0321**		**3,966.4827**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810		4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**		**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8300e-003	2.0700e-003	0.0250	1.2000e-004	9.4300e-003	7.0000e-005	9.5000e-003	2.5000e-003	6.0000e-005	2.5700e-003		7.5247	7.5247	2.7000e-004		7.5304
Total	**1.8300e-003**	**2.0700e-003**	**0.0250**	**1.2000e-004**	**9.4300e-003**	**7.0000e-005**	**9.5000e-003**	**2.5000e-003**	**6.0000e-005**	**2.5700e-003**		**7.5247**	**7.5247**	**2.7000e-004**		**7.5304**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810	0.0000	4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**	**0.0000**	**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8300e-003	2.0700e-003	0.0250	1.2000e-004	9.4300e-003	7.0000e-005	9.5000e-003	2.5000e-003	6.0000e-005	2.5700e-003		7.5247	7.5247	2.7000e-004		7.5304
Total	**1.8300e-003**	**2.0700e-003**	**0.0250**	**1.2000e-004**	**9.4300e-003**	**7.0000e-005**	**9.5000e-003**	**2.5000e-003**	**6.0000e-005**	**2.5700e-003**		**7.5247**	**7.5247**	**2.7000e-004**		**7.5304**

3.6 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1701	11.5398	13.5167	0.0288		0.4923	0.4923		0.4529	0.4529		2,789.9775	2,789.9775	0.9023		2,808.9266

Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1701**	**11.5398**	**13.5167**	**0.0288**		**0.4923**	**0.4923**		**0.4529**	**0.4529**		**2,789.9775**	**2,789.9775**	**0.9023**		**2,808.9266**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0274	0.0311	0.3757	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.8712	112.8712	4.0700e-003		112.9566
Total	**0.0274**	**0.0311**	**0.3757**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.8712**	**112.8712**	**4.0700e-003**		**112.9566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1701	11.5398	13.5167	0.0288		0.4923	0.4923		0.4529	0.4529	0.0000	2,789.9775	2,789.9775	0.9023		2,808.9266
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1701**	**11.5398**	**13.5167**	**0.0288**		**0.4923**	**0.4923**		**0.4529**	**0.4529**	**0.0000**	**2,789.9775**	**2,789.9775**	**0.9023**		**2,808.9266**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0274	0.0311	0.3757	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.8712	112.8712	4.0700e-003		112.9566
Total	**0.0274**	**0.0311**	**0.3757**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.8712**	**112.8712**	**4.0700e-003**		**112.9566**

3.6 Paving - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2511	4.7422	10.3449	0.0312		0.1894	0.1894		0.1894	0.1894		3,333.9265	3,333.9265	0.1108		3,336.2542
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2511**	**4.7422**	**10.3449**	**0.0312**		**0.1894**	**0.1894**		**0.1894**	**0.1894**		**3,333.9265**	**3,333.9265**	**0.1108**		**3,336.2542**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0263	0.0298	0.3633	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.1599	112.1599	3.9600e-003		112.2431
Total	**0.0263**	**0.0298**	**0.3633**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.1599**	**112.1599**	**3.9600e-003**		**112.2431**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2511	4.7422	10.3449	0.0312		0.1894	0.1894		0.1894	0.1894	0.0000	3,333.9265	3,333.9265	0.1108		3,336.2542
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2511**	**4.7422**	**10.3449**	**0.0312**		**0.1894**	**0.1894**		**0.1894**	**0.1894**	**0.0000**	**3,333.9265**	**3,333.9265**	**0.1108**		**3,336.2542**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0263	0.0298	0.3633	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.1599	112.1599	3.9600e-003		112.2431
Total	**0.0263**	**0.0298**	**0.3633**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.1599**	**112.1599**	**3.9600e-003**		**112.2431**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0137	0.0289	0.1266	4.6000e-004	0.0290	6.9000e-004	0.0297	7.7700e-003	6.4000e-004	8.4100e-003		33.7455	33.7455	8.4000e-004		33.7632
Unmitigated	0.0137	0.0289	0.1266	4.6000e-004	0.0290	6.9000e-004	0.0297	7.7700e-003	6.4000e-004	8.4100e-003		33.7455	33.7455	8.4000e-004		33.7632

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	6.36	6.36	6.36	13,578	13,578
Total	6.36	6.36	6.36	13,578	13,578

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0406	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.2000e-004
Unmitigated	0.0406	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.2000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.7700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0357					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-005	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.2000e-004
Total	**0.0406**	**0.0000**	**4.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**8.8000e-004**	**8.8000e-004**	**0.0000**		**9.2000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.0357					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-005	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.2000e-004
Architectural Coating	4.7700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0406**	**0.0000**	**4.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**8.8000e-004**	**8.8000e-004**	**0.0000**		**9.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported)

Con. orted sq. ore footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	66.00
tblConstructionPhase	NumDays	0.00	43.00
tblConstructionPhase	NumDays	0.00	65.00
tblConstructionPhase	NumDays	0.00	65.00
tblConstructionPhase	PhaseEndDate	10/2/2028	8/31/2028
tblConstructionPhase	PhaseEndDate	4/28/2028	4/30/2028
tblConstructionPhase	PhaseEndDate	9/29/2028	6/30/2028
tblConstructionPhase	PhaseEndDate	7/28/2028	6/30/2028
tblConstructionPhase	PhaseStartDate	7/1/2028	6/1/2028
tblConstructionPhase	PhaseStartDate	7/1/2028	4/1/2028
tblConstructionPhase	PhaseStartDate	5/1/2028	4/1/2028
tblGrading	AcresOfGrading	65.00	0.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripNumber	0.00	513.00
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.2370	1.9535	2.1216	5.6800e-003	0.2314	0.0809	0.3123	0.1143	0.0751	0.1894	0.0000	503.4704	503.4704	0.1262	0.0000	506.1195
Total	**0.2370**	**1.9535**	**2.1216**	**5.6800e-003**	**0.2314**	**0.0809**	**0.3123**	**0.1143**	**0.0751**	**0.1894**	**0.0000**	**503.4704**	**503.4704**	**0.1262**	**0.0000**	**506.1195**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.2370	1.9535	2.1216	5.6800e-003	0.2314	0.0809	0.3123	0.1143	0.0751	0.1894	0.0000	503.4699	503.4699	0.1262	0.0000	506.1189
Total	**0.2370**	**1.9535**	**2.1216**	**5.6800e-003**	**0.2314**	**0.0809**	**0.3123**	**0.1143**	**0.0751**	**0.1894**	**0.0000**	**503.4699**	**503.4699**	**0.1262**	**0.0000**	**506.1189**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2028	4/30/2028	5	43	
2	Excavation	Site Preparation	4/1/2028	6/30/2028	5	65	
3	Grading	Grading	4/1/2028	6/30/2028	5	65	
4	Construction	Building Construction	6/1/2028	8/31/2028	5	66	
5	Landscaping	Trenching	9/1/2028	11/30/2028	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Construction	Cranes	1	8.00	150	0.29
Construction	Forklifts	1	6.00	150	0.20
Construction	Generator Sets	1	6.00	400	0.74
Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Construction	Welders	1	6.00	150	0.45
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	513.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Construction	5	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0613	0.5363	0.5665	1.2700e-003		0.0228	0.0228		0.0210	0.0210	0.0000	111.4365	111.4365	0.0360	0.0000	112.1934
Total	**0.0613**	**0.5363**	**0.5665**	**1.2700e-003**	**0.0000**	**0.0228**	**0.0228**	**0.0000**	**0.0210**	**0.0210**	**0.0000**	**111.4365**	**111.4365**	**0.0360**	**0.0000**	**112.1934**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	1.0500e-003	0.0101	5.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	2.7417	2.7417	1.1000e-004	0.0000	2.7440
Total	**7.4000e-004**	**1.0500e-003**	**0.0101**	**5.0000e-005**	**3.9000e-003**	**3.0000e-005**	**3.9300e-003**	**1.0400e-003**	**3.0000e-005**	**1.0700e-003**	**0.0000**	**2.7417**	**2.7417**	**1.1000e-004**	**0.0000**	**2.7440**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0613	0.5363	0.5665	1.2700e-003		0.0228	0.0228		0.0210	0.0210	0.0000	111.4364	111.4364	0.0360	0.0000	112.1933
Total	**0.0613**	**0.5363**	**0.5665**	**1.2700e-003**	**0.0000**	**0.0228**	**0.0228**	**0.0000**	**0.0210**	**0.0210**	**0.0000**	**111.4364**	**111.4364**	**0.0360**	**0.0000**	**112.1933**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	1.0500e-003	0.0101	5.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	2.7417	2.7417	1.1000e-004	0.0000	2.7440
Total	**7.4000e-004**	**1.0500e-003**	**0.0101**	**5.0000e-005**	**3.9000e-003**	**3.0000e-005**	**3.9300e-003**	**1.0400e-003**	**3.0000e-005**	**1.0700e-003**	**0.0000**	**2.7417**	**2.7417**	**1.1000e-004**	**0.0000**	**2.7440**

3.3 Excavation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.0172	0.0000	0.0172	1.8600e-003	0.0000	1.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.1977	0.2796	4.0000e-004		9.6500e-003	9.6500e-003		8.8800e-003	8.8800e-003	0.0000	34.9573	34.9573	0.0113	0.0000	35.1947
Total	**0.0217**	**0.1977**	**0.2796**	**4.0000e-004**	**0.0172**	**9.6500e-003**	**0.0269**	**1.8600e-003**	**8.8800e-003**	**0.0107**	**0.0000**	**34.9573**	**34.9573**	**0.0113**	**0.0000**	**35.1947**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	2.4000e-004	2.3000e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.6217	0.6217	2.0000e-005	0.0000	0.6222
Total	**1.7000e-004**	**2.4000e-004**	**2.3000e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.6217**	**0.6217**	**2.0000e-005**	**0.0000**	**0.6222**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0172	0.0000	0.0172	1.8600e-003	0.0000	1.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.1977	0.2796	4.0000e-004		9.6500e-003	9.6500e-003		8.8800e-003	8.8800e-003	0.0000	34.9572	34.9572	0.0113	0.0000	35.1946
Total	**0.0217**	**0.1977**	**0.2796**	**4.0000e-004**	**0.0172**	**9.6500e-003**	**0.0269**	**1.8600e-003**	**8.8800e-003**	**0.0107**	**0.0000**	**34.9572**	**34.9572**	**0.0113**	**0.0000**	**35.1946**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	2.4000e-004	2.3000e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.6217	0.6217	2.0000e-005	0.0000	0.6222
Total	**1.7000e-004**	**2.4000e-004**	**2.3000e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.6217**	**0.6217**	**2.0000e-005**	**0.0000**	**0.6222**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1957	0.0000	0.1957	0.1076	0.0000	0.1076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0963	0.8042	0.6842	2.2300e-003		0.0322	0.0322		0.0298	0.0298	0.0000	195.7253	195.7253	0.0584	0.0000	196.9521
Total	**0.0963**	**0.8042**	**0.6842**	**2.2300e-003**	**0.1957**	**0.0322**	**0.2279**	**0.1076**	**0.0298**	**0.1374**	**0.0000**	**195.7253**	**195.7253**	**0.0584**	**0.0000**	**196.9521**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	3.8400e-003	0.0270	0.0472	1.9000e-004	4.3300e-003	7.9000e-004	5.1200e-003	1.1900e-003	7.3000e-004	1.9200e-003	0.0000	16.2884	16.2884	1.2000e-004	0.0000	16.2909
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	1.4300e-003	0.0138	6.0000e-005	5.3100e-003	4.0000e-005	5.3500e-003	1.4100e-003	4.0000e-005	1.4500e-003	0.0000	3.7299	3.7299	1.5000e-004	0.0000	3.7330
Total	**4.8500e-003**	**0.0284**	**0.0610**	**2.5000e-004**	**9.6400e-003**	**8.3000e-004**	**0.0105**	**2.6000e-003**	**7.7000e-004**	**3.3700e-003**	**0.0000**	**20.0184**	**20.0184**	**2.7000e-004**	**0.0000**	**20.0239**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1957	0.0000	0.1957	0.1076	0.0000	0.1076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0963	0.8042	0.6842	2.2300e-003		0.0322	0.0322		0.0298	0.0298	0.0000	195.7251	195.7251	0.0584	0.0000	196.9519
Total	**0.0963**	**0.8042**	**0.6842**	**2.2300e-003**	**0.1957**	**0.0322**	**0.2279**	**0.1076**	**0.0298**	**0.1374**	**0.0000**	**195.7251**	**195.7251**	**0.0584**	**0.0000**	**196.9519**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.8400e-003	0.0270	0.0472	1.9000e-004	4.3300e-003	7.9000e-004	5.1200e-003	1.1900e-003	7.3000e-004	1.9200e-003	0.0000	16.2884	16.2884	1.2000e-004	0.0000	16.2909
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	1.4300e-003	0.0138	6.0000e-005	5.3100e-003	4.0000e-005	5.3500e-003	1.4100e-003	4.0000e-005	1.4500e-003	0.0000	3.7299	3.7299	1.5000e-004	0.0000	3.7330
Total	**4.8500e-003**	**0.0284**	**0.0610**	**2.5000e-004**	**9.6400e-003**	**8.3000e-004**	**0.0105**	**2.6000e-003**	**7.7000e-004**	**3.3700e-003**	**0.0000**	**20.0184**	**20.0184**	**2.7000e-004**	**0.0000**	**20.0239**

3.5 Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0464	0.3315	0.4244	1.3300e-003		0.0132	0.0132		0.0126	0.0126	0.0000	125.9162	125.9162	0.0164	0.0000	126.2602
Total	**0.0464**	**0.3315**	**0.4244**	**1.3300e-003**		**0.0132**	**0.0132**		**0.0126**	**0.0126**	**0.0000**	**125.9162**	**125.9162**	**0.0164**	**0.0000**	**126.2602**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	0.0464	0.3315	0.4244	1.3300e-003		0.0132	0.0132		0.0126	0.0126	0.0000	125.9161	125.9161	0.0164	0.0000	126.2600
Total	**0.0464**	**0.3315**	**0.4244**	**1.3300e-003**		**0.0132**	**0.0132**		**0.0126**	**0.0126**	**0.0000**	**125.9161**	**125.9161**	**0.0164**	**0.0000**	**126.2600**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Landscaping - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3100e-003	0.0537	0.0897	1.3000e-004		2.1800e-003	2.1800e-003		2.0000e-003	2.0000e-003	0.0000	11.0173	11.0173	3.5600e-003	0.0000	11.0922
Total	**5.3100e-003**	**0.0537**	**0.0897**	**1.3000e-004**		**2.1800e-003**	**2.1800e-003**		**2.0000e-003**	**2.0000e-003**	**0.0000**	**11.0173**	**11.0173**	**3.5600e-003**	**0.0000**	**11.0922**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	4.0000e-004	3.8300e-003	2.0000e-005	4.0200e-003	1.0000e-005	4.0400e-003	1.0200e-003	1.0000e-005	1.0300e-003	0.0000	1.0361	1.0361	4.0000e-005	0.0000	1.0370
Total	**2.8000e-004**	**4.0000e-004**	**3.8300e-003**	**2.0000e-005**	**4.0200e-003**	**1.0000e-005**	**4.0400e-003**	**1.0200e-003**	**1.0000e-005**	**1.0300e-003**	**0.0000**	**1.0361**	**1.0361**	**4.0000e-005**	**0.0000**	**1.0370**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3100e-003	0.0537	0.0897	1.3000e-004		2.1800e-003	2.1800e-003		2.0000e-003	2.0000e-003	0.0000	11.0173	11.0173	3.5600e-003	0.0000	11.0921
Total	**5.3100e-003**	**0.0537**	**0.0897**	**1.3000e-004**		**2.1800e-003**	**2.1800e-003**		**2.0000e-003**	**2.0000e-003**	**0.0000**	**11.0173**	**11.0173**	**3.5600e-003**	**0.0000**	**11.0921**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	4.0000e-004	3.8300e-003	2.0000e-005	4.0200e-003	1.0000e-005	4.0400e-003	1.0200e-003	1.0000e-005	1.0300e-003	0.0000	1.0361	1.0361	4.0000e-005	0.0000	1.0370
Total	**2.8000e-004**	**4.0000e-004**	**3.8300e-003**	**2.0000e-005**	**4.0200e-003**	**1.0000e-005**	**4.0400e-003**	**1.0200e-003**	**1.0000e-005**	**1.0300e-003**	**0.0000**	**1.0361**	**1.0361**	**4.0000e-005**	**0.0000**	**1.0370**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e

	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported)

Con. orted sq. ore footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	66.00
tblConstructionPhase	NumDays	0.00	43.00
tblConstructionPhase	NumDays	0.00	65.00
tblConstructionPhase	NumDays	0.00	65.00
tblConstructionPhase	PhaseEndDate	10/2/2028	8/31/2028
tblConstructionPhase	PhaseEndDate	4/28/2028	4/30/2028
tblConstructionPhase	PhaseEndDate	9/29/2028	6/30/2028
tblConstructionPhase	PhaseEndDate	7/28/2028	6/30/2028
tblConstructionPhase	PhaseStartDate	7/1/2028	6/1/2028
tblConstructionPhase	PhaseStartDate	7/1/2028	4/1/2028
tblConstructionPhase	PhaseStartDate	5/1/2028	4/1/2028
tblGrading	AcresOfGrading	65.00	0.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	226.00	150.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	HorsePower	46.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripNumber	0.00	513.00
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	6.6728	56.6588	58.1824	0.1506	7.0767	2.3731	9.4498	3.5078	2.1907	5.6984	0.0000	14,401.2869	14,401.2869	4.2280	0.0000	14,490.0756
Total	**6.6728**	**56.6588**	**58.1824**	**0.1506**	**7.0767**	**2.3731**	**9.4498**	**3.5078**	**2.1907**	**5.6984**	**0.0000**	**14,401.2869**	**14,401.2869**	**4.2280**	**0.0000**	**14,490.0756**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	6.6728	56.6588	58.1824	0.1506	7.0767	2.3731	9.4498	3.5078	2.1907	5.6984	0.0000	14,401.2869	14,401.2869	4.2280	0.0000	14,490.0756
Total	**6.6728**	**56.6588**	**58.1824**	**0.1506**	**7.0767**	**2.3731**	**9.4498**	**3.5078**	**2.1907**	**5.6984**	**0.0000**	**14,401.2869**	**14,401.2869**	**4.2280**	**0.0000**	**14,490.0756**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2028	4/30/2028	5	43	
2	Excavation	Site Preparation	4/1/2028	6/30/2028	5	65	
3	Grading	Grading	4/1/2028	6/30/2028	5	65	
4	Construction	Building Construction	6/1/2028	8/31/2028	5	66	
5	Landscaping	Trenching	9/1/2028	11/30/2028	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Construction	Cranes	1	8.00	150	0.29
Construction	Forklifts	1	6.00	150	0.20
Construction	Generator Sets	1	6.00	400	0.74
Construction	Tractors/Loaders/Backhoes	1	8.00	300	0.37
Construction	Welders	1	6.00	150	0.45
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	513.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Construction	5	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743		5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**		**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743	0.0000	5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**	**0.0000**	**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0432	0.5198	2.3300e-003	0.1886	1.3700e-003	0.1900	0.0500	1.2700e-003	0.0513		151.5980	151.5980	5.5700e-003		151.7149
Total	**0.0381**	**0.0432**	**0.5198**	**2.3300e-003**	**0.1886**	**1.3700e-003**	**0.1900**	**0.0500**	**1.2700e-003**	**0.0513**		**151.5980**	**151.5980**	**5.5700e-003**		**151.7149**

3.3 Excavation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6668	6.0815	8.6040	0.0123		0.2969	0.2969		0.2732	0.2732		1,185.6547	1,185.6547	0.3835		1,193.7075
Total	**0.6668**	**6.0815**	**8.6040**	**0.0123**	**0.5303**	**0.2969**	**0.8272**	**0.0573**	**0.2732**	**0.3304**		**1,185.6547**	**1,185.6547**	**0.3835**		**1,193.7075**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7100e-003	6.4800e-003	0.0780	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		22.7397	22.7397	8.4000e-004		22.7572
Total	**5.7100e-003**	**6.4800e-003**	**0.0780**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**		**22.7397**	**22.7397**	**8.4000e-004**		**22.7572**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6668	6.0815	8.6040	0.0123		0.2969	0.2969		0.2732	0.2732	0.0000	1,185.6547	1,185.6547	0.3835		1,193.7075
Total	**0.6668**	**6.0815**	**8.6040**	**0.0123**	**0.5303**	**0.2969**	**0.8272**	**0.0573**	**0.2732**	**0.3304**	**0.0000**	**1,185.6547**	**1,185.6547**	**0.3835**		**1,193.7075**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7100e-003	6.4800e-003	0.0780	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		22.7397	22.7397	8.4000e-004		22.7572
Total	**5.7100e-003**	**6.4800e-003**	**0.0780**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**		**22.7397**	**22.7397**	**8.4000e-004**		**22.7572**

3.4 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9622	24.7448	21.0519	0.0687		0.9900	0.9900		0.9182	0.9182		6,638.4682	6,638.4682	1.9814		6,680.0777
Total	**2.9622**	**24.7448**	**21.0519**	**0.0687**	**6.0221**	**0.9900**	**7.0121**	**3.3102**	**0.9182**	**4.2284**		**6,638.4682**	**6,638.4682**	**1.9814**		**6,680.0777**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.1127	0.8010	1.1134	5.8700e-003	0.1377	0.0244	0.1621	0.0377	0.0224	0.0602		553.0050	553.0050	3.9300e-003		553.0874
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434

Total	**0.1470**	**0.8399**	**1.5813**	**7.9700e-003**	**0.3075**	**0.0256**	**0.3331**	**0.0827**	**0.0236**	**0.1063**		**689.4431**	**689.4431**	**8.9400e-003**		**689.6308**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9622	24.7448	21.0519	0.0687		0.9900	0.9900		0.9182	0.9182	0.0000	6,638.4682	6,638.4682	1.9814		6,680.0777
Total	**2.9622**	**24.7448**	**21.0519**	**0.0687**	**6.0221**	**0.9900**	**7.0121**	**3.3102**	**0.9182**	**4.2284**	**0.0000**	**6,638.4682**	**6,638.4682**	**1.9814**		**6,680.0777**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1127	0.8010	1.1134	5.8700e-003	0.1377	0.0244	0.1621	0.0377	0.0224	0.0602		553.0050	553.0050	3.9300e-003		553.0874
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0342	0.0389	0.4678	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		136.4382	136.4382	5.0100e-003		136.5434
Total	**0.1470**	**0.8399**	**1.5813**	**7.9700e-003**	**0.3075**	**0.0256**	**0.3331**	**0.0827**	**0.0236**	**0.1063**		**689.4431**	**689.4431**	**8.9400e-003**		**689.6308**

3.5 Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810		4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**		**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4045	10.0467	12.8606	0.0402		0.4001	0.4001		0.3810	0.3810	0.0000	4,206.0265	4,206.0265	0.5471		4,217.5155
Total	**1.4045**	**10.0467**	**12.8606**	**0.0402**		**0.4001**	**0.4001**		**0.3810**	**0.3810**	**0.0000**	**4,206.0265**	**4,206.0265**	**0.5471**		**4,217.5155**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Landscaping - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616		373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**		**373.6773**	**373.6773**	**0.1209**		**376.2153**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.5100e-003	0.0108	0.1300	5.8000e-004	0.1291	3.4000e-004	0.1295	0.0326	3.2000e-004	0.0329		37.8995	37.8995	1.3900e-003		37.9287
Total	**9.5100e-003**	**0.0108**	**0.1300**	**5.8000e-004**	**0.1291**	**3.4000e-004**	**0.1295**	**0.0326**	**3.2000e-004**	**0.0329**		**37.8995**	**37.8995**	**1.3900e-003**		**37.9287**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616	0.0000	373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**	**0.0000**	**373.6773**	**373.6773**	**0.1209**		**376.2153**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	9.5100e-003	0.0108	0.1300	5.8000e-004	0.1291	3.4000e-004	0.1295	0.0326	3.2000e-004	0.0329		37.8995	37.8995	1.3900e-003		37.9287
Total	**9.5100e-003**	**0.0108**	**0.1300**	**5.8000e-004**	**0.1291**	**3.4000e-004**	**0.1295**	**0.0326**	**3.2000e-004**	**0.0329**		**37.8995**	**37.8995**	**1.3900e-003**		**37.9287**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.01	Acre	0.01	500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Con. orted sq. are footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	41.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	5.00	43.00
tblConstructionPhase	NumDays	1.00	44.00
tblConstructionPhase	PhaseEndDate	11/26/2029	3/31/2030
tblConstructionPhase	PhaseEndDate	3/30/2029	3/31/2029
tblConstructionPhase	PhaseEndDate	8/1/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	7/31/2029	9/30/2029
tblConstructionPhase	PhaseStartDate	10/1/2029	2/1/2030
tblConstructionPhase	PhaseStartDate	6/1/2029	4/1/2029
tblConstructionPhase	PhaseStartDate	6/1/2029	8/1/2029
tblGrading	AcresOfGrading	44.00	0.01
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	435.60	500.00
tblOffRoadEquipment	HorsePower	78.00	150.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00

tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2029	0.1466	1.2631	1.3602	3.5900e-003	0.1635	0.0524	0.2159	0.0793	0.0484	0.1276	0.0000	310.3929	310.3929	0.0838	0.0000	312.1515
2030	7.6300e-003	0.0165	0.0834	1.6000e-004	0.0000	7.0000e-004	7.0000e-004	0.0000	7.0000e-004	7.0000e-004	0.0000	13.4210	13.4210	4.0000e-004	0.0000	13.4294

Total	**0.1542**	**1.2796**	**1.4436**	**3.7500e-003**	**0.1635**	**0.0531**	**0.2166**	**0.0793**	**0.0491**	**0.1283**	**0.0000**	**323.8138**	**323.8138**	**0.0842**	**0.0000**	**325.5809**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2029	0.1466	1.2631	1.3602	3.5900e-003	0.1635	0.0524	0.2159	0.0793	0.0484	0.1276	0.0000	310.3926	310.3926	0.0838	0.0000	312.1512
2030	7.6300e-003	0.0165	0.0834	1.6000e-004	0.0000	7.0000e-004	7.0000e-004	0.0000	7.0000e-004	7.0000e-004	0.0000	13.4209	13.4209	4.0000e-004	0.0000	13.4294
Total	**0.1542**	**1.2796**	**1.4436**	**3.7500e-003**	**0.1635**	**0.0531**	**0.2166**	**0.0793**	**0.0491**	**0.1283**	**0.0000**	**323.8135**	**323.8135**	**0.0842**	**0.0000**	**325.5806**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2100e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.0000e-005	1.0000e-005	6.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0133	0.0133	0.0000	0.0000	0.0133
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0121	0.0121	0.0000	0.0000	0.0122
Total	**2.2200e-003**	**1.0000e-005**	**6.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0254**	**0.0254**	**0.0000**	**0.0000**	**0.0255**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2100e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.0000e-005	1.0000e-005	6.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0133	0.0133	0.0000	0.0000	0.0133
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0121	0.0121	0.0000	0.0000	0.0122
Total	**2.2200e-003**	**1.0000e-005**	**6.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0254**	**0.0254**	**0.0000**	**0.0000**	**0.0255**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2029	3/31/2029	5	22	
2	Excavation	Site Preparation	4/1/2029	5/31/2029	5	44	
3	Grading	Grading	4/1/2029	5/31/2029	5	44	

4	Paving	Paving	8/1/2029	9/30/2029	5	43	
5	Architectural Coatings	Architectural Coating	2/1/2030	3/31/2030	5	41	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.01

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 750; Non-Residential Outdoor: 250 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Architectural Coatings	Air Compressors	1	8.00	150	0.48
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0314	0.2744	0.2898	6.5000e-004		0.0117	0.0117		0.0107	0.0107	0.0000	57.0140	57.0140	0.0184	0.0000	57.4013
Total	**0.0314**	**0.2744**	**0.2898**	**6.5000e-004**	**0.0000**	**0.0117**	**0.0117**	**0.0000**	**0.0107**	**0.0107**	**0.0000**	**57.0140**	**57.0140**	**0.0184**	**0.0000**	**57.4013**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	3.7000e-004	5.1000e-004	4.9900e-003	2.0000e-005	2.0000e-003	2.0000e-005	2.0100e-003	5.3000e-004	1.0000e-005	5.5000e-004	0.0000	1.3924	1.3924	5.0000e-005	0.0000	1.3935
Total	**3.7000e-004**	**5.1000e-004**	**4.9900e-003**	**2.0000e-005**	**2.0000e-003**	**2.0000e-005**	**2.0100e-003**	**5.3000e-004**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**1.3924**	**1.3924**	**5.0000e-005**	**0.0000**	**1.3935**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0314	0.2744	0.2898	6.5000e-004		0.0117	0.0117		0.0107	0.0107	0.0000	57.0140	57.0140	0.0184	0.0000	57.4012
Total	**0.0314**	**0.2744**	**0.2898**	**6.5000e-004**	**0.0000**	**0.0117**	**0.0117**	**0.0000**	**0.0107**	**0.0107**	**0.0000**	**57.0140**	**57.0140**	**0.0184**	**0.0000**	**57.4012**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	5.1000e-004	4.9900e-003	2.0000e-005	2.0000e-003	2.0000e-005	2.0100e-003	5.3000e-004	1.0000e-005	5.5000e-004	0.0000	1.3924	1.3924	5.0000e-005	0.0000	1.3935
Total	**3.7000e-004**	**5.1000e-004**	**4.9900e-003**	**2.0000e-005**	**2.0000e-003**	**2.0000e-005**	**2.0100e-003**	**5.3000e-004**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**1.3924**	**1.3924**	**5.0000e-005**	**0.0000**	**1.3935**

3.3 Excavation - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0117	0.0000	0.0117	1.2600e-003	0.0000	1.2600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0147	0.1338	0.1893	2.7000e-004		6.5300e-003	6.5300e-003		6.0100e-003	6.0100e-003	0.0000	23.6634	23.6634	7.6500e-003	0.0000	23.8241
Total	**0.0147**	**0.1338**	**0.1893**	**2.7000e-004**	**0.0117**	**6.5300e-003**	**0.0182**	**1.2600e-003**	**6.0100e-003**	**7.2700e-003**	**0.0000**	**23.6634**	**23.6634**	**7.6500e-003**	**0.0000**	**23.8241**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.5000e-004	1.5000e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4177	0.4177	2.0000e-005	0.0000	0.4181
Total	**1.1000e-004**	**1.5000e-004**	**1.5000e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4177**	**0.4177**	**2.0000e-005**	**0.0000**	**0.4181**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0117	0.0000	0.0117	1.2600e-003	0.0000	1.2600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0147	0.1338	0.1893	2.7000e-004		6.5300e-003	6.5300e-003		6.0100e-003	6.0100e-003	0.0000	23.6633	23.6633	7.6500e-003	0.0000	23.8241
Total	**0.0147**	**0.1338**	**0.1893**	**2.7000e-004**	**0.0117**	**6.5300e-003**	**0.0182**	**1.2600e-003**	**6.0100e-003**	**7.2700e-003**	**0.0000**	**23.6633**	**23.6633**	**7.6500e-003**	**0.0000**	**23.8241**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.5000e-004	1.5000e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4177	0.4177	2.0000e-005	0.0000	0.4181
Total	**1.1000e-004**	**1.5000e-004**	**1.5000e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4177**	**0.4177**	**2.0000e-005**	**0.0000**	**0.4181**

3.4 Grading - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1330	0.0000	0.1330	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0652	0.5444	0.4631	1.5100e-003		0.0218	0.0218		0.0202	0.0202	0.0000	132.4910	132.4910	0.0396	0.0000	133.3214
Total	**0.0652**	**0.5444**	**0.4631**	**1.5100e-003**	**0.1330**	**0.0218**	**0.1548**	**0.0729**	**0.0202**	**0.0931**	**0.0000**	**132.4910**	**132.4910**	**0.0396**	**0.0000**	**133.3214**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5000e-003	0.0601	0.1045	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4499	36.4499	2.6000e-004	0.0000	36.4554
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	9.3000e-004	8.9800e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5063	2.5063	1.0000e-004	0.0000	2.5084
Total	**9.1600e-003**	**0.0611**	**0.1135**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9562**	**38.9562**	**3.6000e-004**	**0.0000**	**38.9637**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1330	0.0000	0.1330	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0652	0.5444	0.4631	1.5100e-003		0.0218	0.0218		0.0202	0.0202	0.0000	132.4908	132.4908	0.0395	0.0000	133.3213
Total	**0.0652**	**0.5444**	**0.4631**	**1.5100e-003**	**0.1330**	**0.0218**	**0.1548**	**0.0729**	**0.0202**	**0.0931**	**0.0000**	**132.4908**	**132.4908**	**0.0395**	**0.0000**	**133.3213**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5000e-003	0.0601	0.1045	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4499	36.4499	2.6000e-004	0.0000	36.4554

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	9.3000e-004	8.9800e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5063	2.5063	1.0000e-004	0.0000	2.5084
Total	**9.1600e-003**	**0.0611**	**0.1135**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9562**	**38.9562**	**3.6000e-004**	**0.0000**	**38.9637**

3.5 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0252	0.2481	0.2906	6.2000e-004		0.0106	0.0106		9.7400e-003	9.7400e-003	0.0000	54.4170	54.4170	0.0176	0.0000	54.7866
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0252**	**0.2481**	**0.2906**	**6.2000e-004**		**0.0106**	**0.0106**		**9.7400e-003**	**9.7400e-003**	**0.0000**	**54.4170**	**54.4170**	**0.0176**	**0.0000**	**54.7866**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.4000e-004	7.5000e-004	7.3100e-003	3.0000e-005	2.9300e-003	2.0000e-005	2.9500e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.0411	2.0411	8.0000e-005	0.0000	2.0428
Total	**5.4000e-004**	**7.5000e-004**	**7.3100e-003**	**3.0000e-005**	**2.9300e-003**	**2.0000e-005**	**2.9500e-003**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**0.0000**	**2.0411**	**2.0411**	**8.0000e-005**	**0.0000**	**2.0428**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0252	0.2481	0.2906	6.2000e-004		0.0106	0.0106		9.7400e-003	9.7400e-003	0.0000	54.4170	54.4170	0.0176	0.0000	54.7866
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0252**	**0.2481**	**0.2906**	**6.2000e-004**		**0.0106**	**0.0106**		**9.7400e-003**	**9.7400e-003**	**0.0000**	**54.4170**	**54.4170**	**0.0176**	**0.0000**	**54.7866**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.4000e-004	7.5000e-004	7.3100e-003	3.0000e-005	2.9300e-003	2.0000e-005	2.9500e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.0411	2.0411	8.0000e-005	0.0000	2.0428
Total	**5.4000e-004**	**7.5000e-004**	**7.3100e-003**	**3.0000e-005**	**2.9300e-003**	**2.0000e-005**	**2.9500e-003**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**0.0000**	**2.0411**	**2.0411**	**8.0000e-005**	**0.0000**	**2.0428**

3.6 Architectural Coatings - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Archit. Coating	2.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0200e-003	0.0165	0.0834	1.6000e-004		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	13.4210	13.4210	4.0000e-004	0.0000	13.4294
Total	**7.6300e-003**	**0.0165**	**0.0834**	**1.6000e-004**		**7.0000e-004**	**7.0000e-004**		**7.0000e-004**	**7.0000e-004**	**0.0000**	**13.4210**	**13.4210**	**4.0000e-004**	**0.0000**	**13.4294**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0200e-003	0.0165	0.0834	1.6000e-004		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	13.4209	13.4209	4.0000e-004	0.0000	13.4294
Total	**7.6300e-003**	**0.0165**	**0.0834**	**1.6000e-004**		**7.0000e-004**	**7.0000e-004**		**7.0000e-004**	**7.0000e-004**	**0.0000**	**13.4209**	**13.4209**	**4.0000e-004**	**0.0000**	**13.4294**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0000e-005	1.0000e-005	6.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0133	0.0133	0.0000	0.0000	0.0133
Unmitigated	1.0000e-005	1.0000e-005	6.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0133	0.0133	0.0000	0.0000	0.0133

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.02	0.02	0.02	34	34
Total	0.02	0.02	0.02	34	34

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.2100e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	2.2100e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	tons/yr										MT/yr					
Architectural Coating	2.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.2100e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.2100e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0121	0.0000	0.0000	0.0122

Unmitigated	0.0121	0.0000	0.0000	0.0122

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0119148	0.0121	0.0000	0.0000	0.0122
Total		**0.0121**	**0.0000**	**0.0000**	**0.0122**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0119148	0.0121	0.0000	0.0000	0.0122
Total		**0.0121**	**0.0000**	**0.0000**	**0.0122**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.01	Acre	0.01	500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Con. orted sq. ore footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	41.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	5.00	43.00
tblConstructionPhase	NumDays	1.00	44.00
tblConstructionPhase	PhaseEndDate	11/26/2029	3/31/2030
tblConstructionPhase	PhaseEndDate	3/30/2029	3/31/2029
tblConstructionPhase	PhaseEndDate	8/1/2029	5/31/2029
tblConstructionPhase	PhaseEndDate	7/31/2029	9/30/2029
tblConstructionPhase	PhaseStartDate	10/1/2029	2/1/2030
tblConstructionPhase	PhaseStartDate	6/1/2029	4/1/2029
tblConstructionPhase	PhaseStartDate	6/1/2029	8/1/2029
tblGrading	AcresOfGrading	44.00	0.01
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	435.60	500.00
tblOffRoadEquipment	HorsePower	78.00	150.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	130.00	400.00

tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2029	4.0372	33.5064	33.8364	0.1028	7.2295	1.3690	8.5985	3.5483	1.2669	4.8152	0.0000	9,810.2706	9,810.2706	2.3835	0.0000	9,860.3251
2030	0.3723	0.8038	4.0699	7.6200e-003	0.0000	0.0343	0.0343	0.0000	0.0343	0.0343	0.0000	721.6617	721.6617	0.0216	0.0000	722.1150

Total	**4.4094**	**34.3102**	**37.9063**	**0.1105**	**7.2295**	**1.4033**	**8.6328**	**3.5483**	**1.3012**	**4.8495**	**0.0000**	**10,531.9323**	**10,531.9323**	**2.4051**	**0.0000**	**10,582.4401**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2029	4.0372	33.5064	33.8364	0.1028	7.2295	1.3690	8.5985	3.5483	1.2669	4.8152	0.0000	9,810.2706	9,810.2706	2.3835	0.0000	9,860.3251
2030	0.3723	0.8038	4.0699	7.6200e-003	0.0000	0.0343	0.0343	0.0000	0.0343	0.0343	0.0000	721.6617	721.6617	0.0216	0.0000	722.1150
Total	**4.4094**	**34.3102**	**37.9063**	**0.1105**	**7.2295**	**1.4033**	**8.6328**	**3.5483**	**1.3012**	**4.8495**	**0.0000**	**10,531.9323**	**10,531.9323**	**2.4051**	**0.0000**	**10,582.4401**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0121	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.0000e-005	7.0000e-005	3.2000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005		0.0844	0.0844	0.0000		0.0844
Total	**0.0122**	**7.0000e-005**	**3.2000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**		**0.0844**	**0.0844**	**0.0000**	**0.0000**	**0.0844**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0121	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.0000e-005	7.0000e-005	3.2000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005		0.0844	0.0844	0.0000		0.0844
Total	**0.0122**	**7.0000e-005**	**3.2000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**		**0.0844**	**0.0844**	**0.0000**	**0.0000**	**0.0844**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2029	3/31/2029	5	22	
2	Excavation	Site Preparation	4/1/2029	5/31/2029	5	44	
3	Grading	Grading	4/1/2029	5/31/2029	5	44	
4	Paving	Paving	8/1/2029	9/30/2029	5	43	
5	Architectural Coatings	Architectural Coating	2/1/2030	3/31/2030	5	41	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.01

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 750; Non-Residential Outdoor: 250 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Architectural Coatings	Air Compressors	1	8.00	150	0.48
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Excavation	Graders	1	8.00	174	0.41
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Architectural Coatings	1	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743		5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**		**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0365	0.0414	0.5009	2.3300e-003	0.1886	1.3800e-003	0.1900	0.0500	1.2800e-003	0.0513		150.4949	150.4949	5.4200e-003		150.6088
Total	**0.0365**	**0.0414**	**0.5009**	**2.3300e-003**	**0.1886**	**1.3800e-003**	**0.1900**	**0.0500**	**1.2800e-003**	**0.0513**		**150.4949**	**150.4949**	**5.4200e-003**		**150.6088**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743	0.0000	5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**	**0.0000**	**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0365	0.0414	0.5009	2.3300e-003	0.1886	1.3800e-003	0.1900	0.0500	1.2800e-003	0.0513		150.4949	150.4949	5.4200e-003		150.6088
Total	**0.0365**	**0.0414**	**0.5009**	**2.3300e-003**	**0.1886**	**1.3800e-003**	**0.1900**	**0.0500**	**1.2800e-003**	**0.0513**		**150.4949**	**150.4949**	**5.4200e-003**		**150.6088**

3.3 Excavation - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000

Off-Road	0.6668	6.0815	8.6040	0.0123		0.2969	0.2969		0.2732	0.2732		1,185.6547	1,185.6547	0.3835		1,193.7075
Total	**0.6668**	**6.0815**	**8.6040**	**0.0123**	**0.5303**	**0.2969**	**0.8272**	**0.0573**	**0.2732**	**0.3304**		**1,185.6547**	**1,185.6547**	**0.3835**		**1,193.7075**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.4800e-003	6.2100e-003	0.0751	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		22.5742	22.5742	8.1000e-004		22.5913
Total	**5.4800e-003**	**6.2100e-003**	**0.0751**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.7000e-003**		**22.5742**	**22.5742**	**8.1000e-004**		**22.5913**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6668	6.0815	8.6040	0.0123		0.2969	0.2969		0.2732	0.2732	0.0000	1,185.6547	1,185.6547	0.3835		1,193.7075
Total	**0.6668**	**6.0815**	**8.6040**	**0.0123**	**0.5303**	**0.2969**	**0.8272**	**0.0573**	**0.2732**	**0.3304**	**0.0000**	**1,185.6547**	**1,185.6547**	**0.3835**		**1,193.7075**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.4800e-003	6.2100e-003	0.0751	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		22.5742	22.5742	8.1000e-004		22.5913
Total	**5.4800e-003**	**6.2100e-003**	**0.0751**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.7000e-003**		**22.5742**	**22.5742**	**8.1000e-004**		**22.5913**

3.4 Grading - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0459	0.0000	6.0459	3.3138	0.0000	3.3138			0.0000			0.0000
Off-Road	2.9622	24.7448	21.0519	0.0687		0.9900	0.9900		0.9182	0.9182		6,638.4682	6,638.4682	1.9814		6,680.0777
Total	**2.9622**	**24.7448**	**21.0519**	**0.0687**	**6.0459**	**0.9900**	**7.0359**	**3.3138**	**0.9182**	**4.2320**		**6,638.4682**	**6,638.4682**	**1.9814**		**6,680.0777**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3698	2.6367	3.6547	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1282	1,828.1282	0.0130		1,828.4007

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0329	0.0373	0.4508	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		135.4454	135.4454	4.8800e-003		135.5479
Total	**0.4027**	**2.6740**	**4.1055**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,963.5736**	**1,963.5736**	**0.0179**		**1,963.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0459	0.0000	6.0459	3.3138	0.0000	3.3138			0.0000			0.0000
Off-Road	2.9622	24.7448	21.0519	0.0687		0.9900	0.9900		0.9182	0.9182	0.0000	6,638.4682	6,638.4682	1.9814		6,680.0777
Total	**2.9622**	**24.7448**	**21.0519**	**0.0687**	**6.0459**	**0.9900**	**7.0359**	**3.3138**	**0.9182**	**4.2320**	**0.0000**	**6,638.4682**	**6,638.4682**	**1.9814**		**6,680.0777**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3698	2.6367	3.6547	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1282	1,828.1282	0.0130		1,828.4007
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0329	0.0373	0.4508	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		135.4454	135.4454	4.8800e-003		135.5479
Total	**0.4027**	**2.6740**	**4.1055**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,963.5736**	**1,963.5736**	**0.0179**		**1,963.9486**

3.5 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1701	11.5398	13.5167	0.0288		0.4923	0.4923		0.4529	0.4529		2,789.9775	2,789.9775	0.9023		2,808.9266
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1701**	**11.5398**	**13.5167**	**0.0288**		**0.4923**	**0.4923**		**0.4529**	**0.4529**		**2,789.9775**	**2,789.9775**	**0.9023**		**2,808.9266**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0274	0.0311	0.3757	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.8712	112.8712	4.0700e-003		112.9566
Total	**0.0274**	**0.0311**	**0.3757**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.8712**	**112.8712**	**4.0700e-003**		**112.9566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	1.1701	11.5398	13.5167	0.0288		0.4923	0.4923		0.4529	0.4529	0.0000	2,789.9775	2,789.9775	0.9023		2,808.9266
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1701**	**11.5398**	**13.5167**	**0.0288**		**0.4923**	**0.4923**		**0.4529**	**0.4529**	**0.0000**	**2,789.9775**	**2,789.9775**	**0.9023**		**2,808.9266**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0274	0.0311	0.3757	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.8712	112.8712	4.0700e-003		112.9566
Total	**0.0274**	**0.0311**	**0.3757**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.8712**	**112.8712**	**4.0700e-003**		**112.9566**

3.6 Architectural Coatings - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.1272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2451	0.8038	4.0699	7.6200e-003		0.0343	0.0343		0.0343	0.0343		721.6617	721.6617	0.0216		722.1150
Total	**0.3723**	**0.8038**	**4.0699**	**7.6200e-003**		**0.0343**	**0.0343**		**0.0343**	**0.0343**		**721.6617**	**721.6617**	**0.0216**		**722.1150**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.1272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2451	0.8038	4.0699	7.6200e-003		0.0343	0.0343		0.0343	0.0343	0.0000	721.6617	721.6617	0.0216		722.1150
Total	**0.3723**	**0.8038**	**4.0699**	**7.6200e-003**		**0.0343**	**0.0343**		**0.0343**	**0.0343**	**0.0000**	**721.6617**	**721.6617**	**0.0216**		**722.1150**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.0000e-005	7.0000e-005	3.2000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005		0.0844	0.0844	0.0000		0.0844
Unmitigated	3.0000e-005	7.0000e-005	3.2000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005		0.0844	0.0844	0.0000		0.0844

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.02	0.02	0.02	34	34
Total	0.02	0.02	0.02	34	34

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0121	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0121	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Architectural Coating	1.4300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0107					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0121**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.4300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0107					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0121**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	200.00	Space	1.80	48,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Conv. ted sq. are footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	PhaseEndDate	8/30/2029	6/30/2029
tblConstructionPhase	PhaseEndDate	6/29/2029	6/30/2029
tblConstructionPhase	PhaseStartDate	7/1/2029	5/1/2029
tblGrading	AcresOfGrading	44.00	1.10
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	80,000.00	48,000.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2029	0.1586	1.3648	1.4446	3.7100e-003	0.2810	0.0570	0.3380	0.1433	0.0524	0.1957	0.0000	321.5554	321.5554	0.0905	0.0000	323.4551
Total	**0.1586**	**1.3648**	**1.4446**	**3.7100e-003**	**0.2810**	**0.0570**	**0.3380**	**0.1433**	**0.0524**	**0.1957**	**0.0000**	**321.5554**	**321.5554**	**0.0905**	**0.0000**	**323.4551**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					

2029	0.1586	1.3647	1.4446	3.7100e-003	0.2810	0.0570	0.3380	0.1433	0.0524	0.1957	0.0000	321.5551	321.5551	0.0905	0.0000	323.4547
Total	**0.1586**	**1.3647**	**1.4446**	**3.7100e-003**	**0.2810**	**0.0570**	**0.3380**	**0.1433**	**0.0524**	**0.1957**	**0.0000**	**321.5551**	**321.5551**	**0.0905**	**0.0000**	**323.4547**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1884	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	12.2881	12.2881	5.6000e-004	1.1000e-004	12.3354
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1884**	**2.0000e-005**	**1.8300e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**12.2917**	**12.2917**	**5.7000e-004**	**1.1000e-004**	**12.3392**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Area	0.1884	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	12.2881	12.2881	5.6000e-004	1.1000e-004	12.3354
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1884**	**2.0000e-005**	**1.8300e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**12.2917**	**12.2917**	**5.7000e-004**	**1.1000e-004**	**12.3392**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2029	4/30/2029	5	21	
2	Excavation	Site Preparation	5/1/2029	6/30/2029	5	44	
3	Grading	Grading	5/1/2029	6/30/2029	5	44	
4	Paving	Paving	7/1/2029	8/31/2029	5	45	
5	Landscaping	Trenching	9/1/2029	10/31/2029	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Excavation	Graders	1	8.00	174	0.41
Excavation	Rubber Tired Dozers	1	7.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0300	0.2619	0.2767	6.2000e-004		0.0111	0.0111		0.0102	0.0102	0.0000	54.4225	54.4225	0.0176	0.0000	54.7921
Total	**0.0300**	**0.2619**	**0.2767**	**6.2000e-004**	**0.0000**	**0.0111**	**0.0111**	**0.0000**	**0.0102**	**0.0102**	**0.0000**	**54.4225**	**54.4225**	**0.0176**	**0.0000**	**54.7921**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	4.9000e-004	4.7600e-003	2.0000e-005	1.9100e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.3291	1.3291	5.0000e-005	0.0000	1.3302
Total	**3.5000e-004**	**4.9000e-004**	**4.7600e-003**	**2.0000e-005**	**1.9100e-003**	**1.0000e-005**	**1.9200e-003**	**5.1000e-004**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**1.3291**	**1.3291**	**5.0000e-005**	**0.0000**	**1.3302**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0300	0.2619	0.2767	6.2000e-004		0.0111	0.0111		0.0102	0.0102	0.0000	54.4224	54.4224	0.0176	0.0000	54.7921
Total	**0.0300**	**0.2619**	**0.2767**	**6.2000e-004**	**0.0000**	**0.0111**	**0.0111**	**0.0000**	**0.0102**	**0.0102**	**0.0000**	**54.4224**	**54.4224**	**0.0176**	**0.0000**	**54.7921**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	4.9000e-004	4.7600e-003	2.0000e-005	1.9100e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.3291	1.3291	5.0000e-005	0.0000	1.3302
Total	**3.5000e-004**	**4.9000e-004**	**4.7600e-003**	**2.0000e-005**	**1.9100e-003**	**1.0000e-005**	**1.9200e-003**	**5.1000e-004**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**1.3291**	**1.3291**	**5.0000e-005**	**0.0000**	**1.3302**

3.3 Excavation - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1276	0.0000	0.1276	0.0650	0.0000	0.0650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0274	0.2505	0.2918	4.4000e-004		0.0118	0.0118		0.0108	0.0108	0.0000	38.7145	38.7145	0.0125	0.0000	38.9775

Total	**0.0274**	**0.2505**	**0.2918**	**4.4000e-004**	**0.1276**	**0.0118**	**0.1393**	**0.0650**	**0.0108**	**0.0758**	**0.0000**	**38.7145**	**38.7145**	**0.0125**	**0.0000**	**38.9775**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.5000e-004	1.5000e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4177	0.4177	2.0000e-005	0.0000	0.4181
Total	**1.1000e-004**	**1.5000e-004**	**1.5000e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4177**	**0.4177**	**2.0000e-005**	**0.0000**	**0.4181**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1276	0.0000	0.1276	0.0650	0.0000	0.0650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0274	0.2505	0.2918	4.4000e-004		0.0118	0.0118		0.0108	0.0108	0.0000	38.7145	38.7145	0.0125	0.0000	38.9774
Total	**0.0274**	**0.2505**	**0.2918**	**4.4000e-004**	**0.1276**	**0.0118**	**0.1393**	**0.0650**	**0.0108**	**0.0758**	**0.0000**	**38.7145**	**38.7145**	**0.0125**	**0.0000**	**38.9774**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.5000e-004	1.5000e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4177	0.4177	2.0000e-005	0.0000	0.4181
Total	**1.1000e-004**	**1.5000e-004**	**1.5000e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4177**	**0.4177**	**2.0000e-005**	**0.0000**	**0.4181**

3.4 Grading - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1336	0.0000	0.1336	0.0730	0.0000	0.0730	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0587	0.4945	0.3830	1.3700e-003		0.0197	0.0197		0.0182	0.0182	0.0000	120.6625	120.6625	0.0390	0.0000	121.4820
Total	**0.0587**	**0.4945**	**0.3830**	**1.3700e-003**	**0.1336**	**0.0197**	**0.1533**	**0.0730**	**0.0182**	**0.0911**	**0.0000**	**120.6625**	**120.6625**	**0.0390**	**0.0000**	**121.4820**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5000e-003	0.0601	0.1045	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4499	36.4499	2.6000e-004	0.0000	36.4554
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	6.6000e-004	9.3000e-004	8.9800e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5063	2.5063	1.0000e-004	0.0000	2.5084
Total	**9.1600e-003**	**0.0611**	**0.1135**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9562**	**38.9562**	**3.6000e-004**	**0.0000**	**38.9637**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1336	0.0000	0.1336	0.0730	0.0000	0.0730	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0587	0.4945	0.3830	1.3700e-003		0.0197	0.0197		0.0182	0.0182	0.0000	120.6624	120.6624	0.0390	0.0000	121.4819
Total	**0.0587**	**0.4945**	**0.3830**	**1.3700e-003**	**0.1336**	**0.0197**	**0.1533**	**0.0730**	**0.0182**	**0.0911**	**0.0000**	**120.6624**	**120.6624**	**0.0390**	**0.0000**	**121.4819**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5000e-003	0.0601	0.1045	4.3000e-004	9.6900e-003	1.7800e-003	0.0115	2.6600e-003	1.6300e-003	4.3000e-003	0.0000	36.4499	36.4499	2.6000e-004	0.0000	36.4554
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	9.3000e-004	8.9800e-003	4.0000e-005	3.5900e-003	3.0000e-005	3.6200e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	2.5063	2.5063	1.0000e-004	0.0000	2.5084
Total	**9.1600e-003**	**0.0611**	**0.1135**	**4.7000e-004**	**0.0133**	**1.8100e-003**	**0.0151**	**3.6200e-003**	**1.6600e-003**	**5.2800e-003**	**0.0000**	**38.9562**	**38.9562**	**3.6000e-004**	**0.0000**	**38.9637**

3.5 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0263	0.2597	0.3041	6.5000e-004		0.0111	0.0111		0.0102	0.0102	0.0000	56.9481	56.9481	0.0184	0.0000	57.3348
Paving	2.3600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0287**	**0.2597**	**0.3041**	**6.5000e-004**		**0.0111**	**0.0111**		**0.0102**	**0.0102**	**0.0000**	**56.9481**	**56.9481**	**0.0184**	**0.0000**	**57.3348**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	7.9000e-004	7.6500e-003	4.0000e-005	3.0600e-003	2.0000e-005	3.0900e-003	8.1000e-004	2.0000e-005	8.4000e-004	0.0000	2.1361	2.1361	8.0000e-005	0.0000	2.1378
Total	**5.6000e-004**	**7.9000e-004**	**7.6500e-003**	**4.0000e-005**	**3.0600e-003**	**2.0000e-005**	**3.0900e-003**	**8.1000e-004**	**2.0000e-005**	**8.4000e-004**	**0.0000**	**2.1361**	**2.1361**	**8.0000e-005**	**0.0000**	**2.1378**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0263	0.2597	0.3041	6.5000e-004		0.0111	0.0111		0.0102	0.0102	0.0000	56.9480	56.9480	0.0184	0.0000	57.3348

Paving	2.3600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0287**	**0.2597**	**0.3041**	**6.5000e-004**		**0.0111**	**0.0111**		**0.0102**	**0.0102**	**0.0000**	**56.9480**	**56.9480**	**0.0184**	**0.0000**	**57.3348**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	7.9000e-004	7.6500e-003	4.0000e-005	3.0600e-003	2.0000e-005	3.0900e-003	8.1000e-004	2.0000e-005	8.4000e-004	0.0000	2.1361	2.1361	8.0000e-005	0.0000	2.1378
Total	**5.6000e-004**	**7.9000e-004**	**7.6500e-003**	**4.0000e-005**	**3.0600e-003**	**2.0000e-005**	**3.0900e-003**	**8.1000e-004**	**2.0000e-005**	**8.4000e-004**	**0.0000**	**2.1361**	**2.1361**	**8.0000e-005**	**0.0000**	**2.1378**

3.6 Landscaping - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5100e-003	0.0355	0.0593	8.0000e-005		1.4400e-003	1.4400e-003		1.3200e-003	1.3200e-003	0.0000	7.2884	7.2884	2.3600e-003	0.0000	7.3379
Total	**3.5100e-003**	**0.0355**	**0.0593**	**8.0000e-005**		**1.4400e-003**	**1.4400e-003**		**1.3200e-003**	**1.3200e-003**	**0.0000**	**7.2884**	**7.2884**	**2.3600e-003**	**0.0000**	**7.3379**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	2.5000e-004	2.4400e-003	1.0000e-005	9.8000e-004	1.0000e-005	9.8000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.6804	0.6804	3.0000e-005	0.0000	0.6809
Total	**1.8000e-004**	**2.5000e-004**	**2.4400e-003**	**1.0000e-005**	**9.8000e-004**	**1.0000e-005**	**9.8000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.6804**	**0.6804**	**3.0000e-005**	**0.0000**	**0.6809**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5100e-003	0.0355	0.0593	8.0000e-005		1.4400e-003	1.4400e-003		1.3200e-003	1.3200e-003	0.0000	7.2884	7.2884	2.3600e-003	0.0000	7.3379
Total	**3.5100e-003**	**0.0355**	**0.0593**	**8.0000e-005**		**1.4400e-003**	**1.4400e-003**		**1.3200e-003**	**1.3200e-003**	**0.0000**	**7.2884**	**7.2884**	**2.3600e-003**	**0.0000**	**7.3379**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	2.5000e-004	2.4400e-003	1.0000e-005	9.8000e-004	1.0000e-005	9.8000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.6804	0.6804	3.0000e-005	0.0000	0.6809
Total	**1.8000e-004**	**2.5000e-004**	**2.4400e-003**	**1.0000e-005**	**9.8000e-004**	**1.0000e-005**	**9.8000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.6804**	**0.6804**	**3.0000e-005**	**0.0000**	**0.6809**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	12.2881	12.2881	5.6000e-004	1.1000e-004	12.3354
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	12.2881	12.2881	5.6000e-004	1.1000e-004	12.3354
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	42240	12.2881	5.6000e-004	1.1000e-004	12.3354
Total		**12.2881**	**5.6000e-004**	**1.1000e-004**	**12.3354**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

Parking Lot	42240	12.2881	5.6000e-004	1.1000e-004	12.3354
Total		**12.2881**	**5.6000e-004**	**1.1000e-004**	**12.3354**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1884	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7700e-003
Unmitigated	0.1884	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	7.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1875					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7700e-003
Total	**0.1884**	**2.0000e-005**	**1.8300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5700e-003**	**3.5700e-003**	**1.0000e-005**	**0.0000**	**3.7700e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	7.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1875					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7700e-003
Total	**0.1884**	**2.0000e-005**	**1.8300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5700e-003**	**3.5700e-003**	**1.0000e-005**	**0.0000**	**3.7700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000

Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	200.00	Space	1.80	48,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total phase 3 lot acreage equals 16 but not sure how to break it up into 3a, 3b, etc.

Construction Phase - Per Phase 3 tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Off-road Equipment - Per Equipment Assumptions # tab

Trips and VMT - Defaults

Demolition - Per Phase Assumptions # tab

Grading - Per Phase Assumptions # tab (Material imported = 101,000 cy total divided by 11 Sub-phases in Phase 3)

Conv. ted sq. are footage to acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	PhaseEndDate	8/30/2029	6/30/2029
tblConstructionPhase	PhaseEndDate	6/29/2029	6/30/2029
tblConstructionPhase	PhaseStartDate	7/1/2029	5/1/2029
tblGrading	AcresOfGrading	44.00	1.10
tblGrading	MaterialImported	0.00	9,182.00
tblLandUse	LandUseSquareFeet	80,000.00	48,000.00
tblOffRoadEquipment	HorsePower	9.00	150.00
tblOffRoadEquipment	HorsePower	81.00	250.00
tblOffRoadEquipment	HorsePower	174.00	350.00
tblOffRoadEquipment	HorsePower	125.00	150.00
tblOffRoadEquipment	HorsePower	130.00	400.00
tblOffRoadEquipment	HorsePower	80.00	300.00
tblOffRoadEquipment	HorsePower	255.00	325.00
tblOffRoadEquipment	HorsePower	255.00	250.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	300.00
tblOffRoadEquipment	HorsePower	97.00	150.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	120.00
tblOffRoadEquipment	HorsePower	162.00	350.00
tblOffRoadEquipment	HorsePower	361.00	350.00
tblOffRoadEquipment	HorsePower	97.00	120.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	8.00	6.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2029	4.3195	36.5412	34.8493	0.1044	12.5251	1.5133	14.0384	6.4476	1.3922	7.8398	0.0000	9,971.7432	9,971.7432	2.6014	0.0000	10,026.3721
Total	**4.3195**	**36.5412**	**34.8493**	**0.1044**	**12.5251**	**1.5133**	**14.0384**	**6.4476**	**1.3922**	**7.8398**	**0.0000**	**9,971.7432**	**9,971.7432**	**2.6014**	**0.0000**	**10,026.3721**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					

2029	4.3195	36.5412	34.8493	0.1044	12.5251	1.5133	14.0384	6.4476	1.3922	7.8398	0.0000	9,971.7432	9,971.7432	2.6014	0.0000	10,026.3721
Total	**4.3195**	**36.5412**	**34.8493**	**0.1044**	**12.5251**	**1.5133**	**14.0384**	**6.4476**	**1.3922**	**7.8398**	**0.0000**	**9,971.7432**	**9,971.7432**	**2.6014**	**0.0000**	**10,026.3721**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0332	1.8000e-004	0.0203	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0438	0.0438	1.1000e-004		0.0461
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0332**	**1.8000e-004**	**0.0203**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**7.0000e-005**		**0.0438**	**0.0438**	**1.1000e-004**	**0.0000**	**0.0461**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0332	1.8000e-004	0.0203	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0438	0.0438	1.1000e-004		0.0461

Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0332**	**1.8000e-004**	**0.0203**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**7.0000e-005**		**0.0438**	**0.0438**	**1.1000e-004**	**0.0000**	**0.0461**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2029	4/30/2029	5	21	
2	Excavation	Site Preparation	5/1/2029	6/30/2029	5	44	
3	Grading	Grading	5/1/2029	6/30/2029	5	44	
4	Paving	Paving	7/1/2029	8/31/2029	5	45	
5	Landscaping	Trenching	9/1/2029	10/31/2029	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	6.00	250	0.73
Demolition	Excavators	2	8.00	120	0.38
Demolition	Rubber Tired Dozers	2	8.00	325	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	300	0.37

Excavation	Excavators	1	6.00	120	0.38
Grading	Excavators	1	4.00	350	0.38
Grading	Graders	1	8.00	350	0.41
Grading	Rubber Tired Dozers	1	8.00	250	0.40
Grading	Scrapers	1	4.00	350	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	300	0.37
Paving	Cement and Mortar Mixers	1	6.00	150	0.56
Paving	Pavers	1	8.00	150	0.42
Paving	Paving Equipment	1	6.00	400	0.36
Paving	Rollers	2	8.00	300	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	150	0.37
Landscaping	Tractors/Loaders/Backhoes	2	4.00	120	0.37
Excavation	Graders	1	8.00	174	0.41
Excavation	Rubber Tired Dozers	1	7.00	255	0.40
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	1,148.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743		5,713.3832	5,713.3832	1.8478		5,752.1875
Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**		**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0365	0.0414	0.5009	2.3300e-003	0.1886	1.3800e-003	0.1900	0.0500	1.2800e-003	0.0513		150.4949	150.4949	5.4200e-003		150.6088
Total	**0.0365**	**0.0414**	**0.5009**	**2.3300e-003**	**0.1886**	**1.3800e-003**	**0.1900**	**0.0500**	**1.2800e-003**	**0.0513**		**150.4949**	**150.4949**	**5.4200e-003**		**150.6088**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.8530	24.9430	26.3475	0.0590		1.0590	1.0590		0.9743	0.9743	0.0000	5,713.3832	5,713.3832	1.8478		5,752.1875

Total	**2.8530**	**24.9430**	**26.3475**	**0.0590**	**0.0000**	**1.0590**	**1.0590**	**0.0000**	**0.9743**	**0.9743**	**0.0000**	**5,713.3832**	**5,713.3832**	**1.8478**		**5,752.1875**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0365	0.0414	0.5009	2.3300e-003	0.1886	1.3800e-003	0.1900	0.0500	1.2800e-003	0.0513		150.4949	150.4949	5.4200e-003		150.6088
Total	**0.0365**	**0.0414**	**0.5009**	**2.3300e-003**	**0.1886**	**1.3800e-003**	**0.1900**	**0.0500**	**1.2800e-003**	**0.0513**		**150.4949**	**150.4949**	**5.4200e-003**		**150.6088**

3.3 Excavation - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.2443	11.3855	13.2617	0.0200		0.5340	0.5340		0.4913	0.4913		1,939.7929	1,939.7929	0.6274		1,952.9677
Total	**1.2443**	**11.3855**	**13.2617**	**0.0200**	**5.7996**	**0.5340**	**6.3336**	**2.9537**	**0.4913**	**3.4450**		**1,939.7929**	**1,939.7929**	**0.6274**		**1,952.9677**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.4800e-003	6.2100e-003	0.0751	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		22.5742	22.5742	8.1000e-004		22.5913
Total	**5.4800e-003**	**6.2100e-003**	**0.0751**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.7000e-003**		**22.5742**	**22.5742**	**8.1000e-004**		**22.5913**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.2443	11.3855	13.2617	0.0200		0.5340	0.5340		0.4913	0.4913	0.0000	1,939.7929	1,939.7929	0.6274		1,952.9677
Total	**1.2443**	**11.3855**	**13.2617**	**0.0200**	**5.7996**	**0.5340**	**6.3336**	**2.9537**	**0.4913**	**3.4450**	**0.0000**	**1,939.7929**	**1,939.7929**	**0.6274**		**1,952.9677**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	5.4800e-003	6.2100e-003	0.0751	3.5000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		22.5742	22.5742	8.1000e-004		22.5913
Total	**5.4800e-003**	**6.2100e-003**	**0.0751**	**3.5000e-004**	**0.0283**	**2.1000e-004**	**0.0285**	**7.5000e-003**	**1.9000e-004**	**7.7000e-003**		**22.5742**	**22.5742**	**8.1000e-004**		**22.5913**

3.4 Grading - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0722	0.0000	6.0722	3.3167	0.0000	3.3167			0.0000			0.0000
Off-Road	2.6671	22.4755	17.4070	0.0625		0.8972	0.8972		0.8254	0.8254		6,045.8025	6,045.8025	1.9553		6,086.8645
Total	**2.6671**	**22.4755**	**17.4070**	**0.0625**	**6.0722**	**0.8972**	**6.9694**	**3.3167**	**0.8254**	**4.1420**		**6,045.8025**	**6,045.8025**	**1.9553**		**6,086.8645**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3698	2.6367	3.6547	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1282	1,828.1282	0.0130		1,828.4007
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0329	0.0373	0.4508	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		135.4454	135.4454	4.8800e-003		135.5479
Total	**0.4027**	**2.6740**	**4.1055**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,963.5736**	**1,963.5736**	**0.0179**		**1,963.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0722	0.0000	6.0722	3.3167	0.0000	3.3167			0.0000			0.0000
Off-Road	2.6671	22.4755	17.4070	0.0625		0.8972	0.8972		0.8254	0.8254	0.0000	6,045.8025	6,045.8025	1.9553		6,086.8645
Total	**2.6671**	**22.4755**	**17.4070**	**0.0625**	**6.0722**	**0.8972**	**6.9694**	**3.3167**	**0.8254**	**4.1420**	**0.0000**	**6,045.8025**	**6,045.8025**	**1.9553**		**6,086.8645**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3698	2.6367	3.6547	0.0194	0.4553	0.0807	0.5359	0.1247	0.0742	0.1989		1,828.1282	1,828.1282	0.0130		1,828.4007
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0329	0.0373	0.4508	2.1000e-003	0.1698	1.2400e-003	0.1710	0.0450	1.1500e-003	0.0462		135.4454	135.4454	4.8800e-003		135.5479
Total	**0.4027**	**2.6740**	**4.1055**	**0.0215**	**0.6250**	**0.0819**	**0.7069**	**0.1697**	**0.0754**	**0.2451**		**1,963.5736**	**1,963.5736**	**0.0179**		**1,963.9486**

3.5 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1701	11.5398	13.5167	0.0288		0.4923	0.4923		0.4529	0.4529		2,789.9775	2,789.9775	0.9023		2,808.9266

Paving	0.1048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2749**	**11.5398**	**13.5167**	**0.0288**		**0.4923**	**0.4923**		**0.4529**	**0.4529**		**2,789.9775**	**2,789.9775**	**0.9023**		**2,808.9266**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0274	0.0311	0.3757	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.8712	112.8712	4.0700e-003		112.9566
Total	**0.0274**	**0.0311**	**0.3757**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.8712**	**112.8712**	**4.0700e-003**		**112.9566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1701	11.5398	13.5167	0.0288		0.4923	0.4923		0.4529	0.4529	0.0000	2,789.9775	2,789.9775	0.9023		2,808.9266
Paving	0.1048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2749**	**11.5398**	**13.5167**	**0.0288**		**0.4923**	**0.4923**		**0.4529**	**0.4529**	**0.0000**	**2,789.9775**	**2,789.9775**	**0.9023**		**2,808.9266**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0274	0.0311	0.3757	1.7500e-003	0.1415	1.0300e-003	0.1425	0.0375	9.6000e-004	0.0385		112.8712	112.8712	4.0700e-003		112.9566
Total	**0.0274**	**0.0311**	**0.3757**	**1.7500e-003**	**0.1415**	**1.0300e-003**	**0.1425**	**0.0375**	**9.6000e-004**	**0.0385**		**112.8712**	**112.8712**	**4.0700e-003**		**112.9566**

3.6 Landscaping - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616		373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**		**373.6773**	**373.6773**	**0.1209**		**376.2153**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0472	3.4000e-004	0.0475	0.0125	3.2000e-004	0.0128		37.6237	37.6237	1.3600e-003		37.6522
Total	**9.1300e-003**	**0.0104**	**0.1252**	**5.8000e-004**	**0.0472**	**3.4000e-004**	**0.0475**	**0.0125**	**3.2000e-004**	**0.0128**		**37.6237**	**37.6237**	**1.3600e-003**		**37.6522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1635	1.6517	2.7584	3.8600e-003		0.0669	0.0669		0.0616	0.0616	0.0000	373.6773	373.6773	0.1209		376.2153
Total	**0.1635**	**1.6517**	**2.7584**	**3.8600e-003**		**0.0669**	**0.0669**		**0.0616**	**0.0616**	**0.0000**	**373.6773**	**373.6773**	**0.1209**		**376.2153**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1300e-003	0.0104	0.1252	5.8000e-004	0.0472	3.4000e-004	0.0475	0.0125	3.2000e-004	0.0128		37.6237	37.6237	1.3600e-003		37.6522
Total	**9.1300e-003**	**0.0104**	**0.1252**	**5.8000e-004**	**0.0472**	**3.4000e-004**	**0.0475**	**0.0125**	**3.2000e-004**	**0.0128**		**37.6237**	**37.6237**	**1.3600e-003**		**37.6522**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0332	1.8000e-004	0.0203	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0438	0.0438	1.1000e-004		0.0461
Unmitigated	1.0332	1.8000e-004	0.0203	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0438	0.0438	1.1000e-004		0.0461

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.1100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8600e-003	1.8000e-004	0.0203	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0438	0.0438	1.1000e-004		0.0461
Total	**1.0332**	**1.8000e-004**	**0.0203**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0438**	**0.0438**	**1.1000e-004**		**0.0461**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.1100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8600e-003	1.8000e-004	0.0203	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0438	0.0438	1.1000e-004		0.0461
Total	**1.0332**	**1.8000e-004**	**0.0203**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0438**	**0.0438**	**1.1000e-004**		**0.0461**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	45.00	Acre	45.00	1,960,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total acreage of 3 phases

Construction Phase - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Trips and VMT - Operational emissions only

Grading -

Vehicle Trips - Per TIA Table 7 - Assuming 2,000,000 annual visitors: 5,490 daily weekend trips divided by 3 (phases) divided by 45 acres = 41 trips per da...per acre. 5,150 daily ...calculated...trips divided by 3 (phases) divided by 45 acres = 38 trips per da...per acre

Water And Wastewater - From O&M Assumptions REV tab

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	ST_TR	1.59	41.00
tblVehicleTrips	SU_TR	1.59	41.00
tblVehicleTrips	WD_TR	1.59	39.00
tblWater	IndoorWaterUseRate	0.00	400,000.00
tblWater	OutdoorWaterUseRate	53,616,660.73	17,191,000.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.9829	8.2522	9.2108	0.0143	1.1148	0.3694	1.4843	0.4241	0.3426	0.7667	0.0000	1,237.0427	1,237.0427	0.1636	0.0000	1,240.4783
2017	1.2348	7.7549	13.2850	0.0251	1.2409	0.2944	1.5353	0.3358	0.2753	0.6111	0.0000	2,055.1474	2,055.1474	0.1293	0.0000	2,057.8616
2018	1.1143	6.9626	12.4502	0.0251	1.2457	0.2538	1.4994	0.3371	0.2374	0.5745	0.0000	2,012.3738	2,012.3738	0.1246	0.0000	2,014.9898
2019	23.2093	3.2173	5.6922	0.0121	0.5842	0.1225	0.7068	0.1579	0.1145	0.2724	0.0000	949.0241	949.0241	0.0719	0.0000	950.5332
Total	**26.5412**	**26.1871**	**40.6382**	**0.0766**	**4.1856**	**1.0402**	**5.2258**	**1.2550**	**0.9698**	**2.2247**	**0.0000**	**6,253.5879**	**6,253.5879**	**0.4893**	**0.0000**	**6,263.8628**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.9829	8.2522	9.2108	0.0143	1.1148	0.3694	1.4843	0.4241	0.3426	0.7667	0.0000	1,237.0421	1,237.0421	0.1636	0.0000	1,240.4777
2017	1.2348	7.7549	13.2850	0.0251	1.2409	0.2944	1.5353	0.3358	0.2753	0.6111	0.0000	2,055.1470	2,055.1470	0.1293	0.0000	2,057.8612
2018	1.1143	6.9626	12.4502	0.0251	1.2457	0.2538	1.4994	0.3371	0.2374	0.5745	0.0000	2,012.3735	2,012.3735	0.1246	0.0000	2,014.9894
2019	23.2093	3.2173	5.6922	0.0121	0.5842	0.1225	0.7068	0.1579	0.1145	0.2724	0.0000	949.0238	949.0238	0.0719	0.0000	950.5329
Total	**26.5412**	**26.1871**	**40.6382**	**0.0766**	**4.1856**	**1.0402**	**5.2258**	**1.2550**	**0.9698**	**2.2247**	**0.0000**	**6,253.5864**	**6,253.5864**	**0.4893**	**0.0000**	**6,263.8612**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.6777	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.1403	3.1559	11.9194	0.0218	1.4218	0.0400	1.4619	0.3821	0.0368	0.4190	0.0000	1,706.1792	1,706.1792	0.0667	0.0000	1,707.5804
Waste						0.0000	0.0000		0.0000	0.0000	0.7856	0.0000	0.7856	0.0464	0.0000	1.7605
Water						0.0000	0.0000		0.0000	0.0000	0.1269	18.1334	18.2603	0.0139	4.8000e-004	18.6992

Total	**9.8180**	**3.1559**	**11.9198**	**0.0218**	**1.4218**	**0.0400**	**1.4619**	**0.3821**	**0.0368**	**0.4190**	**0.9125**	**1,724.3134**	**1,725.2259**	**0.1270**	**4.8000e-004**	**1,728.0410**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.6777	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.1403	3.1559	11.9194	0.0218	1.4218	0.0400	1.4619	0.3821	0.0368	0.4190	0.0000	1,706.1792	1,706.1792	0.0667	0.0000	1,707.5804
Waste						0.0000	0.0000		0.0000	0.0000	0.7856	0.0000	0.7856	0.0464	0.0000	1.7605
Water						0.0000	0.0000		0.0000	0.0000	0.1269	18.1334	18.2603	0.0139	4.8000e-004	18.6990
Total	**9.8180**	**3.1559**	**11.9198**	**0.0218**	**1.4218**	**0.0400**	**1.4619**	**0.3821**	**0.0368**	**0.4190**	**0.9125**	**1,724.3134**	**1,725.2259**	**0.1270**	**4.8000e-004**	**1,728.0408**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	3/10/2016	5	50	
2	Site Preparation	Site Preparation	3/11/2016	4/21/2016	5	30	
3	Grading	Grading	4/22/2016	8/4/2016	5	75	
4	Building Construction	Building Construction	8/5/2016	6/6/2019	5	740	

5	Paving	Paving	6/7/2019	8/22/2019	5	55	
6	Architectural Coating	Architectural Coating	8/23/2019	11/7/2019	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,940,300; Non-Residential Outdoor: 980,100 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	226	0.29
Demolition	Excavators	3	8.00	162	0.38
Grading	Excavators	2	8.00	162	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	165.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	823.00	321.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1072	1.1414	0.8758	1.0000e-003		0.0573	0.0573		0.0534	0.0534	0.0000	92.7434	92.7434	0.0252	0.0000	93.2731
Total	**0.1072**	**1.1414**	**0.8758**	**1.0000e-003**		**0.0573**	**0.0573**		**0.0534**	**0.0534**	**0.0000**	**92.7434**	**92.7434**	**0.0252**	**0.0000**	**93.2731**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4300e-003	2.1200e-003	0.0205	4.0000e-005	3.4000e-003	3.0000e-005	3.4300e-003	9.1000e-004	3.0000e-005	9.3000e-004	0.0000	3.0961	3.0961	1.8000e-004	0.0000	3.0998
Total	**1.4300e-003**	**2.1200e-003**	**0.0205**	**4.0000e-005**	**3.4000e-003**	**3.0000e-005**	**3.4300e-003**	**9.1000e-004**	**3.0000e-005**	**9.3000e-004**	**0.0000**	**3.0961**	**3.0961**	**1.8000e-004**	**0.0000**	**3.0998**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1072	1.1414	0.8758	1.0000e-003		0.0573	0.0573		0.0534	0.0534	0.0000	92.7433	92.7433	0.0252	0.0000	93.2729
Total	**0.1072**	**1.1414**	**0.8758**	**1.0000e-003**		**0.0573**	**0.0573**		**0.0534**	**0.0534**	**0.0000**	**92.7433**	**92.7433**	**0.0252**	**0.0000**	**93.2729**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4300e-003	2.1200e-003	0.0205	4.0000e-005	3.4000e-003	3.0000e-005	3.4300e-003	9.1000e-004	3.0000e-005	9.3000e-004	0.0000	3.0961	3.0961	1.8000e-004	0.0000	3.0998
Total	**1.4300e-003**	**2.1200e-003**	**0.0205**	**4.0000e-005**	**3.4000e-003**	**3.0000e-005**	**3.4300e-003**	**9.1000e-004**	**3.0000e-005**	**9.3000e-004**	**0.0000**	**3.0961**	**3.0961**	**1.8000e-004**	**0.0000**	**3.0998**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0762	0.8195	0.6166	5.9000e-004		0.0441	0.0441		0.0406	0.0406	0.0000	55.3157	55.3157	0.0167	0.0000	55.6661
Total	**0.0762**	**0.8195**	**0.6166**	**5.9000e-004**	**0.2710**	**0.0441**	**0.3151**	**0.1490**	**0.0406**	**0.1895**	**0.0000**	**55.3157**	**55.3157**	**0.0167**	**0.0000**	**55.6661**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0300e-003	1.5300e-003	0.0148	3.0000e-005	2.4500e-003	2.0000e-005	2.4700e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.2292	2.2292	1.3000e-004	0.0000	2.2319
Total	**1.0300e-003**	**1.5300e-003**	**0.0148**	**3.0000e-005**	**2.4500e-003**	**2.0000e-005**	**2.4700e-003**	**6.5000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.2292**	**2.2292**	**1.3000e-004**	**0.0000**	**2.2319**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0762	0.8195	0.6166	5.9000e-004		0.0441	0.0441		0.0406	0.0406	0.0000	55.3156	55.3156	0.0167	0.0000	55.6660
Total	**0.0762**	**0.8195**	**0.6166**	**5.9000e-004**	**0.2710**	**0.0441**	**0.3151**	**0.1490**	**0.0406**	**0.1895**	**0.0000**	**55.3156**	**55.3156**	**0.0167**	**0.0000**	**55.6660**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0300e-003	1.5300e-003	0.0148	3.0000e-005	2.4500e-003	2.0000e-005	2.4700e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.2292	2.2292	1.3000e-004	0.0000	2.2319
Total	**1.0300e-003**	**1.5300e-003**	**0.0148**	**3.0000e-005**	**2.4500e-003**	**2.0000e-005**	**2.4700e-003**	**6.5000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.2292**	**2.2292**	**1.3000e-004**	**0.0000**	**2.2319**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2430	2.8055	1.8427	2.3100e-003		0.1344	0.1344		0.1237	0.1237	0.0000	218.2340	218.2340	0.0658	0.0000	219.6163
Total	**0.2430**	**2.8055**	**1.8427**	**2.3100e-003**	**0.3253**	**0.1344**	**0.4597**	**0.1349**	**0.1237**	**0.2585**	**0.0000**	**218.2340**	**218.2340**	**0.0658**	**0.0000**	**219.6163**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8700e-003	4.2400e-003	0.0410	8.0000e-005	6.8100e-003	6.0000e-005	6.8700e-003	1.8100e-003	5.0000e-005	1.8600e-003	0.0000	6.1923	6.1923	3.5000e-004	0.0000	6.1996
Total	**2.8700e-003**	**4.2400e-003**	**0.0410**	**8.0000e-005**	**6.8100e-003**	**6.0000e-005**	**6.8700e-003**	**1.8100e-003**	**5.0000e-005**	**1.8600e-003**	**0.0000**	**6.1923**	**6.1923**	**3.5000e-004**	**0.0000**	**6.1996**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2430	2.8055	1.8427	2.3100e-003		0.1344	0.1344		0.1237	0.1237	0.0000	218.2337	218.2337	0.0658	0.0000	219.6161
Total	**0.2430**	**2.8055**	**1.8427**	**2.3100e-003**	**0.3253**	**0.1344**	**0.4597**	**0.1349**	**0.1237**	**0.2585**	**0.0000**	**218.2337**	**218.2337**	**0.0658**	**0.0000**	**219.6161**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8700e-003	4.2400e-003	0.0410	8.0000e-005	6.8100e-003	6.0000e-005	6.8700e-003	1.8100e-003	5.0000e-005	1.8600e-003	0.0000	6.1923	6.1923	3.5000e-004	0.0000	6.1996
Total	**2.8700e-003**	**4.2400e-003**	**0.0410**	**8.0000e-005**	**6.8100e-003**	**6.0000e-005**	**6.8700e-003**	**1.8100e-003**	**5.0000e-005**	**1.8600e-003**	**0.0000**	**6.1923**	**6.1923**	**3.5000e-004**	**0.0000**	**6.1996**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1805	1.5108	0.9809	1.4200e-003		0.1043	0.1043		0.0980	0.0980	0.0000	128.3414	128.3414	0.0318	0.0000	129.0099
Total	**0.1805**	**1.5108**	**0.9809**	**1.4200e-003**		**0.1043**	**0.1043**		**0.0980**	**0.0980**	**0.0000**	**128.3414**	**128.3414**	**0.0318**	**0.0000**	**129.0099**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2038	1.7203	2.4363	4.0800e-003	0.1100	0.0259	0.1359	0.0316	0.0238	0.0554	0.0000	370.7564	370.7564	3.0000e-003	0.0000	370.8194
Worker	0.1669	0.2468	2.3825	4.7300e-003	0.3959	3.3800e-003	0.3993	0.1053	3.1000e-003	0.1084	0.0000	360.1342	360.1342	0.0204	0.0000	360.5623
Total	**0.3707**	**1.9671**	**4.8188**	**8.8100e-003**	**0.5059**	**0.0293**	**0.5352**	**0.1369**	**0.0269**	**0.1638**	**0.0000**	**730.8906**	**730.8906**	**0.0234**	**0.0000**	**731.3817**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1805	1.5108	0.9809	1.4200e-003		0.1043	0.1043		0.0980	0.0980	0.0000	128.3413	128.3413	0.0318	0.0000	129.0097
Total	**0.1805**	**1.5108**	**0.9809**	**1.4200e-003**		**0.1043**	**0.1043**		**0.0980**	**0.0980**	**0.0000**	**128.3413**	**128.3413**	**0.0318**	**0.0000**	**129.0097**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2038	1.7203	2.4363	4.0800e-003	0.1100	0.0259	0.1359	0.0316	0.0238	0.0554	0.0000	370.7564	370.7564	3.0000e-003	0.0000	370.8194
Worker	0.1669	0.2468	2.3825	4.7300e-003	0.3959	3.3800e-003	0.3993	0.1053	3.1000e-003	0.1084	0.0000	360.1342	360.1342	0.0204	0.0000	360.5623
Total	**0.3707**	**1.9671**	**4.8188**	**8.8100e-003**	**0.5059**	**0.0293**	**0.5352**	**0.1369**	**0.0269**	**0.1638**	**0.0000**	**730.8906**	**730.8906**	**0.0234**	**0.0000**	**731.3817**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3228	311.3228	0.0766	0.0000	312.9319
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3228**	**311.3228**	**0.0766**	**0.0000**	**312.9319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4691	3.7804	5.7337	0.0100	0.2698	0.0550	0.3248	0.0775	0.0505	0.1281	0.0000	894.1237	894.1237	6.9800e-003	0.0000	894.2703
Worker	0.3624	0.5418	5.1945	0.0116	0.9711	7.9000e-003	0.9790	0.2583	7.2700e-003	0.2656	0.0000	849.7008	849.7008	0.0457	0.0000	850.6594
Total	**0.8315**	**4.3222**	**10.9282**	**0.0216**	**1.2409**	**0.0629**	**1.3038**	**0.3358**	**0.0578**	**0.3936**	**0.0000**	**1,743.8245**	**1,743.8245**	**0.0526**	**0.0000**	**1,744.9297**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3225	311.3225	0.0766	0.0000	312.9315
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3225**	**311.3225**	**0.0766**	**0.0000**	**312.9315**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4691	3.7804	5.7337	0.0100	0.2698	0.0550	0.3248	0.0775	0.0505	0.1281	0.0000	894.1237	894.1237	6.9800e-003	0.0000	894.2703
Worker	0.3624	0.5418	5.1945	0.0116	0.9711	7.9000e-003	0.9790	0.2583	7.2700e-003	0.2656	0.0000	849.7008	849.7008	0.0457	0.0000	850.6594
Total	**0.8315**	**4.3222**	**10.9282**	**0.0216**	**1.2409**	**0.0629**	**1.3038**	**0.3358**	**0.0578**	**0.3936**	**0.0000**	**1,743.8245**	**1,743.8245**	**0.0526**	**0.0000**	**1,744.9297**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9844	308.9844	0.0756	0.0000	310.5723
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9844**	**308.9844**	**0.0756**	**0.0000**	**310.5723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4432	3.4382	5.5117	0.0100	0.2708	0.0511	0.3220	0.0778	0.0470	0.1248	0.0000	882.0992	882.0992	6.8800e-003	0.0000	882.2437
Worker	0.3228	0.4889	4.6506	0.0116	0.9748	7.6400e-003	0.9825	0.2593	7.0600e-003	0.2664	0.0000	821.2902	821.2902	0.0421	0.0000	822.1737
Total	**0.7660**	**3.9271**	**10.1622**	**0.0217**	**1.2457**	**0.0588**	**1.3044**	**0.3371**	**0.0541**	**0.3912**	**0.0000**	**1,703.3894**	**1,703.3894**	**0.0490**	**0.0000**	**1,704.4174**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9841	308.9841	0.0756	0.0000	310.5720
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9841**	**308.9841**	**0.0756**	**0.0000**	**310.5720**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4432	3.4382	5.5117	0.0100	0.2708	0.0511	0.3220	0.0778	0.0470	0.1248	0.0000	882.0992	882.0992	6.8800e-003	0.0000	882.2437
Worker	0.3228	0.4889	4.6506	0.0116	0.9748	7.6400e-003	0.9825	0.2593	7.0600e-003	0.2664	0.0000	821.2902	821.2902	0.0421	0.0000	822.1737

Total	**0.7660**	**3.9271**	**10.1622**	**0.0217**	**1.2457**	**0.0588**	**1.3044**	**0.3371**	**0.0541**	**0.3912**	**0.0000**	**1,703.3894**	**1,703.3894**	**0.0490**	**0.0000**	**1,704.4174**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1329	1.1845	0.9673	1.5100e-003		0.0726	0.0726		0.0683	0.0683	0.0000	132.2794	132.2794	0.0322	0.0000	132.9552
Total	**0.1329**	**1.1845**	**0.9673**	**1.5100e-003**		**0.0726**	**0.0726**		**0.0683**	**0.0683**	**0.0000**	**132.2794**	**132.2794**	**0.0322**	**0.0000**	**132.9552**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1754	1.3583	2.2575	4.3300e-003	0.1173	0.0206	0.1378	0.0337	0.0189	0.0526	0.0000	375.3084	375.3084	2.9100e-003	0.0000	375.3695
Worker	0.1271	0.1928	1.8272	5.0300e-003	0.4221	3.2300e-003	0.4253	0.1123	2.9900e-003	0.1153	0.0000	342.8129	342.8129	0.0169	0.0000	343.1686
Total	**0.3025**	**1.5511**	**4.0847**	**9.3600e-003**	**0.5393**	**0.0238**	**0.5631**	**0.1460**	**0.0219**	**0.1679**	**0.0000**	**718.1213**	**718.1213**	**0.0199**	**0.0000**	**718.5381**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1329	1.1845	0.9673	1.5100e-003		0.0726	0.0726		0.0683	0.0683	0.0000	132.2792	132.2792	0.0322	0.0000	132.9551
Total	**0.1329**	**1.1845**	**0.9673**	**1.5100e-003**		**0.0726**	**0.0726**		**0.0683**	**0.0683**	**0.0000**	**132.2792**	**132.2792**	**0.0322**	**0.0000**	**132.9551**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1754	1.3583	2.2575	4.3300e-003	0.1173	0.0206	0.1378	0.0337	0.0189	0.0526	0.0000	375.3084	375.3084	2.9100e-003	0.0000	375.3695
Worker	0.1271	0.1928	1.8272	5.0300e-003	0.4221	3.2300e-003	0.4253	0.1123	2.9900e-003	0.1153	0.0000	342.8129	342.8129	0.0169	0.0000	343.1686
Total	**0.3025**	**1.5511**	**4.0847**	**9.3600e-003**	**0.5393**	**0.0238**	**0.5631**	**0.1460**	**0.0219**	**0.1679**	**0.0000**	**718.1213**	**718.1213**	**0.0199**	**0.0000**	**718.5381**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0392	0.4107	0.3950	6.1000e-004		0.0223	0.0223		0.0205	0.0205	0.0000	55.1085	55.1085	0.0174	0.0000	55.4747
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.0392**	**0.4107**	**0.3950**	**6.1000e-004**		**0.0223**	**0.0223**		**0.0205**	**0.0205**	**0.0000**	**55.1085**	**55.1085**	**0.0174**	**0.0000**	**55.4747**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	1.7100e-003	0.0162	4.0000e-005	3.7400e-003	3.0000e-005	3.7700e-003	1.0000e-003	3.0000e-005	1.0200e-003	0.0000	3.0411	3.0411	1.5000e-004	0.0000	3.0443
Total	**1.1300e-003**	**1.7100e-003**	**0.0162**	**4.0000e-005**	**3.7400e-003**	**3.0000e-005**	**3.7700e-003**	**1.0000e-003**	**3.0000e-005**	**1.0200e-003**	**0.0000**	**3.0411**	**3.0411**	**1.5000e-004**	**0.0000**	**3.0443**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0392	0.4107	0.3950	6.1000e-004		0.0223	0.0223		0.0205	0.0205	0.0000	55.1085	55.1085	0.0174	0.0000	55.4746
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0392**	**0.4107**	**0.3950**	**6.1000e-004**		**0.0223**	**0.0223**		**0.0205**	**0.0205**	**0.0000**	**55.1085**	**55.1085**	**0.0174**	**0.0000**	**55.4746**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	1.7100e-003	0.0162	4.0000e-005	3.7400e-003	3.0000e-005	3.7700e-003	1.0000e-003	3.0000e-005	1.0200e-003	0.0000	3.0411	3.0411	1.5000e-004	0.0000	3.0443
Total	**1.1300e-003**	**1.7100e-003**	**0.0162**	**4.0000e-005**	**3.7400e-003**	**3.0000e-005**	**3.7700e-003**	**1.0000e-003**	**3.0000e-005**	**1.0200e-003**	**0.0000**	**3.0411**	**3.0411**	**1.5000e-004**	**0.0000**	**3.0443**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	22.7138					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3300e-003	0.0505	0.0506	8.0000e-005		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	7.0215	7.0215	5.9000e-004	0.0000	7.0339
Total	**22.7212**	**0.0505**	**0.0506**	**8.0000e-005**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**7.0215**	**7.0215**	**5.9000e-004**	**0.0000**	**7.0339**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	0.0124	0.0188	0.1783	4.9000e-004	0.0412	3.2000e-004	0.0415	0.0110	2.9000e-004	0.0113	0.0000	33.4523	33.4523	1.6500e-003	0.0000	33.4870
Total	**0.0124**	**0.0188**	**0.1783**	**4.9000e-004**	**0.0412**	**3.2000e-004**	**0.0415**	**0.0110**	**2.9000e-004**	**0.0113**	**0.0000**	**33.4523**	**33.4523**	**1.6500e-003**	**0.0000**	**33.4870**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	22.7138					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3300e-003	0.0505	0.0506	8.0000e-005		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	7.0214	7.0214	5.9000e-004	0.0000	7.0339
Total	**22.7212**	**0.0505**	**0.0506**	**8.0000e-005**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**7.0214**	**7.0214**	**5.9000e-004**	**0.0000**	**7.0339**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0124	0.0188	0.1783	4.9000e-004	0.0412	3.2000e-004	0.0415	0.0110	2.9000e-004	0.0113	0.0000	33.4523	33.4523	1.6500e-003	0.0000	33.4870
Total	**0.0124**	**0.0188**	**0.1783**	**4.9000e-004**	**0.0412**	**3.2000e-004**	**0.0415**	**0.0110**	**2.9000e-004**	**0.0113**	**0.0000**	**33.4523**	**33.4523**	**1.6500e-003**	**0.0000**	**33.4870**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1403	3.1559	11.9194	0.0218	1.4218	0.0400	1.4619	0.3821	0.0368	0.4190	0.0000	1,706.1792	1,706.1792	0.0667	0.0000	1,707.5804
Unmitigated	1.1403	3.1559	11.9194	0.0218	1.4218	0.0400	1.4619	0.3821	0.0368	0.4190	0.0000	1,706.1792	1,706.1792	0.0667	0.0000	1,707.5804

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1,755.00	1,845.00	1845.00	3,801,563	3,801,563
Total	1,755.00	1,845.00	1,845.00	3,801,563	3,801,563

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					

City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.6777	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Unmitigated	8.6777	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.6556					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Total	**8.6777**	**0.0000**	**4.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-004**	**8.0000e-004**	**0.0000**	**0.0000**	**8.5000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					

Architectural Coating	1.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.6556					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Total	**8.6777**	**0.0000**	**4.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-004**	**8.0000e-004**	**0.0000**	**0.0000**	**8.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	18.2603	0.0139	4.8000e-004	18.6990
Unmitigated	18.2603	0.0139	4.8000e-004	18.6992

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0.4 / 17.191	18.2603	0.0139	4.8000e-004	18.6992
Total		**18.2603**	**0.0139**	**4.8000e-004**	**18.6992**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0.4 / 17.191	18.2603	0.0139	4.8000e-004	18.6990
Total		**18.2603**	**0.0139**	**4.8000e-004**	**18.6990**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.7856	0.0464	0.0000	1.7605
Unmitigated	0.7856	0.0464	0.0000	1.7605

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	3.87	0.7856	0.0464	0.0000	1.7605
Total		**0.7856**	**0.0464**	**0.0000**	**1.7605**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	3.87	0.7856	0.0464	0.0000	1.7605
Total		**0.7856**	**0.0464**	**0.0000**	**1.7605**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	45.00	Acre	45.00	1,960,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total acreage of 3 phases

Construction Phase - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Trips and VMT - Operational emissions only

Grading -

Vehicle Trips - Per TIA Table 7 - Assuming 2,000,000 annual visitors: 5,490 daily weekend trips divided by 3 (phases) divided by 45 acres = 41 trips per da...per acre. 5,150 daily ...calculated...trips divided by 3 (phases) divided by 45 acres = 38 trips per da...per acre

Water And Wastewater - From O&M Assumptions REV tab

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	ST_TR	1.59	41.00
tblVehicleTrips	SU_TR	1.59	41.00
tblVehicleTrips	WD_TR	1.59	39.00
tblWater	IndoorWaterUseRate	0.00	400,000.00
tblWater	OutdoorWaterUseRate	53,616,660.73	17,191,000.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	10.1943	74.9133	100.5524	0.2001	18.2360	3.5858	21.1761	9.9757	3.2989	12.6806	0.0000	18,475.3389	18,475.3389	1.9453	0.0000	18,516.1900
2017	9.3184	58.2041	93.5436	0.1999	9.9035	2.2629	12.1664	2.6711	2.1160	4.7872	0.0000	18,009.4249	18,009.4249	1.0953	0.0000	18,032.4263
2018	8.3898	52.0503	86.9231	0.1997	9.9033	1.9430	11.8463	2.6711	1.8177	4.4888	0.0000	17,560.9258	17,560.9258	1.0516	0.0000	17,583.0083
2019	826.7170	47.2364	81.0144	0.1996	9.9033	1.7045	11.6078	2.6711	1.5945	4.2656	0.0000	17,134.8662	17,134.8662	1.0144	0.0000	17,156.1691
Total	**854.6195**	**232.4042**	**362.0335**	**0.7993**	**47.9461**	**9.4962**	**56.7965**	**17.9890**	**8.8272**	**26.2221**	**0.0000**	**71,180.5558**	**71,180.5558**	**5.1066**	**0.0000**	**71,287.7937**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	10.1943	74.9133	100.5524	0.2001	18.2360	3.5858	21.1761	9.9757	3.2989	12.6806	0.0000	18,475.3389	18,475.3389	1.9453	0.0000	18,516.1900
2017	9.3184	58.2041	93.5436	0.1999	9.9035	2.2629	12.1664	2.6711	2.1160	4.7872	0.0000	18,009.4249	18,009.4249	1.0953	0.0000	18,032.4262
2018	8.3898	52.0503	86.9231	0.1997	9.9033	1.9430	11.8463	2.6711	1.8177	4.4888	0.0000	17,560.9258	17,560.9258	1.0516	0.0000	17,583.0083
2019	826.7170	47.2364	81.0144	0.1996	9.9033	1.7045	11.6078	2.6711	1.5945	4.2656	0.0000	17,134.8662	17,134.8662	1.0144	0.0000	17,156.1691
Total	**854.6195**	**232.4042**	**362.0335**	**0.7993**	**47.9461**	**9.4962**	**56.7965**	**17.9890**	**8.8272**	**26.2221**	**0.0000**	**71,180.5558**	**71,180.5558**	**5.1066**	**0.0000**	**71,287.7936**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	47.5494	4.0000e-005	4.6800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	6.6105	16.9814	62.2334	0.1312	8.4029	0.2276	8.6305	2.2511	0.2093	2.4605		11,276.1446	11,276.1446	0.4189		11,284.9415
Total	**54.1599**	**16.9814**	**62.2381**	**0.1312**	**8.4029**	**0.2276**	**8.6305**	**2.2511**	**0.2094**	**2.4605**		**11,276.1544**	**11,276.1544**	**0.4189**	**0.0000**	**11,284.9519**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	47.5494	4.0000e-005	4.6800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	6.6105	16.9814	62.2334	0.1312	8.4029	0.2276	8.6305	2.2511	0.2093	2.4605		11,276.1446	11,276.1446	0.4189		11,284.9415
Total	**54.1599**	**16.9814**	**62.2381**	**0.1312**	**8.4029**	**0.2276**	**8.6305**	**2.2511**	**0.2094**	**2.4605**		**11,276.1544**	**11,276.1544**	**0.4189**	**0.0000**	**11,284.9519**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	3/10/2016	5	50	
2	Site Preparation	Site Preparation	3/11/2016	4/21/2016	5	30	
3	Grading	Grading	4/22/2016	8/4/2016	5	75	
4	Building Construction	Building Construction	8/5/2016	6/6/2019	5	740	
5	Paving	Paving	6/7/2019	8/22/2019	5	55	
6	Architectural Coating	Architectural Coating	8/23/2019	11/7/2019	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,940,300; Non-Residential Outdoor: 980,100 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	226	0.29
Demolition	Excavators	3	8.00	162	0.38
Grading	Excavators	2	8.00	162	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	165.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	823.00	321.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365		4,089.2841	4,089.2841	1.1121		4,112.6374
Total	**4.2876**	**45.6559**	**35.0303**	**0.0399**		**2.2921**	**2.2921**		**2.1365**	**2.1365**		**4,089.2841**	**4,089.2841**	**1.1121**		**4,112.6374**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0747	0.8738	1.7500e-003	0.1415	1.1600e-003	0.1426	0.0375	1.0700e-003	0.0386		147.0890	147.0890	7.7300e-003		147.2513
Total	**0.0616**	**0.0747**	**0.8738**	**1.7500e-003**	**0.1415**	**1.1600e-003**	**0.1426**	**0.0375**	**1.0700e-003**	**0.0386**		**147.0890**	**147.0890**	**7.7300e-003**		**147.2513**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365	0.0000	4,089.2841	4,089.2841	1.1121		4,112.6374
Total	**4.2876**	**45.6559**	**35.0303**	**0.0399**		**2.2921**	**2.2921**		**2.1365**	**2.1365**	**0.0000**	**4,089.2841**	**4,089.2841**	**1.1121**		**4,112.6374**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0747	0.8738	1.7500e-003	0.1415	1.1600e-003	0.1426	0.0375	1.0700e-003	0.0386		147.0890	147.0890	7.7300e-003		147.2513
Total	**0.0616**	**0.0747**	**0.8738**	**1.7500e-003**	**0.1415**	**1.1600e-003**	**0.1426**	**0.0375**	**1.0700e-003**	**0.0386**		**147.0890**	**147.0890**	**7.7300e-003**		**147.2513**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**		**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.0739**	**0.0896**	**1.0486**	**2.1000e-003**	**0.1698**	**1.4000e-003**	**0.1711**	**0.0450**	**1.2800e-003**	**0.0463**		**176.5068**	**176.5068**	**9.2700e-003**		**176.7016**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**	**0.0000**	**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.0739**	**0.0896**	**1.0486**	**2.1000e-003**	**0.1698**	**1.4000e-003**	**0.1711**	**0.0450**	**1.2800e-003**	**0.0463**		**176.5068**	**176.5068**	**9.2700e-003**		**176.7016**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**8.6733**	**3.5842**	**12.2576**	**3.5965**	**3.2975**	**6.8940**		**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.0822**	**0.0996**	**1.1651**	**2.3400e-003**	**0.1886**	**1.5500e-003**	**0.1902**	**0.0500**	**1.4200e-003**	**0.0515**		**196.1187**	**196.1187**	**0.0103**		**196.3351**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**8.6733**	**3.5842**	**12.2576**	**3.5965**	**3.2975**	**6.8940**	**0.0000**	**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.0822**	**0.0996**	**1.1651**	**2.3400e-003**	**0.1886**	**1.5500e-003**	**0.1902**	**0.0500**	**1.4200e-003**	**0.0515**		**196.1187**	**196.1187**	**0.0103**		**196.3351**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4077	31.3917	34.1014	0.0771	2.1421	0.4863	2.6284	0.6126	0.4472	1.0598		7,735.7686	7,735.7686	0.0618		7,737.0655
Worker	3.3804	4.0976	47.9444	0.0962	7.7611	0.0639	7.8250	2.0585	0.0586	2.1170		8,070.2839	8,070.2839	0.4240		8,079.1884
Total	**6.7881**	**35.4893**	**82.0458**	**0.1733**	**9.9033**	**0.5502**	**10.4534**	**2.6711**	**0.5057**	**3.1768**		**15,806.0525**	**15,806.0525**	**0.4858**		**15,816.2539**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4077	31.3917	34.1014	0.0771	2.1421	0.4863	2.6284	0.6126	0.4472	1.0598		7,735.7686	7,735.7686	0.0618		7,737.0655
Worker	3.3804	4.0976	47.9444	0.0962	7.7611	0.0639	7.8250	2.0585	0.0586	2.1170		8,070.2839	8,070.2839	0.4240		8,079.1884
Total	**6.7881**	**35.4893**	**82.0458**	**0.1733**	**9.9033**	**0.5502**	**10.4534**	**2.6711**	**0.5057**	**3.1768**		**15,806.0525**	**15,806.0525**	**0.4858**		**15,816.2539**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2027	28.1311	32.5738	0.0770	2.1423	0.4209	2.5633	0.6127	0.3871	0.9998		7,605.8761	7,605.8761	0.0585		7,607.1053
Worker	3.0134	3.6673	42.8407	0.0961	7.7611	0.0608	7.8219	2.0585	0.0560	2.1144		7,763.7435	7,763.7435	0.3871		7,771.8720
Total	**6.2161**	**31.7985**	**75.4145**	**0.1731**	**9.9035**	**0.4817**	**10.3852**	**2.6712**	**0.4430**	**3.1142**		**15,369.6196**	**15,369.6196**	**0.4456**		**15,378.9772**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2027	28.1311	32.5738	0.0770	2.1423	0.4209	2.5633	0.6127	0.3871	0.9998		7,605.8761	7,605.8761	0.0585		7,607.1053
Worker	3.0134	3.6673	42.8407	0.0961	7.7611	0.0608	7.8219	2.0585	0.0560	2.1144		7,763.7435	7,763.7435	0.3871		7,771.8720
Total	**6.2161**	**31.7985**	**75.4145**	**0.1731**	**9.9035**	**0.4817**	**10.3852**	**2.6712**	**0.4430**	**3.1142**		**15,369.6196**	**15,369.6196**	**0.4456**		**15,378.9772**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0273	25.4925	30.9699	0.0768	2.1422	0.3901	2.5323	0.6126	0.3588	0.9714		7,474.9003	7,474.9003	0.0575		7,476.1069
Worker	2.6938	3.2970	38.4206	0.0961	7.7611	0.0585	7.8197	2.0585	0.0541	2.1126		7,476.0866	7,476.0866	0.3554		7,483.5497

Total	**5.7211**	**28.7895**	**69.3904**	**0.1729**	**9.9033**	**0.4487**	**10.3520**	**2.6711**	**0.4129**	**3.0840**		**14,950.9869**	**14,950.9869**	**0.4129**		**14,959.6566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0273	25.4925	30.9699	0.0768	2.1422	0.3901	2.5323	0.6126	0.3588	0.9714		7,474.9003	7,474.9003	0.0575		7,476.1069
Worker	2.6938	3.2970	38.4206	0.0961	7.7611	0.0585	7.8197	2.0585	0.0541	2.1126		7,476.0866	7,476.0866	0.3554		7,483.5497
Total	**5.7211**	**28.7895**	**69.3904**	**0.1729**	**9.9033**	**0.4487**	**10.3520**	**2.6711**	**0.4129**	**3.0840**		**14,950.9869**	**14,950.9869**	**0.4129**		**14,959.6566**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083		2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**		**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.7819	23.2681	28.8732	0.0767	2.1421	0.3623	2.5044	0.6126	0.3333	0.9459		7,345.8405	7,345.8405	0.0561		7,347.0178
Worker	2.4616	3.0033	35.0209	0.0961	7.7611	0.0572	7.8183	2.0585	0.0530	2.1115		7,208.2640	7,208.2640	0.3305		7,215.2034
Total	**5.2436**	**26.2714**	**63.8941**	**0.1728**	**9.9033**	**0.4195**	**10.3228**	**2.6711**	**0.3863**	**3.0573**		**14,554.1044**	**14,554.1044**	**0.3865**		**14,562.2212**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083	0.0000	2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**	**0.0000**	**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.7819	23.2681	28.8732	0.0767	2.1421	0.3623	2.5044	0.6126	0.3333	0.9459		7,345.8405	7,345.8405	0.0561		7,347.0178
Worker	2.4616	3.0033	35.0209	0.0961	7.7611	0.0572	7.8183	2.0585	0.0530	2.1115		7,208.2640	7,208.2640	0.3305		7,215.2034
Total	**5.2436**	**26.2714**	**63.8941**	**0.1728**	**9.9033**	**0.4195**	**10.3228**	**2.6711**	**0.3863**	**3.0573**		**14,554.1044**	**14,554.1044**	**0.3865**		**14,562.2212**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4259**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**		**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447	0.0000	2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4259**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**	**0.0000**	**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	825.9570					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	**826.2234**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**281.9473**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4935	0.6021	7.0212	0.0193	1.5560	0.0115	1.5675	0.4127	0.0106	0.4233		1,445.1562	1,445.1562	0.0663		1,446.5475
Total	**0.4935**	**0.6021**	**7.0212**	**0.0193**	**1.5560**	**0.0115**	**1.5675**	**0.4127**	**0.0106**	**0.4233**		**1,445.1562**	**1,445.1562**	**0.0663**		**1,446.5475**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	825.9570					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		281.9473
Total	**826.2234**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**281.9473**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4935	0.6021	7.0212	0.0193	1.5560	0.0115	1.5675	0.4127	0.0106	0.4233		1,445.1562	1,445.1562	0.0663		1,446.5475
Total	**0.4935**	**0.6021**	**7.0212**	**0.0193**	**1.5560**	**0.0115**	**1.5675**	**0.4127**	**0.0106**	**0.4233**		**1,445.1562**	**1,445.1562**	**0.0663**		**1,446.5475**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day				
Mitigated	6.6105	16.9814	62.2334	0.1312	8.4029	0.2276	8.6305	2.2511	0.2093	2.4605	11,276.1446	11,276.1446	0.4189		11,284.9415
Unmitigated	6.6105	16.9814	62.2334	0.1312	8.4029	0.2276	8.6305	2.2511	0.2093	2.4605	11,276.1446	11,276.1446	0.4189		11,284.9415

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1,755.00	1,845.00	1845.00	3,801,563	3,801,563
Total	1,755.00	1,845.00	1,845.00	3,801,563	3,801,563

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	47.5494	4.0000e-005	4.6800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Unmitigated	47.5494	4.0000e-005	4.6800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.6007					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	41.9483					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.6800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Total	**47.5494**	**4.0000e-005**	**4.6800e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.8500e-003**	**9.8500e-003**	**3.0000e-005**		**0.0104**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Consumer Products	41.9483					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.6800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Architectural Coating	5.6007					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**47.5494**	**4.0000e-005**	**4.6800e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.8500e-003**	**9.8500e-003**	**3.0000e-005**		**0.0104**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	45.00	Acre	45.00	1,960,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total acreage of 3 phases

Construction Phase - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Trips and VMT - Operational emissions only

Grading -

Vehicle Trips - Per TIA Table 7 - Assuming 2,000,000 annual visitors: 5,490 daily weekend trips multiplied by 2/3 (phases) divided by 45 acres = 82 trips per da...per acre. 5,150 dail...eekda...trips m...ltiplied b...2/3 (phases) di...ided b...45 acres...77 trips per da...per acre

Water And Wastewater - From O&M Assumptions REV tab

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	1.59	82.00
tblVehicleTrips	SU_TR	1.59	82.00
tblVehicleTrips	WD_TR	1.59	77.00
tblWater	IndoorWaterUseRate	0.00	400,000.00
tblWater	OutdoorWaterUseRate	53,616,660.73	17,191,000.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.9829	8.2522	9.2108	0.0143	1.1148	0.3694	1.4843	0.4241	0.3426	0.7667	0.0000	1,237.0427	1,237.0427	0.1636	0.0000	1,240.4783
2017	1.2348	7.7549	13.2850	0.0251	1.2409	0.2944	1.5353	0.3358	0.2753	0.6111	0.0000	2,055.1474	2,055.1474	0.1293	0.0000	2,057.8616
2018	1.1143	6.9626	12.4502	0.0251	1.2457	0.2538	1.4994	0.3371	0.2374	0.5745	0.0000	2,012.3738	2,012.3738	0.1246	0.0000	2,014.9898
2019	23.2093	3.2173	5.6922	0.0121	0.5842	0.1225	0.7068	0.1579	0.1145	0.2724	0.0000	949.0241	949.0241	0.0719	0.0000	950.5332
Total	**26.5412**	**26.1871**	**40.6382**	**0.0766**	**4.1856**	**1.0402**	**5.2258**	**1.2550**	**0.9698**	**2.2247**	**0.0000**	**6,253.5879**	**6,253.5879**	**0.4893**	**0.0000**	**6,263.8628**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.9829	8.2522	9.2108	0.0143	1.1148	0.3694	1.4843	0.4241	0.3426	0.7667	0.0000	1,237.0421	1,237.0421	0.1636	0.0000	1,240.4777
2017	1.2348	7.7549	13.2850	0.0251	1.2409	0.2944	1.5353	0.3358	0.2753	0.6111	0.0000	2,055.1470	2,055.1470	0.1293	0.0000	2,057.8612
2018	1.1143	6.9626	12.4502	0.0251	1.2457	0.2538	1.4994	0.3371	0.2374	0.5745	0.0000	2,012.3735	2,012.3735	0.1246	0.0000	2,014.9894
2019	23.2093	3.2173	5.6922	0.0121	0.5842	0.1225	0.7068	0.1579	0.1145	0.2724	0.0000	949.0238	949.0238	0.0719	0.0000	950.5329
Total	**26.5412**	**26.1871**	**40.6382**	**0.0766**	**4.1856**	**1.0402**	**5.2258**	**1.2550**	**0.9698**	**2.2247**	**0.0000**	**6,253.5864**	**6,253.5864**	**0.4893**	**0.0000**	**6,263.8612**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.6777	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.8253	4.8151	19.2002	0.0433	2.8183	0.0713	2.8896	0.7574	0.0658	0.8232	0.0000	3,087.3817	3,087.3817	0.1076	0.0000	3,089.6411
Waste						0.0000	0.0000		0.0000	0.0000	0.7856	0.0000	0.7856	0.0464	0.0000	1.7605
Water						0.0000	0.0000		0.0000	0.0000	0.1269	18.1334	18.2603	0.0139	4.8000e-004	18.6992

Total	**10.5030**	**4.8151**	**19.2007**	**0.0433**	**2.8183**	**0.0713**	**2.8896**	**0.7574**	**0.0658**	**0.8232**	**0.9125**	**3,105.5159**	**3,106.4284**	**0.1679**	**4.8000e-004**	**3,110.1016**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.6777	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.8253	4.8151	19.2002	0.0433	2.8183	0.0713	2.8896	0.7574	0.0658	0.8232	0.0000	3,087.3817	3,087.3817	0.1076	0.0000	3,089.6411
Waste						0.0000	0.0000		0.0000	0.0000	0.7856	0.0000	0.7856	0.0464	0.0000	1.7605
Water						0.0000	0.0000		0.0000	0.0000	0.1269	18.1334	18.2603	0.0139	4.8000e-004	18.6990
Total	**10.5030**	**4.8151**	**19.2007**	**0.0433**	**2.8183**	**0.0713**	**2.8896**	**0.7574**	**0.0658**	**0.8232**	**0.9125**	**3,105.5159**	**3,106.4284**	**0.1679**	**4.8000e-004**	**3,110.1014**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	3/10/2016	5	50	
2	Site Preparation	Site Preparation	3/11/2016	4/21/2016	5	30	
3	Grading	Grading	4/22/2016	8/4/2016	5	75	
4	Building Construction	Building Construction	8/5/2016	6/6/2019	5	740	

5	Paving	Paving	6/7/2019	8/22/2019	5	55	
6	Architectural Coating	Architectural Coating	8/23/2019	11/7/2019	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,940,300; Non-Residential Outdoor: 980,100 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	226	0.29
Demolition	Excavators	3	8.00	162	0.38
Grading	Excavators	2	8.00	162	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	165.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	823.00	321.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1072	1.1414	0.8758	1.0000e-003		0.0573	0.0573		0.0534	0.0534	0.0000	92.7434	92.7434	0.0252	0.0000	93.2731
Total	**0.1072**	**1.1414**	**0.8758**	**1.0000e-003**		**0.0573**	**0.0573**		**0.0534**	**0.0534**	**0.0000**	**92.7434**	**92.7434**	**0.0252**	**0.0000**	**93.2731**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4300e-003	2.1200e-003	0.0205	4.0000e-005	3.4000e-003	3.0000e-005	3.4300e-003	9.1000e-004	3.0000e-005	9.3000e-004	0.0000	3.0961	3.0961	1.8000e-004	0.0000	3.0998
Total	**1.4300e-003**	**2.1200e-003**	**0.0205**	**4.0000e-005**	**3.4000e-003**	**3.0000e-005**	**3.4300e-003**	**9.1000e-004**	**3.0000e-005**	**9.3000e-004**	**0.0000**	**3.0961**	**3.0961**	**1.8000e-004**	**0.0000**	**3.0998**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1072	1.1414	0.8758	1.0000e-003		0.0573	0.0573		0.0534	0.0534	0.0000	92.7433	92.7433	0.0252	0.0000	93.2729
Total	**0.1072**	**1.1414**	**0.8758**	**1.0000e-003**		**0.0573**	**0.0573**		**0.0534**	**0.0534**	**0.0000**	**92.7433**	**92.7433**	**0.0252**	**0.0000**	**93.2729**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4300e-003	2.1200e-003	0.0205	4.0000e-005	3.4000e-003	3.0000e-005	3.4300e-003	9.1000e-004	3.0000e-005	9.3000e-004	0.0000	3.0961	3.0961	1.8000e-004	0.0000	3.0998
Total	**1.4300e-003**	**2.1200e-003**	**0.0205**	**4.0000e-005**	**3.4000e-003**	**3.0000e-005**	**3.4300e-003**	**9.1000e-004**	**3.0000e-005**	**9.3000e-004**	**0.0000**	**3.0961**	**3.0961**	**1.8000e-004**	**0.0000**	**3.0998**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0762	0.8195	0.6166	5.9000e-004		0.0441	0.0441		0.0406	0.0406	0.0000	55.3157	55.3157	0.0167	0.0000	55.6661
Total	**0.0762**	**0.8195**	**0.6166**	**5.9000e-004**	**0.2710**	**0.0441**	**0.3151**	**0.1490**	**0.0406**	**0.1895**	**0.0000**	**55.3157**	**55.3157**	**0.0167**	**0.0000**	**55.6661**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0300e-003	1.5300e-003	0.0148	3.0000e-005	2.4500e-003	2.0000e-005	2.4700e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.2292	2.2292	1.3000e-004	0.0000	2.2319
Total	**1.0300e-003**	**1.5300e-003**	**0.0148**	**3.0000e-005**	**2.4500e-003**	**2.0000e-005**	**2.4700e-003**	**6.5000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.2292**	**2.2292**	**1.3000e-004**	**0.0000**	**2.2319**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0762	0.8195	0.6166	5.9000e-004		0.0441	0.0441		0.0406	0.0406	0.0000	55.3156	55.3156	0.0167	0.0000	55.6660
Total	**0.0762**	**0.8195**	**0.6166**	**5.9000e-004**	**0.2710**	**0.0441**	**0.3151**	**0.1490**	**0.0406**	**0.1895**	**0.0000**	**55.3156**	**55.3156**	**0.0167**	**0.0000**	**55.6660**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0300e-003	1.5300e-003	0.0148	3.0000e-005	2.4500e-003	2.0000e-005	2.4700e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.2292	2.2292	1.3000e-004	0.0000	2.2319
Total	**1.0300e-003**	**1.5300e-003**	**0.0148**	**3.0000e-005**	**2.4500e-003**	**2.0000e-005**	**2.4700e-003**	**6.5000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.2292**	**2.2292**	**1.3000e-004**	**0.0000**	**2.2319**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2430	2.8055	1.8427	2.3100e-003		0.1344	0.1344		0.1237	0.1237	0.0000	218.2340	218.2340	0.0658	0.0000	219.6163
Total	**0.2430**	**2.8055**	**1.8427**	**2.3100e-003**	**0.3253**	**0.1344**	**0.4597**	**0.1349**	**0.1237**	**0.2585**	**0.0000**	**218.2340**	**218.2340**	**0.0658**	**0.0000**	**219.6163**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8700e-003	4.2400e-003	0.0410	8.0000e-005	6.8100e-003	6.0000e-005	6.8700e-003	1.8100e-003	5.0000e-005	1.8600e-003	0.0000	6.1923	6.1923	3.5000e-004	0.0000	6.1996
Total	**2.8700e-003**	**4.2400e-003**	**0.0410**	**8.0000e-005**	**6.8100e-003**	**6.0000e-005**	**6.8700e-003**	**1.8100e-003**	**5.0000e-005**	**1.8600e-003**	**0.0000**	**6.1923**	**6.1923**	**3.5000e-004**	**0.0000**	**6.1996**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2430	2.8055	1.8427	2.3100e-003		0.1344	0.1344		0.1237	0.1237	0.0000	218.2337	218.2337	0.0658	0.0000	219.6161
Total	**0.2430**	**2.8055**	**1.8427**	**2.3100e-003**	**0.3253**	**0.1344**	**0.4597**	**0.1349**	**0.1237**	**0.2585**	**0.0000**	**218.2337**	**218.2337**	**0.0658**	**0.0000**	**219.6161**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8700e-003	4.2400e-003	0.0410	8.0000e-005	6.8100e-003	6.0000e-005	6.8700e-003	1.8100e-003	5.0000e-005	1.8600e-003	0.0000	6.1923	6.1923	3.5000e-004	0.0000	6.1996
Total	**2.8700e-003**	**4.2400e-003**	**0.0410**	**8.0000e-005**	**6.8100e-003**	**6.0000e-005**	**6.8700e-003**	**1.8100e-003**	**5.0000e-005**	**1.8600e-003**	**0.0000**	**6.1923**	**6.1923**	**3.5000e-004**	**0.0000**	**6.1996**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1805	1.5108	0.9809	1.4200e-003		0.1043	0.1043		0.0980	0.0980	0.0000	128.3414	128.3414	0.0318	0.0000	129.0099
Total	**0.1805**	**1.5108**	**0.9809**	**1.4200e-003**		**0.1043**	**0.1043**		**0.0980**	**0.0980**	**0.0000**	**128.3414**	**128.3414**	**0.0318**	**0.0000**	**129.0099**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2038	1.7203	2.4363	4.0800e-003	0.1100	0.0259	0.1359	0.0316	0.0238	0.0554	0.0000	370.7564	370.7564	3.0000e-003	0.0000	370.8194
Worker	0.1669	0.2468	2.3825	4.7300e-003	0.3959	3.3800e-003	0.3993	0.1053	3.1000e-003	0.1084	0.0000	360.1342	360.1342	0.0204	0.0000	360.5623
Total	**0.3707**	**1.9671**	**4.8188**	**8.8100e-003**	**0.5059**	**0.0293**	**0.5352**	**0.1369**	**0.0269**	**0.1638**	**0.0000**	**730.8906**	**730.8906**	**0.0234**	**0.0000**	**731.3817**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1805	1.5108	0.9809	1.4200e-003		0.1043	0.1043		0.0980	0.0980	0.0000	128.3413	128.3413	0.0318	0.0000	129.0097
Total	**0.1805**	**1.5108**	**0.9809**	**1.4200e-003**		**0.1043**	**0.1043**		**0.0980**	**0.0980**	**0.0000**	**128.3413**	**128.3413**	**0.0318**	**0.0000**	**129.0097**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2038	1.7203	2.4363	4.0800e-003	0.1100	0.0259	0.1359	0.0316	0.0238	0.0554	0.0000	370.7564	370.7564	3.0000e-003	0.0000	370.8194
Worker	0.1669	0.2468	2.3825	4.7300e-003	0.3959	3.3800e-003	0.3993	0.1053	3.1000e-003	0.1084	0.0000	360.1342	360.1342	0.0204	0.0000	360.5623
Total	**0.3707**	**1.9671**	**4.8188**	**8.8100e-003**	**0.5059**	**0.0293**	**0.5352**	**0.1369**	**0.0269**	**0.1638**	**0.0000**	**730.8906**	**730.8906**	**0.0234**	**0.0000**	**731.3817**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3228	311.3228	0.0766	0.0000	312.9319
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3228**	**311.3228**	**0.0766**	**0.0000**	**312.9319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4691	3.7804	5.7337	0.0100	0.2698	0.0550	0.3248	0.0775	0.0505	0.1281	0.0000	894.1237	894.1237	6.9800e-003	0.0000	894.2703
Worker	0.3624	0.5418	5.1945	0.0116	0.9711	7.9000e-003	0.9790	0.2583	7.2700e-003	0.2656	0.0000	849.7008	849.7008	0.0457	0.0000	850.6594
Total	**0.8315**	**4.3222**	**10.9282**	**0.0216**	**1.2409**	**0.0629**	**1.3038**	**0.3358**	**0.0578**	**0.3936**	**0.0000**	**1,743.8245**	**1,743.8245**	**0.0526**	**0.0000**	**1,744.9297**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3225	311.3225	0.0766	0.0000	312.9315
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3225**	**311.3225**	**0.0766**	**0.0000**	**312.9315**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4691	3.7804	5.7337	0.0100	0.2698	0.0550	0.3248	0.0775	0.0505	0.1281	0.0000	894.1237	894.1237	6.9800e-003	0.0000	894.2703
Worker	0.3624	0.5418	5.1945	0.0116	0.9711	7.9000e-003	0.9790	0.2583	7.2700e-003	0.2656	0.0000	849.7008	849.7008	0.0457	0.0000	850.6594
Total	**0.8315**	**4.3222**	**10.9282**	**0.0216**	**1.2409**	**0.0629**	**1.3038**	**0.3358**	**0.0578**	**0.3936**	**0.0000**	**1,743.8245**	**1,743.8245**	**0.0526**	**0.0000**	**1,744.9297**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9844	308.9844	0.0756	0.0000	310.5723
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9844**	**308.9844**	**0.0756**	**0.0000**	**310.5723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4432	3.4382	5.5117	0.0100	0.2708	0.0511	0.3220	0.0778	0.0470	0.1248	0.0000	882.0992	882.0992	6.8800e-003	0.0000	882.2437
Worker	0.3228	0.4889	4.6506	0.0116	0.9748	7.6400e-003	0.9825	0.2593	7.0600e-003	0.2664	0.0000	821.2902	821.2902	0.0421	0.0000	822.1737
Total	**0.7660**	**3.9271**	**10.1622**	**0.0217**	**1.2457**	**0.0588**	**1.3044**	**0.3371**	**0.0541**	**0.3912**	**0.0000**	**1,703.3894**	**1,703.3894**	**0.0490**	**0.0000**	**1,704.4174**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9841	308.9841	0.0756	0.0000	310.5720
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9841**	**308.9841**	**0.0756**	**0.0000**	**310.5720**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4432	3.4382	5.5117	0.0100	0.2708	0.0511	0.3220	0.0778	0.0470	0.1248	0.0000	882.0992	882.0992	6.8800e-003	0.0000	882.2437
Worker	0.3228	0.4889	4.6506	0.0116	0.9748	7.6400e-003	0.9825	0.2593	7.0600e-003	0.2664	0.0000	821.2902	821.2902	0.0421	0.0000	822.1737

Total	**0.7660**	**3.9271**	**10.1622**	**0.0217**	**1.2457**	**0.0588**	**1.3044**	**0.3371**	**0.0541**	**0.3912**	**0.0000**	**1,703.3894**	**1,703.3894**	**0.0490**	**0.0000**	**1,704.4174**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1329	1.1845	0.9673	1.5100e-003		0.0726	0.0726		0.0683	0.0683	0.0000	132.2794	132.2794	0.0322	0.0000	132.9552
Total	**0.1329**	**1.1845**	**0.9673**	**1.5100e-003**		**0.0726**	**0.0726**		**0.0683**	**0.0683**	**0.0000**	**132.2794**	**132.2794**	**0.0322**	**0.0000**	**132.9552**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1754	1.3583	2.2575	4.3300e-003	0.1173	0.0206	0.1378	0.0337	0.0189	0.0526	0.0000	375.3084	375.3084	2.9100e-003	0.0000	375.3695
Worker	0.1271	0.1928	1.8272	5.0300e-003	0.4221	3.2300e-003	0.4253	0.1123	2.9900e-003	0.1153	0.0000	342.8129	342.8129	0.0169	0.0000	343.1686
Total	**0.3025**	**1.5511**	**4.0847**	**9.3600e-003**	**0.5393**	**0.0238**	**0.5631**	**0.1460**	**0.0219**	**0.1679**	**0.0000**	**718.1213**	**718.1213**	**0.0199**	**0.0000**	**718.5381**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1329	1.1845	0.9673	1.5100e-003		0.0726	0.0726		0.0683	0.0683	0.0000	132.2792	132.2792	0.0322	0.0000	132.9551
Total	**0.1329**	**1.1845**	**0.9673**	**1.5100e-003**		**0.0726**	**0.0726**		**0.0683**	**0.0683**	**0.0000**	**132.2792**	**132.2792**	**0.0322**	**0.0000**	**132.9551**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1754	1.3583	2.2575	4.3300e-003	0.1173	0.0206	0.1378	0.0337	0.0189	0.0526	0.0000	375.3084	375.3084	2.9100e-003	0.0000	375.3695
Worker	0.1271	0.1928	1.8272	5.0300e-003	0.4221	3.2300e-003	0.4253	0.1123	2.9900e-003	0.1153	0.0000	342.8129	342.8129	0.0169	0.0000	343.1686
Total	**0.3025**	**1.5511**	**4.0847**	**9.3600e-003**	**0.5393**	**0.0238**	**0.5631**	**0.1460**	**0.0219**	**0.1679**	**0.0000**	**718.1213**	**718.1213**	**0.0199**	**0.0000**	**718.5381**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0392	0.4107	0.3950	6.1000e-004		0.0223	0.0223		0.0205	0.0205	0.0000	55.1085	55.1085	0.0174	0.0000	55.4747
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.0392**	**0.4107**	**0.3950**	**6.1000e-004**		**0.0223**	**0.0223**		**0.0205**	**0.0205**	**0.0000**	**55.1085**	**55.1085**	**0.0174**	**0.0000**	**55.4747**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	1.7100e-003	0.0162	4.0000e-005	3.7400e-003	3.0000e-005	3.7700e-003	1.0000e-003	3.0000e-005	1.0200e-003	0.0000	3.0411	3.0411	1.5000e-004	0.0000	3.0443
Total	**1.1300e-003**	**1.7100e-003**	**0.0162**	**4.0000e-005**	**3.7400e-003**	**3.0000e-005**	**3.7700e-003**	**1.0000e-003**	**3.0000e-005**	**1.0200e-003**	**0.0000**	**3.0411**	**3.0411**	**1.5000e-004**	**0.0000**	**3.0443**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0392	0.4107	0.3950	6.1000e-004		0.0223	0.0223		0.0205	0.0205	0.0000	55.1085	55.1085	0.0174	0.0000	55.4746
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0392**	**0.4107**	**0.3950**	**6.1000e-004**		**0.0223**	**0.0223**		**0.0205**	**0.0205**	**0.0000**	**55.1085**	**55.1085**	**0.0174**	**0.0000**	**55.4746**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	1.7100e-003	0.0162	4.0000e-005	3.7400e-003	3.0000e-005	3.7700e-003	1.0000e-003	3.0000e-005	1.0200e-003	0.0000	3.0411	3.0411	1.5000e-004	0.0000	3.0443
Total	**1.1300e-003**	**1.7100e-003**	**0.0162**	**4.0000e-005**	**3.7400e-003**	**3.0000e-005**	**3.7700e-003**	**1.0000e-003**	**3.0000e-005**	**1.0200e-003**	**0.0000**	**3.0411**	**3.0411**	**1.5000e-004**	**0.0000**	**3.0443**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	22.7138					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3300e-003	0.0505	0.0506	8.0000e-005		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	7.0215	7.0215	5.9000e-004	0.0000	7.0339
Total	**22.7212**	**0.0505**	**0.0506**	**8.0000e-005**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**7.0215**	**7.0215**	**5.9000e-004**	**0.0000**	**7.0339**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	0.0124	0.0188	0.1783	4.9000e-004	0.0412	3.2000e-004	0.0415	0.0110	2.9000e-004	0.0113	0.0000	33.4523	33.4523	1.6500e-003	0.0000	33.4870
Total	**0.0124**	**0.0188**	**0.1783**	**4.9000e-004**	**0.0412**	**3.2000e-004**	**0.0415**	**0.0110**	**2.9000e-004**	**0.0113**	**0.0000**	**33.4523**	**33.4523**	**1.6500e-003**	**0.0000**	**33.4870**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	22.7138					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3300e-003	0.0505	0.0506	8.0000e-005		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	7.0214	7.0214	5.9000e-004	0.0000	7.0339
Total	**22.7212**	**0.0505**	**0.0506**	**8.0000e-005**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**7.0214**	**7.0214**	**5.9000e-004**	**0.0000**	**7.0339**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0124	0.0188	0.1783	4.9000e-004	0.0412	3.2000e-004	0.0415	0.0110	2.9000e-004	0.0113	0.0000	33.4523	33.4523	1.6500e-003	0.0000	33.4870
Total	**0.0124**	**0.0188**	**0.1783**	**4.9000e-004**	**0.0412**	**3.2000e-004**	**0.0415**	**0.0110**	**2.9000e-004**	**0.0113**	**0.0000**	**33.4523**	**33.4523**	**1.6500e-003**	**0.0000**	**33.4870**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8253	4.8151	19.2002	0.0433	2.8183	0.0713	2.8896	0.7574	0.0658	0.8232	0.0000	3,087.3817	3,087.3817	0.1076	0.0000	3,089.6411
Unmitigated	1.8253	4.8151	19.2002	0.0433	2.8183	0.0713	2.8896	0.7574	0.0658	0.8232	0.0000	3,087.3817	3,087.3817	0.1076	0.0000	3,089.6411

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	3,465.00	3,690.00	3690.00	7,534,505	7,534,505
Total	3,465.00	3,690.00	3,690.00	7,534,505	7,534,505

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					

City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.6777	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Unmitigated	8.6777	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.6556					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Total	**8.6777**	**0.0000**	**4.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-004**	**8.0000e-004**	**0.0000**	**0.0000**	**8.5000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					

Architectural Coating	1.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.6556					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Total	**8.6777**	**0.0000**	**4.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-004**	**8.0000e-004**	**0.0000**	**0.0000**	**8.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	18.2603	0.0139	4.8000e-004	18.6990
Unmitigated	18.2603	0.0139	4.8000e-004	18.6992

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0.4 / 17.191	18.2603	0.0139	4.8000e-004	18.6992
Total		**18.2603**	**0.0139**	**4.8000e-004**	**18.6992**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0.4 / 17.191	18.2603	0.0139	4.8000e-004	18.6990
Total		**18.2603**	**0.0139**	**4.8000e-004**	**18.6990**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.7856	0.0464	0.0000	1.7605
Unmitigated	0.7856	0.0464	0.0000	1.7605

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	3.87	0.7856	0.0464	0.0000	1.7605
Total		**0.7856**	**0.0464**	**0.0000**	**1.7605**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	3.87	0.7856	0.0464	0.0000	1.7605
Total		**0.7856**	**0.0464**	**0.0000**	**1.7605**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	45.00	Acre	45.00	1,960,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total acreage of 3 phases

Construction Phase - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Trips and VMT - Operational emissions only

Grading -

Vehicle Trips - Per TIA Table 7 - Assuming 2,000,000 annual visitors: 5,490 daily weekend trips multiplied by 2/3 (phases) divided by 45 acres = 82 trips per da...per acre. 5,150 dail...eekda...trips m...ltiplied b...2/3 (phases) di...ided b...45 acres...77 trips per da...per acre

Water And Wastewater - From O&M Assumptions REV tab

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	1.59	82.00
tblVehicleTrips	SU_TR	1.59	82.00
tblVehicleTrips	WD_TR	1.59	77.00
tblWater	IndoorWaterUseRate	0.00	400,000.00
tblWater	OutdoorWaterUseRate	53,616,660.73	17,191,000.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	10.1943	74.9133	100.5524	0.2001	18.2360	3.5858	21.1761	9.9757	3.2989	12.6806	0.0000	18,475.3389	18,475.3389	1.9453	0.0000	18,516.1900
2017	9.3184	58.2041	93.5436	0.1999	9.9035	2.2629	12.1664	2.6711	2.1160	4.7872	0.0000	18,009.4249	18,009.4249	1.0953	0.0000	18,032.4263
2018	8.3898	52.0503	86.9231	0.1997	9.9033	1.9430	11.8463	2.6711	1.8177	4.4888	0.0000	17,560.9258	17,560.9258	1.0516	0.0000	17,583.0083
2019	826.7170	47.2364	81.0144	0.1996	9.9033	1.7045	11.6078	2.6711	1.5945	4.2656	0.0000	17,134.8662	17,134.8662	1.0144	0.0000	17,156.1691
Total	**854.6195**	**232.4042**	**362.0335**	**0.7993**	**47.9461**	**9.4962**	**56.7965**	**17.9890**	**8.8272**	**26.2221**	**0.0000**	**71,180.5558**	**71,180.5558**	**5.1066**	**0.0000**	**71,287.7937**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	10.1943	74.9133	100.5524	0.2001	18.2360	3.5858	21.1761	9.9757	3.2989	12.6806	0.0000	18,475.3389	18,475.3389	1.9453	0.0000	18,516.1900
2017	9.3184	58.2041	93.5436	0.1999	9.9035	2.2629	12.1664	2.6711	2.1160	4.7872	0.0000	18,009.4249	18,009.4249	1.0953	0.0000	18,032.4262
2018	8.3898	52.0503	86.9231	0.1997	9.9033	1.9430	11.8463	2.6711	1.8177	4.4888	0.0000	17,560.9258	17,560.9258	1.0516	0.0000	17,583.0083
2019	826.7170	47.2364	81.0144	0.1996	9.9033	1.7045	11.6078	2.6711	1.5945	4.2656	0.0000	17,134.8662	17,134.8662	1.0144	0.0000	17,156.1691
Total	**854.6195**	**232.4042**	**362.0335**	**0.7993**	**47.9461**	**9.4962**	**56.7965**	**17.9890**	**8.8272**	**26.2221**	**0.0000**	**71,180.5558**	**71,180.5558**	**5.1066**	**0.0000**	**71,287.7936**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	47.5494	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	10.7674	26.1512	99.5722	0.2626	16.8075	0.4093	17.2168	4.5026	0.3773	4.8798		20,568.2371	20,568.2371	0.6814		20,582.5465
Total	**58.3168**	**26.1513**	**99.5768**	**0.2626**	**16.8075**	**0.4093**	**17.2168**	**4.5026**	**0.3773**	**4.8799**		**20,568.2469**	**20,568.2469**	**0.6814**	**0.0000**	**20,582.5569**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	47.5494	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	10.7674	26.1512	99.5722	0.2626	16.8075	0.4093	17.2168	4.5026	0.3773	4.8798		20,568.2371	20,568.2371	0.6814		20,582.5465
Total	**58.3168**	**26.1513**	**99.5768**	**0.2626**	**16.8075**	**0.4093**	**17.2168**	**4.5026**	**0.3773**	**4.8799**		**20,568.2469**	**20,568.2469**	**0.6814**	**0.0000**	**20,582.5569**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	3/10/2016	5	50	
2	Site Preparation	Site Preparation	3/11/2016	4/21/2016	5	30	
3	Grading	Grading	4/22/2016	8/4/2016	5	75	
4	Building Construction	Building Construction	8/5/2016	6/6/2019	5	740	
5	Paving	Paving	6/7/2019	8/22/2019	5	55	
6	Architectural Coating	Architectural Coating	8/23/2019	11/7/2019	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,940,300; Non-Residential Outdoor: 980,100 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	226	0.29
Demolition	Excavators	3	8.00	162	0.38
Grading	Excavators	2	8.00	162	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	165.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	823.00	321.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365		4,089.2841	4,089.2841	1.1121		4,112.6374
Total	**4.2876**	**45.6559**	**35.0303**	**0.0399**		**2.2921**	**2.2921**		**2.1365**	**2.1365**		**4,089.2841**	**4,089.2841**	**1.1121**		**4,112.6374**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0747	0.8738	1.7500e-003	0.1415	1.1600e-003	0.1426	0.0375	1.0700e-003	0.0386		147.0890	147.0890	7.7300e-003		147.2513
Total	**0.0616**	**0.0747**	**0.8738**	**1.7500e-003**	**0.1415**	**1.1600e-003**	**0.1426**	**0.0375**	**1.0700e-003**	**0.0386**		**147.0890**	**147.0890**	**7.7300e-003**		**147.2513**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365	0.0000	4,089.2841	4,089.2841	1.1121		4,112.6374
Total	**4.2876**	**45.6559**	**35.0303**	**0.0399**		**2.2921**	**2.2921**		**2.1365**	**2.1365**	**0.0000**	**4,089.2841**	**4,089.2841**	**1.1121**		**4,112.6374**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0747	0.8738	1.7500e-003	0.1415	1.1600e-003	0.1426	0.0375	1.0700e-003	0.0386		147.0890	147.0890	7.7300e-003		147.2513
Total	**0.0616**	**0.0747**	**0.8738**	**1.7500e-003**	**0.1415**	**1.1600e-003**	**0.1426**	**0.0375**	**1.0700e-003**	**0.0386**		**147.0890**	**147.0890**	**7.7300e-003**		**147.2513**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**		**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.0739**	**0.0896**	**1.0486**	**2.1000e-003**	**0.1698**	**1.4000e-003**	**0.1711**	**0.0450**	**1.2800e-003**	**0.0463**		**176.5068**	**176.5068**	**9.2700e-003**		**176.7016**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**	**0.0000**	**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.0739**	**0.0896**	**1.0486**	**2.1000e-003**	**0.1698**	**1.4000e-003**	**0.1711**	**0.0450**	**1.2800e-003**	**0.0463**		**176.5068**	**176.5068**	**9.2700e-003**		**176.7016**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**8.6733**	**3.5842**	**12.2576**	**3.5965**	**3.2975**	**6.8940**		**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.0822**	**0.0996**	**1.1651**	**2.3400e-003**	**0.1886**	**1.5500e-003**	**0.1902**	**0.0500**	**1.4200e-003**	**0.0515**		**196.1187**	**196.1187**	**0.0103**		**196.3351**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**8.6733**	**3.5842**	**12.2576**	**3.5965**	**3.2975**	**6.8940**	**0.0000**	**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.0822**	**0.0996**	**1.1651**	**2.3400e-003**	**0.1886**	**1.5500e-003**	**0.1902**	**0.0500**	**1.4200e-003**	**0.0515**		**196.1187**	**196.1187**	**0.0103**		**196.3351**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4077	31.3917	34.1014	0.0771	2.1421	0.4863	2.6284	0.6126	0.4472	1.0598		7,735.7686	7,735.7686	0.0618		7,737.0655
Worker	3.3804	4.0976	47.9444	0.0962	7.7611	0.0639	7.8250	2.0585	0.0586	2.1170		8,070.2839	8,070.2839	0.4240		8,079.1884
Total	**6.7881**	**35.4893**	**82.0458**	**0.1733**	**9.9033**	**0.5502**	**10.4534**	**2.6711**	**0.5057**	**3.1768**		**15,806.0525**	**15,806.0525**	**0.4858**		**15,816.2539**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4077	31.3917	34.1014	0.0771	2.1421	0.4863	2.6284	0.6126	0.4472	1.0598		7,735.7686	7,735.7686	0.0618		7,737.0655
Worker	3.3804	4.0976	47.9444	0.0962	7.7611	0.0639	7.8250	2.0585	0.0586	2.1170		8,070.2839	8,070.2839	0.4240		8,079.1884
Total	**6.7881**	**35.4893**	**82.0458**	**0.1733**	**9.9033**	**0.5502**	**10.4534**	**2.6711**	**0.5057**	**3.1768**		**15,806.0525**	**15,806.0525**	**0.4858**		**15,816.2539**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2027	28.1311	32.5738	0.0770	2.1423	0.4209	2.5633	0.6127	0.3871	0.9998		7,605.8761	7,605.8761	0.0585		7,607.1053
Worker	3.0134	3.6673	42.8407	0.0961	7.7611	0.0608	7.8219	2.0585	0.0560	2.1144		7,763.7435	7,763.7435	0.3871		7,771.8720
Total	**6.2161**	**31.7985**	**75.4145**	**0.1731**	**9.9035**	**0.4817**	**10.3852**	**2.6712**	**0.4430**	**3.1142**		**15,369.6196**	**15,369.6196**	**0.4456**		**15,378.9772**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2027	28.1311	32.5738	0.0770	2.1423	0.4209	2.5633	0.6127	0.3871	0.9998		7,605.8761	7,605.8761	0.0585		7,607.1053
Worker	3.0134	3.6673	42.8407	0.0961	7.7611	0.0608	7.8219	2.0585	0.0560	2.1144		7,763.7435	7,763.7435	0.3871		7,771.8720
Total	**6.2161**	**31.7985**	**75.4145**	**0.1731**	**9.9035**	**0.4817**	**10.3852**	**2.6712**	**0.4430**	**3.1142**		**15,369.6196**	**15,369.6196**	**0.4456**		**15,378.9772**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0273	25.4925	30.9699	0.0768	2.1422	0.3901	2.5323	0.6126	0.3588	0.9714		7,474.9003	7,474.9003	0.0575		7,476.1069
Worker	2.6938	3.2970	38.4206	0.0961	7.7611	0.0585	7.8197	2.0585	0.0541	2.1126		7,476.0866	7,476.0866	0.3554		7,483.5497

Total	**5.7211**	**28.7895**	**69.3904**	**0.1729**	**9.9033**	**0.4487**	**10.3520**	**2.6711**	**0.4129**	**3.0840**		**14,950.9869**	**14,950.9869**	**0.4129**		**14,959.6566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0273	25.4925	30.9699	0.0768	2.1422	0.3901	2.5323	0.6126	0.3588	0.9714		7,474.9003	7,474.9003	0.0575		7,476.1069
Worker	2.6938	3.2970	38.4206	0.0961	7.7611	0.0585	7.8197	2.0585	0.0541	2.1126		7,476.0866	7,476.0866	0.3554		7,483.5497
Total	**5.7211**	**28.7895**	**69.3904**	**0.1729**	**9.9033**	**0.4487**	**10.3520**	**2.6711**	**0.4129**	**3.0840**		**14,950.9869**	**14,950.9869**	**0.4129**		**14,959.6566**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083		2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**		**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.7819	23.2681	28.8732	0.0767	2.1421	0.3623	2.5044	0.6126	0.3333	0.9459		7,345.8405	7,345.8405	0.0561		7,347.0178
Worker	2.4616	3.0033	35.0209	0.0961	7.7611	0.0572	7.8183	2.0585	0.0530	2.1115		7,208.2640	7,208.2640	0.3305		7,215.2034
Total	**5.2436**	**26.2714**	**63.8941**	**0.1728**	**9.9033**	**0.4195**	**10.3228**	**2.6711**	**0.3863**	**3.0573**		**14,554.1044**	**14,554.1044**	**0.3865**		**14,562.2212**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083	0.0000	2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**	**0.0000**	**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.7819	23.2681	28.8732	0.0767	2.1421	0.3623	2.5044	0.6126	0.3333	0.9459		7,345.8405	7,345.8405	0.0561		7,347.0178
Worker	2.4616	3.0033	35.0209	0.0961	7.7611	0.0572	7.8183	2.0585	0.0530	2.1115		7,208.2640	7,208.2640	0.3305		7,215.2034
Total	**5.2436**	**26.2714**	**63.8941**	**0.1728**	**9.9033**	**0.4195**	**10.3228**	**2.6711**	**0.3863**	**3.0573**		**14,554.1044**	**14,554.1044**	**0.3865**		**14,562.2212**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4259**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**		**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447	0.0000	2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4259**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**	**0.0000**	**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	825.9570					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	**826.2234**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**281.9473**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4935	0.6021	7.0212	0.0193	1.5560	0.0115	1.5675	0.4127	0.0106	0.4233		1,445.1562	1,445.1562	0.0663		1,446.5475
Total	**0.4935**	**0.6021**	**7.0212**	**0.0193**	**1.5560**	**0.0115**	**1.5675**	**0.4127**	**0.0106**	**0.4233**		**1,445.1562**	**1,445.1562**	**0.0663**		**1,446.5475**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	825.9570					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		281.9473
Total	**826.2234**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**281.9473**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4935	0.6021	7.0212	0.0193	1.5560	0.0115	1.5675	0.4127	0.0106	0.4233		1,445.1562	1,445.1562	0.0663		1,446.5475
Total	**0.4935**	**0.6021**	**7.0212**	**0.0193**	**1.5560**	**0.0115**	**1.5675**	**0.4127**	**0.0106**	**0.4233**		**1,445.1562**	**1,445.1562**	**0.0663**		**1,446.5475**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Mitigated	10.7674	26.1512	99.5722	0.2626	16.8075	0.4093	17.2168	4.5026	0.3773	4.8798		20,568.2371	20,568.2371	0.6814		20,582.5465
Unmitigated	10.7674	26.1512	99.5722	0.2626	16.8075	0.4093	17.2168	4.5026	0.3773	4.8798		20,568.2371	20,568.2371	0.6814		20,582.5465

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	3,465.00	3,690.00	3690.00	7,534,505	7,534,505
Total	3,465.00	3,690.00	3,690.00	7,534,505	7,534,505

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.543091	0.062201	0.166716	0.110184	0.030625	0.004564	0.019041	0.050825	0.001789	0.003661	0.005684	0.000199	0.001418

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	47.5494	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Unmitigated	47.5494	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.6007					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	41.9483					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Total	**47.5494**	**4.0000e-005**	**4.6200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.8500e-003**	**9.8500e-003**	**3.0000e-005**		**0.0104**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Consumer Products	41.9483					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Architectural Coating	5.6007					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**47.5494**	**4.0000e-005**	**4.6200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.8500e-003**	**9.8500e-003**	**3.0000e-005**		**0.0104**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	45.00	Acre	45.00	1,960,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total acreage of 3 phases

Construction Phase - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Trips and VMT - Operational emissions only

Grading -

Vehicle Trips - Per TIA Table 7 - Assuming 2,000,000 annual visitors: 5,490 daily weekend trips divided by 45 acres = 122 trips per day per acre; 5,150 daily weekday trips divided by 45 acres = 115 trips per day per acre

Water And Wastewater - From O&M Assumptions REV tab

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblVehicleTrips	ST_TR	1.59	122.00
tblVehicleTrips	SU_TR	1.59	122.00
tblVehicleTrips	WD_TR	1.59	115.00
tblWater	IndoorWaterUseRate	0.00	400,000.00
tblWater	OutdoorWaterUseRate	53,616,660.73	17,191,000.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.9829	8.2522	9.2108	0.0143	1.1148	0.3694	1.4843	0.4241	0.3426	0.7667	0.0000	1,237.0427	1,237.0427	0.1636	0.0000	1,240.4783
2017	1.2348	7.7549	13.2850	0.0251	1.2409	0.2944	1.5353	0.3358	0.2753	0.6111	0.0000	2,055.1474	2,055.1474	0.1293	0.0000	2,057.8616
2018	1.1143	6.9626	12.4502	0.0251	1.2457	0.2538	1.4994	0.3371	0.2374	0.5745	0.0000	2,012.3738	2,012.3738	0.1246	0.0000	2,014.9898
2019	23.2093	3.2173	5.6922	0.0121	0.5842	0.1225	0.7068	0.1579	0.1145	0.2724	0.0000	949.0241	949.0241	0.0719	0.0000	950.5332
Total	**26.5412**	**26.1871**	**40.6382**	**0.0766**	**4.1856**	**1.0402**	**5.2258**	**1.2550**	**0.9698**	**2.2247**	**0.0000**	**6,253.5879**	**6,253.5879**	**0.4893**	**0.0000**	**6,263.8628**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.9829	8.2522	9.2108	0.0143	1.1148	0.3694	1.4843	0.4241	0.3426	0.7667	0.0000	1,237.0421	1,237.0421	0.1636	0.0000	1,240.4777
2017	1.2348	7.7549	13.2850	0.0251	1.2409	0.2944	1.5353	0.3358	0.2753	0.6111	0.0000	2,055.1470	2,055.1470	0.1293	0.0000	2,057.8612
2018	1.1143	6.9626	12.4502	0.0251	1.2457	0.2538	1.4994	0.3371	0.2374	0.5745	0.0000	2,012.3735	2,012.3735	0.1246	0.0000	2,014.9894
2019	23.2093	3.2173	5.6922	0.0121	0.5842	0.1225	0.7068	0.1579	0.1145	0.2724	0.0000	949.0238	949.0238	0.0719	0.0000	950.5329
Total	**26.5412**	**26.1871**	**40.6382**	**0.0766**	**4.1856**	**1.0402**	**5.2258**	**1.2550**	**0.9698**	**2.2247**	**0.0000**	**6,253.5864**	**6,253.5864**	**0.4893**	**0.0000**	**6,263.8612**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.6777	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.0021	4.5941	21.3272	0.0658	4.2094	0.1044	4.3138	1.1316	0.0963	1.2279	0.0000	4,397.8979	4,397.8979	0.1155	0.0000	4,400.3228
Waste						0.0000	0.0000		0.0000	0.0000	0.7856	0.0000	0.7856	0.0464	0.0000	1.7605
Water						0.0000	0.0000		0.0000	0.0000	0.1269	18.1334	18.2603	0.0139	4.8000e-004	18.6992

Total	**10.6799**	**4.5941**	**21.3276**	**0.0658**	**4.2094**	**0.1044**	**4.3138**	**1.1316**	**0.0963**	**1.2279**	**0.9125**	**4,416.0321**	**4,416.9446**	**0.1758**	**4.8000e-004**	**4,420.7834**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.6777	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.0021	4.5941	21.3272	0.0658	4.2094	0.1044	4.3138	1.1316	0.0963	1.2279	0.0000	4,397.8979	4,397.8979	0.1155	0.0000	4,400.3228
Waste						0.0000	0.0000		0.0000	0.0000	0.7856	0.0000	0.7856	0.0464	0.0000	1.7605
Water						0.0000	0.0000		0.0000	0.0000	0.1269	18.1334	18.2603	0.0139	4.8000e-004	18.6990
Total	**10.6799**	**4.5941**	**21.3276**	**0.0658**	**4.2094**	**0.1044**	**4.3138**	**1.1316**	**0.0963**	**1.2279**	**0.9125**	**4,416.0321**	**4,416.9446**	**0.1758**	**4.8000e-004**	**4,420.7832**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	3/10/2016	5	50	
2	Site Preparation	Site Preparation	3/11/2016	4/21/2016	5	30	
3	Grading	Grading	4/22/2016	8/4/2016	5	75	
4	Building Construction	Building Construction	8/5/2016	6/6/2019	5	740	

5	Paving	Paving	6/7/2019	8/22/2019	5	55	
6	Architectural Coating	Architectural Coating	8/23/2019	11/7/2019	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,940,300; Non-Residential Outdoor: 980,100 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	226	0.29
Demolition	Excavators	3	8.00	162	0.38
Grading	Excavators	2	8.00	162	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	165.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	823.00	321.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1072	1.1414	0.8758	1.0000e-003		0.0573	0.0573		0.0534	0.0534	0.0000	92.7434	92.7434	0.0252	0.0000	93.2731
Total	**0.1072**	**1.1414**	**0.8758**	**1.0000e-003**		**0.0573**	**0.0573**		**0.0534**	**0.0534**	**0.0000**	**92.7434**	**92.7434**	**0.0252**	**0.0000**	**93.2731**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4300e-003	2.1200e-003	0.0205	4.0000e-005	3.4000e-003	3.0000e-005	3.4300e-003	9.1000e-004	3.0000e-005	9.3000e-004	0.0000	3.0961	3.0961	1.8000e-004	0.0000	3.0998
Total	**1.4300e-003**	**2.1200e-003**	**0.0205**	**4.0000e-005**	**3.4000e-003**	**3.0000e-005**	**3.4300e-003**	**9.1000e-004**	**3.0000e-005**	**9.3000e-004**	**0.0000**	**3.0961**	**3.0961**	**1.8000e-004**	**0.0000**	**3.0998**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1072	1.1414	0.8758	1.0000e-003		0.0573	0.0573		0.0534	0.0534	0.0000	92.7433	92.7433	0.0252	0.0000	93.2729
Total	**0.1072**	**1.1414**	**0.8758**	**1.0000e-003**		**0.0573**	**0.0573**		**0.0534**	**0.0534**	**0.0000**	**92.7433**	**92.7433**	**0.0252**	**0.0000**	**93.2729**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4300e-003	2.1200e-003	0.0205	4.0000e-005	3.4000e-003	3.0000e-005	3.4300e-003	9.1000e-004	3.0000e-005	9.3000e-004	0.0000	3.0961	3.0961	1.8000e-004	0.0000	3.0998
Total	**1.4300e-003**	**2.1200e-003**	**0.0205**	**4.0000e-005**	**3.4000e-003**	**3.0000e-005**	**3.4300e-003**	**9.1000e-004**	**3.0000e-005**	**9.3000e-004**	**0.0000**	**3.0961**	**3.0961**	**1.8000e-004**	**0.0000**	**3.0998**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0762	0.8195	0.6166	5.9000e-004		0.0441	0.0441		0.0406	0.0406	0.0000	55.3157	55.3157	0.0167	0.0000	55.6661
Total	**0.0762**	**0.8195**	**0.6166**	**5.9000e-004**	**0.2710**	**0.0441**	**0.3151**	**0.1490**	**0.0406**	**0.1895**	**0.0000**	**55.3157**	**55.3157**	**0.0167**	**0.0000**	**55.6661**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0300e-003	1.5300e-003	0.0148	3.0000e-005	2.4500e-003	2.0000e-005	2.4700e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.2292	2.2292	1.3000e-004	0.0000	2.2319
Total	**1.0300e-003**	**1.5300e-003**	**0.0148**	**3.0000e-005**	**2.4500e-003**	**2.0000e-005**	**2.4700e-003**	**6.5000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.2292**	**2.2292**	**1.3000e-004**	**0.0000**	**2.2319**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0762	0.8195	0.6166	5.9000e-004		0.0441	0.0441		0.0406	0.0406	0.0000	55.3156	55.3156	0.0167	0.0000	55.6660
Total	**0.0762**	**0.8195**	**0.6166**	**5.9000e-004**	**0.2710**	**0.0441**	**0.3151**	**0.1490**	**0.0406**	**0.1895**	**0.0000**	**55.3156**	**55.3156**	**0.0167**	**0.0000**	**55.6660**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0300e-003	1.5300e-003	0.0148	3.0000e-005	2.4500e-003	2.0000e-005	2.4700e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.2292	2.2292	1.3000e-004	0.0000	2.2319
Total	**1.0300e-003**	**1.5300e-003**	**0.0148**	**3.0000e-005**	**2.4500e-003**	**2.0000e-005**	**2.4700e-003**	**6.5000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.2292**	**2.2292**	**1.3000e-004**	**0.0000**	**2.2319**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2430	2.8055	1.8427	2.3100e-003		0.1344	0.1344		0.1237	0.1237	0.0000	218.2340	218.2340	0.0658	0.0000	219.6163
Total	**0.2430**	**2.8055**	**1.8427**	**2.3100e-003**	**0.3253**	**0.1344**	**0.4597**	**0.1349**	**0.1237**	**0.2585**	**0.0000**	**218.2340**	**218.2340**	**0.0658**	**0.0000**	**219.6163**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8700e-003	4.2400e-003	0.0410	8.0000e-005	6.8100e-003	6.0000e-005	6.8700e-003	1.8100e-003	5.0000e-005	1.8600e-003	0.0000	6.1923	6.1923	3.5000e-004	0.0000	6.1996
Total	**2.8700e-003**	**4.2400e-003**	**0.0410**	**8.0000e-005**	**6.8100e-003**	**6.0000e-005**	**6.8700e-003**	**1.8100e-003**	**5.0000e-005**	**1.8600e-003**	**0.0000**	**6.1923**	**6.1923**	**3.5000e-004**	**0.0000**	**6.1996**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2430	2.8055	1.8427	2.3100e-003		0.1344	0.1344		0.1237	0.1237	0.0000	218.2337	218.2337	0.0658	0.0000	219.6161
Total	**0.2430**	**2.8055**	**1.8427**	**2.3100e-003**	**0.3253**	**0.1344**	**0.4597**	**0.1349**	**0.1237**	**0.2585**	**0.0000**	**218.2337**	**218.2337**	**0.0658**	**0.0000**	**219.6161**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8700e-003	4.2400e-003	0.0410	8.0000e-005	6.8100e-003	6.0000e-005	6.8700e-003	1.8100e-003	5.0000e-005	1.8600e-003	0.0000	6.1923	6.1923	3.5000e-004	0.0000	6.1996
Total	**2.8700e-003**	**4.2400e-003**	**0.0410**	**8.0000e-005**	**6.8100e-003**	**6.0000e-005**	**6.8700e-003**	**1.8100e-003**	**5.0000e-005**	**1.8600e-003**	**0.0000**	**6.1923**	**6.1923**	**3.5000e-004**	**0.0000**	**6.1996**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1805	1.5108	0.9809	1.4200e-003		0.1043	0.1043		0.0980	0.0980	0.0000	128.3414	128.3414	0.0318	0.0000	129.0099
Total	**0.1805**	**1.5108**	**0.9809**	**1.4200e-003**		**0.1043**	**0.1043**		**0.0980**	**0.0980**	**0.0000**	**128.3414**	**128.3414**	**0.0318**	**0.0000**	**129.0099**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2038	1.7203	2.4363	4.0800e-003	0.1100	0.0259	0.1359	0.0316	0.0238	0.0554	0.0000	370.7564	370.7564	3.0000e-003	0.0000	370.8194
Worker	0.1669	0.2468	2.3825	4.7300e-003	0.3959	3.3800e-003	0.3993	0.1053	3.1000e-003	0.1084	0.0000	360.1342	360.1342	0.0204	0.0000	360.5623
Total	**0.3707**	**1.9671**	**4.8188**	**8.8100e-003**	**0.5059**	**0.0293**	**0.5352**	**0.1369**	**0.0269**	**0.1638**	**0.0000**	**730.8906**	**730.8906**	**0.0234**	**0.0000**	**731.3817**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1805	1.5108	0.9809	1.4200e-003		0.1043	0.1043		0.0980	0.0980	0.0000	128.3413	128.3413	0.0318	0.0000	129.0097
Total	**0.1805**	**1.5108**	**0.9809**	**1.4200e-003**		**0.1043**	**0.1043**		**0.0980**	**0.0980**	**0.0000**	**128.3413**	**128.3413**	**0.0318**	**0.0000**	**129.0097**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2038	1.7203	2.4363	4.0800e-003	0.1100	0.0259	0.1359	0.0316	0.0238	0.0554	0.0000	370.7564	370.7564	3.0000e-003	0.0000	370.8194
Worker	0.1669	0.2468	2.3825	4.7300e-003	0.3959	3.3800e-003	0.3993	0.1053	3.1000e-003	0.1084	0.0000	360.1342	360.1342	0.0204	0.0000	360.5623
Total	**0.3707**	**1.9671**	**4.8188**	**8.8100e-003**	**0.5059**	**0.0293**	**0.5352**	**0.1369**	**0.0269**	**0.1638**	**0.0000**	**730.8906**	**730.8906**	**0.0234**	**0.0000**	**731.3817**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3228	311.3228	0.0766	0.0000	312.9319
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3228**	**311.3228**	**0.0766**	**0.0000**	**312.9319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4691	3.7804	5.7337	0.0100	0.2698	0.0550	0.3248	0.0775	0.0505	0.1281	0.0000	894.1237	894.1237	6.9800e-003	0.0000	894.2703
Worker	0.3624	0.5418	5.1945	0.0116	0.9711	7.9000e-003	0.9790	0.2583	7.2700e-003	0.2656	0.0000	849.7008	849.7008	0.0457	0.0000	850.6594
Total	**0.8315**	**4.3222**	**10.9282**	**0.0216**	**1.2409**	**0.0629**	**1.3038**	**0.3358**	**0.0578**	**0.3936**	**0.0000**	**1,743.8245**	**1,743.8245**	**0.0526**	**0.0000**	**1,744.9297**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3225	311.3225	0.0766	0.0000	312.9315
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3225**	**311.3225**	**0.0766**	**0.0000**	**312.9315**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4691	3.7804	5.7337	0.0100	0.2698	0.0550	0.3248	0.0775	0.0505	0.1281	0.0000	894.1237	894.1237	6.9800e-003	0.0000	894.2703
Worker	0.3624	0.5418	5.1945	0.0116	0.9711	7.9000e-003	0.9790	0.2583	7.2700e-003	0.2656	0.0000	849.7008	849.7008	0.0457	0.0000	850.6594
Total	**0.8315**	**4.3222**	**10.9282**	**0.0216**	**1.2409**	**0.0629**	**1.3038**	**0.3358**	**0.0578**	**0.3936**	**0.0000**	**1,743.8245**	**1,743.8245**	**0.0526**	**0.0000**	**1,744.9297**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9844	308.9844	0.0756	0.0000	310.5723
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9844**	**308.9844**	**0.0756**	**0.0000**	**310.5723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4432	3.4382	5.5117	0.0100	0.2708	0.0511	0.3220	0.0778	0.0470	0.1248	0.0000	882.0992	882.0992	6.8800e-003	0.0000	882.2437
Worker	0.3228	0.4889	4.6506	0.0116	0.9748	7.6400e-003	0.9825	0.2593	7.0600e-003	0.2664	0.0000	821.2902	821.2902	0.0421	0.0000	822.1737
Total	**0.7660**	**3.9271**	**10.1622**	**0.0217**	**1.2457**	**0.0588**	**1.3044**	**0.3371**	**0.0541**	**0.3912**	**0.0000**	**1,703.3894**	**1,703.3894**	**0.0490**	**0.0000**	**1,704.4174**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9841	308.9841	0.0756	0.0000	310.5720
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9841**	**308.9841**	**0.0756**	**0.0000**	**310.5720**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4432	3.4382	5.5117	0.0100	0.2708	0.0511	0.3220	0.0778	0.0470	0.1248	0.0000	882.0992	882.0992	6.8800e-003	0.0000	882.2437
Worker	0.3228	0.4889	4.6506	0.0116	0.9748	7.6400e-003	0.9825	0.2593	7.0600e-003	0.2664	0.0000	821.2902	821.2902	0.0421	0.0000	822.1737

Total	**0.7660**	**3.9271**	**10.1622**	**0.0217**	**1.2457**	**0.0588**	**1.3044**	**0.3371**	**0.0541**	**0.3912**	**0.0000**	**1,703.3894**	**1,703.3894**	**0.0490**	**0.0000**	**1,704.4174**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1329	1.1845	0.9673	1.5100e-003		0.0726	0.0726		0.0683	0.0683	0.0000	132.2794	132.2794	0.0322	0.0000	132.9552
Total	**0.1329**	**1.1845**	**0.9673**	**1.5100e-003**		**0.0726**	**0.0726**		**0.0683**	**0.0683**	**0.0000**	**132.2794**	**132.2794**	**0.0322**	**0.0000**	**132.9552**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1754	1.3583	2.2575	4.3300e-003	0.1173	0.0206	0.1378	0.0337	0.0189	0.0526	0.0000	375.3084	375.3084	2.9100e-003	0.0000	375.3695
Worker	0.1271	0.1928	1.8272	5.0300e-003	0.4221	3.2300e-003	0.4253	0.1123	2.9900e-003	0.1153	0.0000	342.8129	342.8129	0.0169	0.0000	343.1686
Total	**0.3025**	**1.5511**	**4.0847**	**9.3600e-003**	**0.5393**	**0.0238**	**0.5631**	**0.1460**	**0.0219**	**0.1679**	**0.0000**	**718.1213**	**718.1213**	**0.0199**	**0.0000**	**718.5381**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1329	1.1845	0.9673	1.5100e-003		0.0726	0.0726		0.0683	0.0683	0.0000	132.2792	132.2792	0.0322	0.0000	132.9551
Total	**0.1329**	**1.1845**	**0.9673**	**1.5100e-003**		**0.0726**	**0.0726**		**0.0683**	**0.0683**	**0.0000**	**132.2792**	**132.2792**	**0.0322**	**0.0000**	**132.9551**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1754	1.3583	2.2575	4.3300e-003	0.1173	0.0206	0.1378	0.0337	0.0189	0.0526	0.0000	375.3084	375.3084	2.9100e-003	0.0000	375.3695
Worker	0.1271	0.1928	1.8272	5.0300e-003	0.4221	3.2300e-003	0.4253	0.1123	2.9900e-003	0.1153	0.0000	342.8129	342.8129	0.0169	0.0000	343.1686
Total	**0.3025**	**1.5511**	**4.0847**	**9.3600e-003**	**0.5393**	**0.0238**	**0.5631**	**0.1460**	**0.0219**	**0.1679**	**0.0000**	**718.1213**	**718.1213**	**0.0199**	**0.0000**	**718.5381**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0392	0.4107	0.3950	6.1000e-004		0.0223	0.0223		0.0205	0.0205	0.0000	55.1085	55.1085	0.0174	0.0000	55.4747
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.0392**	**0.4107**	**0.3950**	**6.1000e-004**		**0.0223**	**0.0223**		**0.0205**	**0.0205**	**0.0000**	**55.1085**	**55.1085**	**0.0174**	**0.0000**	**55.4747**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	1.7100e-003	0.0162	4.0000e-005	3.7400e-003	3.0000e-005	3.7700e-003	1.0000e-003	3.0000e-005	1.0200e-003	0.0000	3.0411	3.0411	1.5000e-004	0.0000	3.0443
Total	**1.1300e-003**	**1.7100e-003**	**0.0162**	**4.0000e-005**	**3.7400e-003**	**3.0000e-005**	**3.7700e-003**	**1.0000e-003**	**3.0000e-005**	**1.0200e-003**	**0.0000**	**3.0411**	**3.0411**	**1.5000e-004**	**0.0000**	**3.0443**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0392	0.4107	0.3950	6.1000e-004		0.0223	0.0223		0.0205	0.0205	0.0000	55.1085	55.1085	0.0174	0.0000	55.4746
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0392**	**0.4107**	**0.3950**	**6.1000e-004**		**0.0223**	**0.0223**		**0.0205**	**0.0205**	**0.0000**	**55.1085**	**55.1085**	**0.0174**	**0.0000**	**55.4746**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	1.7100e-003	0.0162	4.0000e-005	3.7400e-003	3.0000e-005	3.7700e-003	1.0000e-003	3.0000e-005	1.0200e-003	0.0000	3.0411	3.0411	1.5000e-004	0.0000	3.0443
Total	**1.1300e-003**	**1.7100e-003**	**0.0162**	**4.0000e-005**	**3.7400e-003**	**3.0000e-005**	**3.7700e-003**	**1.0000e-003**	**3.0000e-005**	**1.0200e-003**	**0.0000**	**3.0411**	**3.0411**	**1.5000e-004**	**0.0000**	**3.0443**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	22.7138					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3300e-003	0.0505	0.0506	8.0000e-005		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	7.0215	7.0215	5.9000e-004	0.0000	7.0339
Total	**22.7212**	**0.0505**	**0.0506**	**8.0000e-005**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**7.0215**	**7.0215**	**5.9000e-004**	**0.0000**	**7.0339**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	0.0124	0.0188	0.1783	4.9000e-004	0.0412	3.2000e-004	0.0415	0.0110	2.9000e-004	0.0113	0.0000	33.4523	33.4523	1.6500e-003	0.0000	33.4870
Total	**0.0124**	**0.0188**	**0.1783**	**4.9000e-004**	**0.0412**	**3.2000e-004**	**0.0415**	**0.0110**	**2.9000e-004**	**0.0113**	**0.0000**	**33.4523**	**33.4523**	**1.6500e-003**	**0.0000**	**33.4870**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	22.7138					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3300e-003	0.0505	0.0506	8.0000e-005		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	7.0214	7.0214	5.9000e-004	0.0000	7.0339
Total	**22.7212**	**0.0505**	**0.0506**	**8.0000e-005**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**7.0214**	**7.0214**	**5.9000e-004**	**0.0000**	**7.0339**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0124	0.0188	0.1783	4.9000e-004	0.0412	3.2000e-004	0.0415	0.0110	2.9000e-004	0.0113	0.0000	33.4523	33.4523	1.6500e-003	0.0000	33.4870
Total	**0.0124**	**0.0188**	**0.1783**	**4.9000e-004**	**0.0412**	**3.2000e-004**	**0.0415**	**0.0110**	**2.9000e-004**	**0.0113**	**0.0000**	**33.4523**	**33.4523**	**1.6500e-003**	**0.0000**	**33.4870**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0021	4.5941	21.3272	0.0658	4.2094	0.1044	4.3138	1.1316	0.0963	1.2279	0.0000	4,397.8979	4,397.8979	0.1155	0.0000	4,400.3228
Unmitigated	2.0021	4.5941	21.3272	0.0658	4.2094	0.1044	4.3138	1.1316	0.0963	1.2279	0.0000	4,397.8979	4,397.8979	0.1155	0.0000	4,400.3228

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	5,175.00	5,490.00	5490.00	11,240,000	11,240,000
Total	5,175.00	5,490.00	5,490.00	11,240,000	11,240,000

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					

City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.6777	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Unmitigated	8.6777	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.6556					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Total	**8.6777**	**0.0000**	**4.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-004**	**8.0000e-004**	**0.0000**	**0.0000**	**8.5000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					

Architectural Coating	1.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.6556					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-004	8.0000e-004	0.0000	0.0000	8.5000e-004
Total	**8.6777**	**0.0000**	**4.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-004**	**8.0000e-004**	**0.0000**	**0.0000**	**8.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	18.2603	0.0139	4.8000e-004	18.6990
Unmitigated	18.2603	0.0139	4.8000e-004	18.6992

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0.4 / 17.191	18.2603	0.0139	4.8000e-004	18.6992
Total		**18.2603**	**0.0139**	**4.8000e-004**	**18.6992**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0.4 / 17.191	18.2603	0.0139	4.8000e-004	18.6990
Total		**18.2603**	**0.0139**	**4.8000e-004**	**18.6990**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.7856	0.0464	0.0000	1.7605
Unmitigated	0.7856	0.0464	0.0000	1.7605

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	3.87	0.7856	0.0464	0.0000	1.7605
Total		**0.7856**	**0.0464**	**0.0000**	**1.7605**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	3.87	0.7856	0.0464	0.0000	1.7605
Total		**0.7856**	**0.0464**	**0.0000**	**1.7605**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	45.00	Acre	45.00	1,960,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total acreage of 3 phases

Construction Phase - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Trips and VMT - Operational emissions only

Grading -

Vehicle Trips - Per TIA Table 7 - Assuming 2,000,000 annual visitors: 5,490 daily weekend trips divided by 45 acres = 122 trips per day per acre; 5,150 daily weekday trips divided by 45 acres = 115 trips per day per acre

Water And Wastewater - From O&M Assumptions REV tab

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblVehicleTrips	ST_TR	1.59	122.00
tblVehicleTrips	SU_TR	1.59	122.00
tblVehicleTrips	WD_TR	1.59	115.00
tblWater	IndoorWaterUseRate	0.00	400,000.00
tblWater	OutdoorWaterUseRate	53,616,660.73	17,191,000.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	10.1943	74.9133	100.5524	0.2001	18.2360	3.5858	21.1761	9.9757	3.2989	12.6806	0.0000	18,475.3389	18,475.3389	1.9453	0.0000	18,516.1900
2017	9.3184	58.2041	93.5436	0.1999	9.9035	2.2629	12.1664	2.6711	2.1160	4.7872	0.0000	18,009.4249	18,009.4249	1.0953	0.0000	18,032.4263
2018	8.3898	52.0503	86.9231	0.1997	9.9033	1.9430	11.8463	2.6711	1.8177	4.4888	0.0000	17,560.9258	17,560.9258	1.0516	0.0000	17,583.0083
2019	826.7170	47.2364	81.0144	0.1996	9.9033	1.7045	11.6078	2.6711	1.5945	4.2656	0.0000	17,134.8662	17,134.8662	1.0144	0.0000	17,156.1691
Total	**854.6195**	**232.4042**	**362.0335**	**0.7993**	**47.9461**	**9.4962**	**56.7965**	**17.9890**	**8.8272**	**26.2221**	**0.0000**	**71,180.5558**	**71,180.5558**	**5.1066**	**0.0000**	**71,287.7937**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	10.1943	74.9133	100.5524	0.2001	18.2360	3.5858	21.1761	9.9757	3.2989	12.6806	0.0000	18,475.3389	18,475.3389	1.9453	0.0000	18,516.1900
2017	9.3184	58.2041	93.5436	0.1999	9.9035	2.2629	12.1664	2.6711	2.1160	4.7872	0.0000	18,009.4249	18,009.4249	1.0953	0.0000	18,032.4262
2018	8.3898	52.0503	86.9231	0.1997	9.9033	1.9430	11.8463	2.6711	1.8177	4.4888	0.0000	17,560.9258	17,560.9258	1.0516	0.0000	17,583.0083
2019	826.7170	47.2364	81.0144	0.1996	9.9033	1.7045	11.6078	2.6711	1.5945	4.2656	0.0000	17,134.8662	17,134.8662	1.0144	0.0000	17,156.1691
Total	**854.6195**	**232.4042**	**362.0335**	**0.7993**	**47.9461**	**9.4962**	**56.7965**	**17.9890**	**8.8272**	**26.2221**	**0.0000**	**71,180.5558**	**71,180.5558**	**5.1066**	**0.0000**	**71,287.7936**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	47.5494	4.0000e-005	4.5700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	11.8524	24.9548	109.2472	0.3972	25.0354	0.5975	25.6329	6.7087	0.5511	7.2598		29,129.3556	29,129.3556	0.7288		29,144.6608
Total	**59.4017**	**24.9549**	**109.2518**	**0.3972**	**25.0354**	**0.5975**	**25.6329**	**6.7087**	**0.5511**	**7.2598**		**29,129.3655**	**29,129.3655**	**0.7289**	**0.0000**	**29,144.6712**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	47.5494	4.0000e-005	4.5700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	11.8524	24.9548	109.2472	0.3972	25.0354	0.5975	25.6329	6.7087	0.5511	7.2598		29,129.3556	29,129.3556	0.7288		29,144.6608
Total	**59.4017**	**24.9549**	**109.2518**	**0.3972**	**25.0354**	**0.5975**	**25.6329**	**6.7087**	**0.5511**	**7.2598**		**29,129.3655**	**29,129.3655**	**0.7289**	**0.0000**	**29,144.6712**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	3/10/2016	5	50	
2	Site Preparation	Site Preparation	3/11/2016	4/21/2016	5	30	
3	Grading	Grading	4/22/2016	8/4/2016	5	75	
4	Building Construction	Building Construction	8/5/2016	6/6/2019	5	740	
5	Paving	Paving	6/7/2019	8/22/2019	5	55	
6	Architectural Coating	Architectural Coating	8/23/2019	11/7/2019	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,940,300; Non-Residential Outdoor: 980,100 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	226	0.29
Demolition	Excavators	3	8.00	162	0.38
Grading	Excavators	2	8.00	162	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	165.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	823.00	321.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365		4,089.2841	4,089.2841	1.1121		4,112.6374
Total	**4.2876**	**45.6559**	**35.0303**	**0.0399**		**2.2921**	**2.2921**		**2.1365**	**2.1365**		**4,089.2841**	**4,089.2841**	**1.1121**		**4,112.6374**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0747	0.8738	1.7500e-003	0.1415	1.1600e-003	0.1426	0.0375	1.0700e-003	0.0386		147.0890	147.0890	7.7300e-003		147.2513
Total	**0.0616**	**0.0747**	**0.8738**	**1.7500e-003**	**0.1415**	**1.1600e-003**	**0.1426**	**0.0375**	**1.0700e-003**	**0.0386**		**147.0890**	**147.0890**	**7.7300e-003**		**147.2513**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365	0.0000	4,089.2841	4,089.2841	1.1121		4,112.6374
Total	**4.2876**	**45.6559**	**35.0303**	**0.0399**		**2.2921**	**2.2921**		**2.1365**	**2.1365**	**0.0000**	**4,089.2841**	**4,089.2841**	**1.1121**		**4,112.6374**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0747	0.8738	1.7500e-003	0.1415	1.1600e-003	0.1426	0.0375	1.0700e-003	0.0386		147.0890	147.0890	7.7300e-003		147.2513
Total	**0.0616**	**0.0747**	**0.8738**	**1.7500e-003**	**0.1415**	**1.1600e-003**	**0.1426**	**0.0375**	**1.0700e-003**	**0.0386**		**147.0890**	**147.0890**	**7.7300e-003**		**147.2513**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**		**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.0739**	**0.0896**	**1.0486**	**2.1000e-003**	**0.1698**	**1.4000e-003**	**0.1711**	**0.0450**	**1.2800e-003**	**0.0463**		**176.5068**	**176.5068**	**9.2700e-003**		**176.7016**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**	**0.0000**	**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.0896	1.0486	2.1000e-003	0.1698	1.4000e-003	0.1711	0.0450	1.2800e-003	0.0463		176.5068	176.5068	9.2700e-003		176.7016
Total	**0.0739**	**0.0896**	**1.0486**	**2.1000e-003**	**0.1698**	**1.4000e-003**	**0.1711**	**0.0450**	**1.2800e-003**	**0.0463**		**176.5068**	**176.5068**	**9.2700e-003**		**176.7016**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**8.6733**	**3.5842**	**12.2576**	**3.5965**	**3.2975**	**6.8940**		**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.0822**	**0.0996**	**1.1651**	**2.3400e-003**	**0.1886**	**1.5500e-003**	**0.1902**	**0.0500**	**1.4200e-003**	**0.0515**		**196.1187**	**196.1187**	**0.0103**		**196.3351**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**8.6733**	**3.5842**	**12.2576**	**3.5965**	**3.2975**	**6.8940**	**0.0000**	**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0822	0.0996	1.1651	2.3400e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		196.1187	196.1187	0.0103		196.3351
Total	**0.0822**	**0.0996**	**1.1651**	**2.3400e-003**	**0.1886**	**1.5500e-003**	**0.1902**	**0.0500**	**1.4200e-003**	**0.0515**		**196.1187**	**196.1187**	**0.0103**		**196.3351**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4077	31.3917	34.1014	0.0771	2.1421	0.4863	2.6284	0.6126	0.4472	1.0598		7,735.7686	7,735.7686	0.0618		7,737.0655
Worker	3.3804	4.0976	47.9444	0.0962	7.7611	0.0639	7.8250	2.0585	0.0586	2.1170		8,070.2839	8,070.2839	0.4240		8,079.1884
Total	**6.7881**	**35.4893**	**82.0458**	**0.1733**	**9.9033**	**0.5502**	**10.4534**	**2.6711**	**0.5057**	**3.1768**		**15,806.0525**	**15,806.0525**	**0.4858**		**15,816.2539**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4077	31.3917	34.1014	0.0771	2.1421	0.4863	2.6284	0.6126	0.4472	1.0598		7,735.7686	7,735.7686	0.0618		7,737.0655
Worker	3.3804	4.0976	47.9444	0.0962	7.7611	0.0639	7.8250	2.0585	0.0586	2.1170		8,070.2839	8,070.2839	0.4240		8,079.1884
Total	**6.7881**	**35.4893**	**82.0458**	**0.1733**	**9.9033**	**0.5502**	**10.4534**	**2.6711**	**0.5057**	**3.1768**		**15,806.0525**	**15,806.0525**	**0.4858**		**15,816.2539**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2027	28.1311	32.5738	0.0770	2.1423	0.4209	2.5633	0.6127	0.3871	0.9998		7,605.8761	7,605.8761	0.0585		7,607.1053
Worker	3.0134	3.6673	42.8407	0.0961	7.7611	0.0608	7.8219	2.0585	0.0560	2.1144		7,763.7435	7,763.7435	0.3871		7,771.8720
Total	**6.2161**	**31.7985**	**75.4145**	**0.1731**	**9.9035**	**0.4817**	**10.3852**	**2.6712**	**0.4430**	**3.1142**		**15,369.6196**	**15,369.6196**	**0.4456**		**15,378.9772**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2027	28.1311	32.5738	0.0770	2.1423	0.4209	2.5633	0.6127	0.3871	0.9998		7,605.8761	7,605.8761	0.0585		7,607.1053
Worker	3.0134	3.6673	42.8407	0.0961	7.7611	0.0608	7.8219	2.0585	0.0560	2.1144		7,763.7435	7,763.7435	0.3871		7,771.8720
Total	**6.2161**	**31.7985**	**75.4145**	**0.1731**	**9.9035**	**0.4817**	**10.3852**	**2.6712**	**0.4430**	**3.1142**		**15,369.6196**	**15,369.6196**	**0.4456**		**15,378.9772**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0273	25.4925	30.9699	0.0768	2.1422	0.3901	2.5323	0.6126	0.3588	0.9714		7,474.9003	7,474.9003	0.0575		7,476.1069
Worker	2.6938	3.2970	38.4206	0.0961	7.7611	0.0585	7.8197	2.0585	0.0541	2.1126		7,476.0866	7,476.0866	0.3554		7,483.5497

Total	**5.7211**	**28.7895**	**69.3904**	**0.1729**	**9.9033**	**0.4487**	**10.3520**	**2.6711**	**0.4129**	**3.0840**		**14,950.9869**	**14,950.9869**	**0.4129**		**14,959.6566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0273	25.4925	30.9699	0.0768	2.1422	0.3901	2.5323	0.6126	0.3588	0.9714		7,474.9003	7,474.9003	0.0575		7,476.1069
Worker	2.6938	3.2970	38.4206	0.0961	7.7611	0.0585	7.8197	2.0585	0.0541	2.1126		7,476.0866	7,476.0866	0.3554		7,483.5497
Total	**5.7211**	**28.7895**	**69.3904**	**0.1729**	**9.9033**	**0.4487**	**10.3520**	**2.6711**	**0.4129**	**3.0840**		**14,950.9869**	**14,950.9869**	**0.4129**		**14,959.6566**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083		2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**		**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.7819	23.2681	28.8732	0.0767	2.1421	0.3623	2.5044	0.6126	0.3333	0.9459		7,345.8405	7,345.8405	0.0561		7,347.0178
Worker	2.4616	3.0033	35.0209	0.0961	7.7611	0.0572	7.8183	2.0585	0.0530	2.1115		7,208.2640	7,208.2640	0.3305		7,215.2034
Total	**5.2436**	**26.2714**	**63.8941**	**0.1728**	**9.9033**	**0.4195**	**10.3228**	**2.6711**	**0.3863**	**3.0573**		**14,554.1044**	**14,554.1044**	**0.3865**		**14,562.2212**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083	0.0000	2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**	**0.0000**	**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.7819	23.2681	28.8732	0.0767	2.1421	0.3623	2.5044	0.6126	0.3333	0.9459		7,345.8405	7,345.8405	0.0561		7,347.0178
Worker	2.4616	3.0033	35.0209	0.0961	7.7611	0.0572	7.8183	2.0585	0.0530	2.1115		7,208.2640	7,208.2640	0.3305		7,215.2034
Total	**5.2436**	**26.2714**	**63.8941**	**0.1728**	**9.9033**	**0.4195**	**10.3228**	**2.6711**	**0.3863**	**3.0573**		**14,554.1044**	**14,554.1044**	**0.3865**		**14,562.2212**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4259**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**		**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447	0.0000	2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4259**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**	**0.0000**	**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0449	0.0547	0.6383	1.7500e-003	0.1415	1.0400e-003	0.1425	0.0375	9.7000e-004	0.0385		131.3778	131.3778	6.0200e-003		131.5043
Total	**0.0449**	**0.0547**	**0.6383**	**1.7500e-003**	**0.1415**	**1.0400e-003**	**0.1425**	**0.0375**	**9.7000e-004**	**0.0385**		**131.3778**	**131.3778**	**6.0200e-003**		**131.5043**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	825.9570					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	**826.2234**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**281.9473**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4935	0.6021	7.0212	0.0193	1.5560	0.0115	1.5675	0.4127	0.0106	0.4233		1,445.1562	1,445.1562	0.0663		1,446.5475
Total	**0.4935**	**0.6021**	**7.0212**	**0.0193**	**1.5560**	**0.0115**	**1.5675**	**0.4127**	**0.0106**	**0.4233**		**1,445.1562**	**1,445.1562**	**0.0663**		**1,446.5475**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	825.9570					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		281.9473
Total	**826.2234**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**281.9473**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4935	0.6021	7.0212	0.0193	1.5560	0.0115	1.5675	0.4127	0.0106	0.4233		1,445.1562	1,445.1562	0.0663		1,446.5475
Total	**0.4935**	**0.6021**	**7.0212**	**0.0193**	**1.5560**	**0.0115**	**1.5675**	**0.4127**	**0.0106**	**0.4233**		**1,445.1562**	**1,445.1562**	**0.0663**		**1,446.5475**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day				
Mitigated	11.8524	24.9548	109.2472	0.3972	25.0354	0.5975	25.6329	6.7087	0.5511	7.2598	29,129.3556	29,129.3556	0.7288		29,144.6608
Unmitigated	11.8524	24.9548	109.2472	0.3972	25.0354	0.5975	25.6329	6.7087	0.5511	7.2598	29,129.3556	29,129.3556	0.7288		29,144.6608

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	5,175.00	5,490.00	5490.00	11,240,000	11,240,000
Total	5,175.00	5,490.00	5,490.00	11,240,000	11,240,000

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.537592	0.061793	0.165057	0.108770	0.030585	0.004597	0.020545	0.058479	0.001878	0.003474	0.005689	0.000175	0.001366

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	47.5494	4.0000e-005	4.5700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Unmitigated	47.5494	4.0000e-005	4.5700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.6007					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	41.9483					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.2000e-004	4.0000e-005	4.5700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Total	**47.5494**	**4.0000e-005**	**4.5700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.8500e-003**	**9.8500e-003**	**3.0000e-005**		**0.0104**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Consumer Products	41.9483					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.2000e-004	4.0000e-005	4.5700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8500e-003	9.8500e-003	3.0000e-005		0.0104
Architectural Coating	5.6007					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**47.5494**	**4.0000e-005**	**4.5700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.8500e-003**	**9.8500e-003**	**3.0000e-005**		**0.0104**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Gateway Park

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	10.75	Acre	10.75	468,270.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total acreage of grass and vegetation planting

Construction Phase - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Off-road Equipment - Operational emissions only

Trips and VMT - Operational emissions only

Grading -

Vehicle Trips - Just land use change

Water And Wastewater - Just land use change

Solid Waste - Just land use change

Land Use Change - Grass and vegetation planting

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblSolidWaste	SolidWasteGenerationRate	0.92	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblWater	OutdoorWaterUseRate	12,808,424.51	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.6783	5.6144	5.3719	8.2800e-003	0.4551	0.3025	0.7575	0.1671	0.2824	0.4495	0.0000	722.7574	722.7574	0.1132	0.0000	725.1348
2017	5.6798	1.9293	2.0867	3.6100e-003	0.1181	0.1071	0.2251	0.0319	0.1003	0.1323	0.0000	305.1893	305.1893	0.0408	0.0000	306.0464
Total	**6.3581**	**7.5437**	**7.4586**	**0.0119**	**0.5731**	**0.4095**	**0.9826**	**0.1990**	**0.3827**	**0.5817**	**0.0000**	**1,027.9467**	**1,027.9467**	**0.1540**	**0.0000**	**1,031.1812**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.6783	5.6144	5.3719	8.2800e-003	0.4551	0.3025	0.7575	0.1671	0.2824	0.4495	0.0000	722.7569	722.7569	0.1132	0.0000	725.1343
2017	5.6798	1.9293	2.0867	3.6100e-003	0.1181	0.1071	0.2251	0.0319	0.1003	0.1323	0.0000	305.1892	305.1892	0.0408	0.0000	306.0462
Total	**6.3581**	**7.5437**	**7.4586**	**0.0119**	**0.5731**	**0.4095**	**0.9826**	**0.1990**	**0.3827**	**0.5817**	**0.0000**	**1,027.9461**	**1,027.9461**	**0.1540**	**0.0000**	**1,031.1806**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0730	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0730**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.0000**	**2.0000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0730	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0730**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.0000**	**2.0000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
Vegetation Land Change	46.3325
Total	**46.3325**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	1/28/2016	5	20	
2	Site Preparation	Site Preparation	1/29/2016	2/11/2016	5	10	
3	Grading	Grading	2/12/2016	3/24/2016	5	30	
4	Building Construction	Building Construction	3/25/2016	5/18/2017	5	300	
5	Paving	Paving	5/19/2017	6/15/2017	5	20	
6	Architectural Coating	Architectural Coating	6/16/2017	7/13/2017	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 702,405; Non-Residential Outdoor: 234,135 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	197.00	77.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	39.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0429	0.4566	0.3503	4.0000e-004		0.0229	0.0229		0.0214	0.0214	0.0000	37.0974	37.0974	0.0101	0.0000	37.3092
Total	**0.0429**	**0.4566**	**0.3503**	**4.0000e-004**		**0.0229**	**0.0229**		**0.0214**	**0.0214**	**0.0000**	**37.0974**	**37.0974**	**0.0101**	**0.0000**	**37.3092**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	8.5000e-004	8.1900e-003	2.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2385	1.2385	7.0000e-005	0.0000	1.2399
Total	**5.7000e-004**	**8.5000e-004**	**8.1900e-003**	**2.0000e-005**	**1.3600e-003**	**1.0000e-005**	**1.3700e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.2385**	**1.2385**	**7.0000e-005**	**0.0000**	**1.2399**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0429	0.4566	0.3503	4.0000e-004		0.0229	0.0229		0.0214	0.0214	0.0000	37.0973	37.0973	0.0101	0.0000	37.3092
Total	**0.0429**	**0.4566**	**0.3503**	**4.0000e-004**		**0.0229**	**0.0229**		**0.0214**	**0.0214**	**0.0000**	**37.0973**	**37.0973**	**0.0101**	**0.0000**	**37.3092**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	8.5000e-004	8.1900e-003	2.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2385	1.2385	7.0000e-005	0.0000	1.2399
Total	**5.7000e-004**	**8.5000e-004**	**8.1900e-003**	**2.0000e-005**	**1.3600e-003**	**1.0000e-005**	**1.3700e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.2385**	**1.2385**	**7.0000e-005**	**0.0000**	**1.2399**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0254	0.2732	0.2055	2.0000e-004		0.0147	0.0147		0.0135	0.0135	0.0000	18.4386	18.4386	5.5600e-003	0.0000	18.5554
Total	**0.0254**	**0.2732**	**0.2055**	**2.0000e-004**	**0.0903**	**0.0147**	**0.1050**	**0.0497**	**0.0135**	**0.0632**	**0.0000**	**18.4386**	**18.4386**	**5.5600e-003**	**0.0000**	**18.5554**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	5.1000e-004	4.9200e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.2000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7431	0.7431	4.0000e-005	0.0000	0.7440

Total	**3.4000e-004**	**5.1000e-004**	**4.9200e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.2000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7431**	**0.7431**	**4.0000e-005**	**0.0000**	**0.7440**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0254	0.2732	0.2055	2.0000e-004		0.0147	0.0147		0.0135	0.0135	0.0000	18.4385	18.4385	5.5600e-003	0.0000	18.5553
Total	**0.0254**	**0.2732**	**0.2055**	**2.0000e-004**	**0.0903**	**0.0147**	**0.1050**	**0.0497**	**0.0135**	**0.0632**	**0.0000**	**18.4385**	**18.4385**	**5.5600e-003**	**0.0000**	**18.5553**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	5.1000e-004	4.9200e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.2000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7431	0.7431	4.0000e-005	0.0000	0.7440
Total	**3.4000e-004**	**5.1000e-004**	**4.9200e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.2000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7431**	**0.7431**	**4.0000e-005**	**0.0000**	**0.7440**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0972	1.1222	0.7371	9.3000e-004		0.0538	0.0538		0.0495	0.0495	0.0000	87.2936	87.2936	0.0263	0.0000	87.8465
Total	**0.0972**	**1.1222**	**0.7371**	**9.3000e-004**	**0.1301**	**0.0538**	**0.1839**	**0.0540**	**0.0495**	**0.1034**	**0.0000**	**87.2936**	**87.2936**	**0.0263**	**0.0000**	**87.8465**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1500e-003	1.7000e-003	0.0164	3.0000e-005	2.7200e-003	2.0000e-005	2.7500e-003	7.2000e-004	2.0000e-005	7.5000e-004	0.0000	2.4769	2.4769	1.4000e-004	0.0000	2.4799
Total	**1.1500e-003**	**1.7000e-003**	**0.0164**	**3.0000e-005**	**2.7200e-003**	**2.0000e-005**	**2.7500e-003**	**7.2000e-004**	**2.0000e-005**	**7.5000e-004**	**0.0000**	**2.4769**	**2.4769**	**1.4000e-004**	**0.0000**	**2.4799**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0972	1.1222	0.7371	9.3000e-004		0.0538	0.0538		0.0495	0.0495	0.0000	87.2935	87.2935	0.0263	0.0000	87.8464

Total	**0.0972**	**1.1222**	**0.7371**	**9.3000e-004**	**0.1301**	**0.0538**	**0.1839**	**0.0540**	**0.0495**	**0.1034**	**0.0000**	**87.2935**	**87.2935**	**0.0263**	**0.0000**	**87.8464**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1500e-003	1.7000e-003	0.0164	3.0000e-005	2.7200e-003	2.0000e-005	2.7500e-003	7.2000e-004	2.0000e-005	7.5000e-004	0.0000	2.4769	2.4769	1.4000e-004	0.0000	2.4799
Total	**1.1500e-003**	**1.7000e-003**	**0.0164**	**3.0000e-005**	**2.7200e-003**	**2.0000e-005**	**2.7500e-003**	**7.2000e-004**	**2.0000e-005**	**7.5000e-004**	**0.0000**	**2.4769**	**2.4769**	**1.4000e-004**	**0.0000**	**2.4799**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3423	2.8649	1.8599	2.6900e-003		0.1977	0.1977		0.1858	0.1858	0.0000	243.3644	243.3644	0.0604	0.0000	244.6319
Total	**0.3423**	**2.8649**	**1.8599**	**2.6900e-003**		**0.1977**	**0.1977**		**0.1858**	**0.1858**	**0.0000**	**243.3644**	**243.3644**	**0.0604**	**0.0000**	**244.6319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0927	0.7825	1.1082	1.8600e-003	0.0500	0.0118	0.0618	0.0144	0.0108	0.0252	0.0000	168.6416	168.6416	1.3600e-003	0.0000	168.6702
Worker	0.0758	0.1120	1.0814	2.1500e-003	0.1797	1.5400e-003	0.1812	0.0478	1.4100e-003	0.0492	0.0000	163.4635	163.4635	9.2500e-003	0.0000	163.6579
Total	**0.1685**	**0.8945**	**2.1896**	**4.0100e-003**	**0.2297**	**0.0133**	**0.2430**	**0.0622**	**0.0122**	**0.0744**	**0.0000**	**332.1051**	**332.1051**	**0.0106**	**0.0000**	**332.3281**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3423	2.8649	1.8599	2.6900e-003		0.1977	0.1977		0.1858	0.1858	0.0000	243.3641	243.3641	0.0604	0.0000	244.6316
Total	**0.3423**	**2.8649**	**1.8599**	**2.6900e-003**		**0.1977**	**0.1977**		**0.1858**	**0.1858**	**0.0000**	**243.3641**	**243.3641**	**0.0604**	**0.0000**	**244.6316**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0927	0.7825	1.1082	1.8600e-003	0.0500	0.0118	0.0618	0.0144	0.0108	0.0252	0.0000	168.6416	168.6416	1.3600e-003	0.0000	168.6702

Worker	0.0758	0.1120	1.0814	2.1500e-003	0.1797	1.5400e-003	0.1812	0.0478	1.4100e-003	0.0492	0.0000	163.4635	163.4635	9.2500e-003	0.0000	163.6579
Total	**0.1685**	**0.8945**	**2.1896**	**4.0100e-003**	**0.2297**	**0.0133**	**0.2430**	**0.0622**	**0.0122**	**0.0744**	**0.0000**	**332.1051**	**332.1051**	**0.0106**	**0.0000**	**332.3281**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1536	1.3071	0.8974	1.3300e-003		0.0882	0.0882		0.0828	0.0828	0.0000	118.5422	118.5422	0.0292	0.0000	119.1548
Total	**0.1536**	**1.3071**	**0.8974**	**1.3300e-003**		**0.0882**	**0.0882**		**0.0828**	**0.0828**	**0.0000**	**118.5422**	**118.5422**	**0.0292**	**0.0000**	**119.1548**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0429	0.3453	0.5237	9.1000e-004	0.0246	5.0200e-003	0.0297	7.0800e-003	4.6200e-003	0.0117	0.0000	81.6667	81.6667	6.4000e-004	0.0000	81.6801
Worker	0.0330	0.0494	0.4735	1.0600e-003	0.0885	7.2000e-004	0.0892	0.0235	6.6000e-004	0.0242	0.0000	77.4452	77.4452	4.1600e-003	0.0000	77.5325
Total	**0.0759**	**0.3947**	**0.9972**	**1.9700e-003**	**0.1132**	**5.7400e-003**	**0.1189**	**0.0306**	**5.2800e-003**	**0.0359**	**0.0000**	**159.1119**	**159.1119**	**4.8000e-003**	**0.0000**	**159.2126**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1536	1.3071	0.8974	1.3300e-003		0.0882	0.0882		0.0828	0.0828	0.0000	118.5420	118.5420	0.0292	0.0000	119.1547
Total	**0.1536**	**1.3071**	**0.8974**	**1.3300e-003**		**0.0882**	**0.0882**		**0.0828**	**0.0828**	**0.0000**	**118.5420**	**118.5420**	**0.0292**	**0.0000**	**119.1547**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0429	0.3453	0.5237	9.1000e-004	0.0246	5.0200e-003	0.0297	7.0800e-003	4.6200e-003	0.0117	0.0000	81.6667	81.6667	6.4000e-004	0.0000	81.6801
Worker	0.0330	0.0494	0.4735	1.0600e-003	0.0885	7.2000e-004	0.0892	0.0235	6.6000e-004	0.0242	0.0000	77.4452	77.4452	4.1600e-003	0.0000	77.5325
Total	**0.0759**	**0.3947**	**0.9972**	**1.9700e-003**	**0.1132**	**5.7400e-003**	**0.1189**	**0.0306**	**5.2800e-003**	**0.0359**	**0.0000**	**159.1119**	**159.1119**	**4.8000e-003**	**0.0000**	**159.2126**

3.6 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0191	0.2030	0.1473	2.2000e-004		0.0114	0.0114		0.0105	0.0105	0.0000	20.6934	20.6934	6.3400e-003	0.0000	20.8266

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0191**	**0.2030**	**0.1473**	**2.2000e-004**		**0.0114**	**0.0114**		**0.0105**	**0.0105**	**0.0000**	**20.6934**	**20.6934**	**6.3400e-003**	**0.0000**	**20.8266**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	7.6000e-004	7.2800e-003	2.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.1913	1.1913	6.0000e-005	0.0000	1.1926
Total	**5.1000e-004**	**7.6000e-004**	**7.2800e-003**	**2.0000e-005**	**1.3600e-003**	**1.0000e-005**	**1.3700e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.1913**	**1.1913**	**6.0000e-005**	**0.0000**	**1.1926**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0191	0.2030	0.1473	2.2000e-004		0.0114	0.0114		0.0105	0.0105	0.0000	20.6934	20.6934	6.3400e-003	0.0000	20.8265
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0191**	**0.2030**	**0.1473**	**2.2000e-004**		**0.0114**	**0.0114**		**0.0105**	**0.0105**	**0.0000**	**20.6934**	**20.6934**	**6.3400e-003**	**0.0000**	**20.8265**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	7.6000e-004	7.2800e-003	2.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.1913	1.1913	6.0000e-005	0.0000	1.1926
Total	**5.1000e-004**	**7.6000e-004**	**7.2800e-003**	**2.0000e-005**	**1.3600e-003**	**1.0000e-005**	**1.3700e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.1913**	**1.1913**	**6.0000e-005**	**0.0000**	**1.1926**

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.4261					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3200e-003	0.0219	0.0187	3.0000e-005		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	2.5533	2.5533	2.7000e-004	0.0000	2.5589
Total	**5.4294**	**0.0219**	**0.0187**	**3.0000e-005**		**1.7300e-003**	**1.7300e-003**		**1.7300e-003**	**1.7300e-003**	**0.0000**	**2.5533**	**2.5533**	**2.7000e-004**	**0.0000**	**2.5589**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3200e-003	1.9700e-003	0.0189	4.0000e-005	3.5400e-003	3.0000e-005	3.5700e-003	9.4000e-004	3.0000e-005	9.7000e-004	0.0000	3.0973	3.0973	1.7000e-004	0.0000	3.1008
Total	**1.3200e-003**	**1.9700e-003**	**0.0189**	**4.0000e-005**	**3.5400e-003**	**3.0000e-005**	**3.5700e-003**	**9.4000e-004**	**3.0000e-005**	**9.7000e-004**	**0.0000**	**3.0973**	**3.0973**	**1.7000e-004**	**0.0000**	**3.1008**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.4261					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3200e-003	0.0219	0.0187	3.0000e-005		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	2.5533	2.5533	2.7000e-004	0.0000	2.5589
Total	**5.4294**	**0.0219**	**0.0187**	**3.0000e-005**		**1.7300e-003**	**1.7300e-003**		**1.7300e-003**	**1.7300e-003**	**0.0000**	**2.5533**	**2.5533**	**2.7000e-004**	**0.0000**	**2.5589**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3200e-003	1.9700e-003	0.0189	4.0000e-005	3.5400e-003	3.0000e-005	3.5700e-003	9.4000e-004	3.0000e-005	9.7000e-004	0.0000	3.0973	3.0973	1.7000e-004	0.0000	3.1008
Total	**1.3200e-003**	**1.9700e-003**	**0.0189**	**4.0000e-005**	**3.5400e-003**	**3.0000e-005**	**3.5700e-003**	**9.4000e-004**	**3.0000e-005**	**9.7000e-004**	**0.0000**	**3.0973**	**3.0973**	**1.7000e-004**	**0.0000**	**3.1008**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0730	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.0000e-004
Unmitigated	2.0730	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.0000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2442					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8288					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.0000e-004
Total	**2.0730**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.0000**	**2.0000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2442					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8288					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.0000e-004
Total	**2.0730**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.0000**	**2.0000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

	Total CO2	CH4	N2O	CO2e

Category	MT			
Unmitigated	46.3325	0.0000	0.0000	46.3325

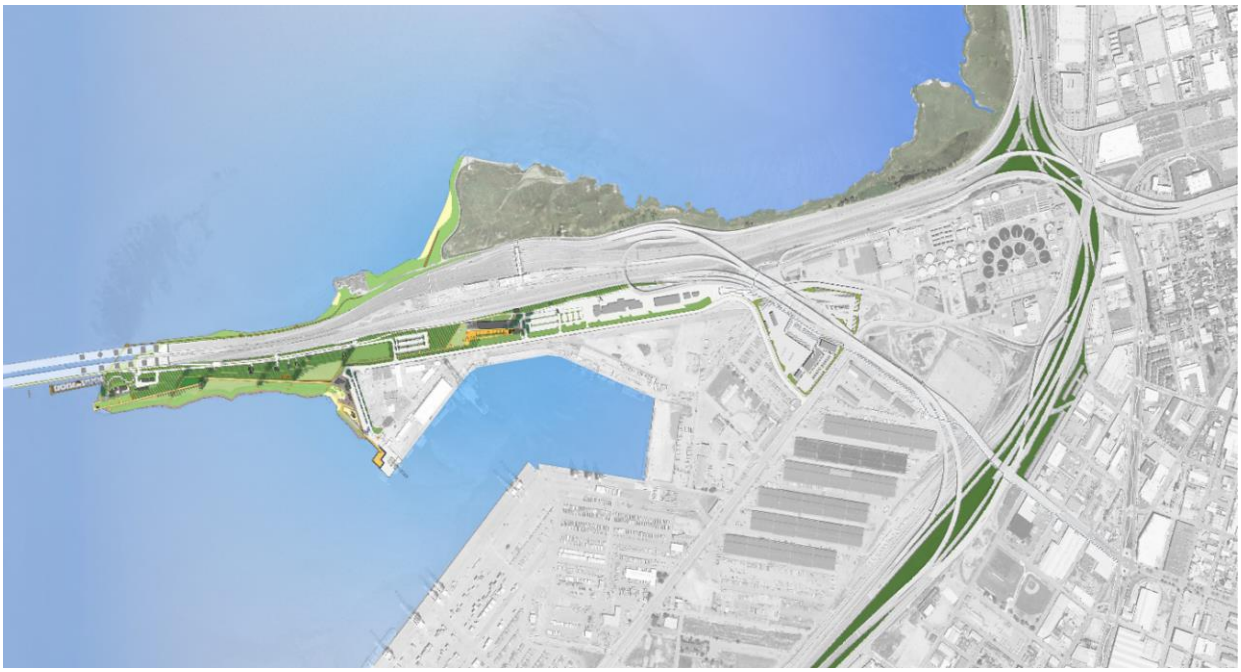
10.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	0 / 10.75	46.3325	0.0000	0.0000	46.3325
Total		**46.3325**	**0.0000**	**0.0000**	**46.3325**

Appendix F
Natural Environment Study

Natural Environment Study



Gateway Park

City of Oakland, Alameda County, California

December 2015

Natural Environment Study

Gateway Park Project

City of Oakland, Alameda County, CA
December 2015

BAY AREA TOLL AUTHORITY

Prepared by:
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Summary

Project Description

The Gateway Park Working Group (project proponent) proposes to create a new park (Park or Project) at the eastern end of the San Francisco Oakland Bay Bridge (SFOBB or Bay Bridge) in Oakland, California (**Figures 1 and 2**). A Park at this location would provide a gateway to both the new East Span of the Bay Bridge and the City of Oakland. The Park includes approximately 45 acres along the waterfront near the touchdown of the new East Span of the Bay Bridge. The Park would provide safe access to the shoreline and existing trails, and it would include active and passive recreation opportunities (**Figure 3**). Currently, the site serves mostly as a maintenance yard and staging area for the east span of the Bay Bridge. It contains a number of small temporary and permanent buildings.

Purpose and Need

The primary purpose of the Project is to provide a distinctive entryway park to the East Bay that connects to the new bicycle/pedestrian path on the new east span of the Bay Bridge. The Project purpose also is to provide safe multimodal access to the shoreline and to provide passive and active recreation opportunities. The Project purpose also includes providing interpretive features for natural resources and transportation history and a venue for community events and art installations. It will be designed to meet mitigation commitments for a number of transportation projects including the new east span of the Bay Bridge.

The project is needed because there is a lack of multimodal transportation and shoreline access in West Oakland and the East Bay. The project is needed to fulfill long-standing planning commitments to build a park and improve safe access to the shore in the East Bay. The project is needed to create a safe landing for bicycles and pedestrians using the new East Span of the Bay Bridge. The project is needed because there is a lack of parks and recreation opportunities in West Oakland. Further, there is a lack of public venues for large events and public art displays in West Oakland and the East Bay.

Summary of Study Methods

The study area includes 45 acres of terrestrial area and 19 acres of San Francisco Bay wherein project improvements are proposed or that are immediately adjacent to project improvements or construction.

Biological resources and potential impacts on these resources from the proposed project were identified through a literature and database review, correspondence with USFWS, and reconnaissance field surveys. It was determined that the following studies would be required to document natural resources in the biological study area (defined in Chapter 3, *Results: Environmental Setting*).

- A botanical field survey to identify plant communities, native trees, suitable habitat for sensitive plant species, and invasive plants
- A general habitat evaluation to determine whether suitable habitat exists for sensitive wildlife species
- A general habitat evaluation to determine whether suitable habitat exists for sensitive fish species, including essential fish habitat (EFH)
- A delineation of waters of the United States

The special-status plant, wildlife, and fish species that are known to occur or have the potential to occur in the geographic region were identified based on the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (**Appendix A**), California Natural Diversity Database (CNDDB) records search (**Appendix B**), species lists provided by United States Fish and Wildlife Service (USFWS) (**Appendix C**), and species distribution and habitat requirements data.

Biological surveys of the terrestrial portions of the study area were conducted June 6 and 7, 2013, and May 8, 2014, by ICF biologists. No field surveys were conducted for fisheries resources. All fish-related information and potential impacts on these resources from the Project were identified through a literature and database review, correspondence with the USFWS, NMFS, and existing documents.

ICF biologists also delineated the study area on June 6 and 7, 2013, and prepared the Preliminary Delineation of Waters of the U.S. (**Appendix D**).

Summary of Biological Resources

The Park includes approximately 45 acres along the waterfront near the touchdown of the new East Span of the Bay Bridge and approximately 19 acres of marine habitats in the Central San Francisco Bay. The project area supports developed areas lacking any natural habitat, common vegetation communities (ruderal vegetation) and sensitive natural communities (northern foredunes, sandy beach, tidal salt marsh, seasonal wetland, shallow bay, deep bay and potentially eelgrass beds) as summarized in **Table S-1.**

Table S-1. Summary of Habitat Types Present in the Study Area

Community Type	Total Study Area (acres)
Terrestrial Communities	
Developed Areas	25.6
Ruderal vegetation	14.2
Northern foredunes*	1.1
Sandy beach*	1.9
Tidal salt marsh*	2.2
Seasonal wetland*	0.01
Subtotal	***45.0***
Marine Communities	
Shallow Bay*	6.5
Deep Bay*	12.6
Eelgrass beds*	TBD (to be determined in subsequent design)
Subtotal	***19.1***
Total	**64**

*****Natural communities of special concern, discussed in Section 3.2.
Tidal salt marsh and seasonal wetlands are considered federal and state jurisdictional wetlands.
Shallow bay and deep bay are considered federal and state waters.

Federal and state-listed fish and wildlife species with moderate/high potential to occur on the site include:

- California Clapper Rail (*Rallus longirostris obsoletus*), federally and state endangered, state fully protected;
- California Black Rail (*laterallus jamaicensis* ssp. *Coturniculus*), state threatened;
- California Least Tern (*Sternula antillarium browni*), federally and state endangered;
- Western Snowy Plover (*Charadrius alexandrines nivosus*), federally threatened;
- Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*), federally and state endangered, state fully protected;
- Central California coast steelhead (*Oncorhynchus mykiss*), federally threatened;

- Central Valley winter-run Chinook salmon (*Oncorhynchus tshawytscha*), federally and state endangered;
- Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*), federally and state threatened;
- North American green sturgeon (*Acipenser medirostris*), federally threatened, state species of concern; and
- Longfin smelt (*Spirinchus thaleichthys*), state threatened, federal candidate.

Other special status species with moderate/high potential to occur on the project site include:

- Northern harrier (*Circus Cyaneus*), state species of concern;
- Alameda Song Sparrow (*M. m. pusillula*), state species of concern;
- Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), state species of concern;
- harbor seal (*Phoca vitulina*), protected by the Marine Mammal Protection Act (MMPA);
- California sea lion (*Zalophus californicus californianus*), protected by the MMPA; and
- harbor porpoise (*Phocoena phocoena*), protected by the MMPA

Summary of Project Impacts

The following natural resource impacts were identified as having the potential to occur due to the proposed project.

Habitat and Natural Communities of Special Concern

The overall impacts to habitats of special concern are summarized in **Table S-2.**

Table S-2. Summary of Impacts on Natural Communities of Special Concern

Community Type	Total Study Area (acres)	Permanent Impact Area (acres)	Temporary Impact Area (acres)
Tidal Salt Marsh	2.19	0.006	0.007
Seasonal Wetland	0.01	0.01	N/A
Northern Foredunes	1.10	0.18	0.04
Sandy Beach	1.91	0.08	0.10
Eelgrass Beds	Limited area (TBD during subsequent design)	Limited area (TBD during subsequent design)	Limited area (TBD during subsequent design)
Shallow Bay	6.5	0.24	0.10
Deep Bay	12.6	N/A	N/A

- **Tidal Marsh.** The Project would result in direct impacts to tidal marsh from construction of the path to Radio Beach. As described in Section 1.3.4, *Radio Beach*, the path is divided into five segments. Construction of the path to Radio Beach (Segment 3, 395-foot-long boardwalk) north of I-80 will result in a permanent impact to 0.006 acres and temporary impact to 0.0007 acres of tidal marsh habitat. Indirect impacts on tidal wetland habitat could occur from adjacent construction activity due to erosion and sedimentation and discharge of pollutants into the marsh and increase recreational encroachment during operations. The project will also result in restoration of the extant tidal marsh through removal of non-native elements and replanting.
- **Seasonal Wetland.** There is a small seasonal wetland on the south side of I-80 in a shallow topographic depression on the southern margin of Burma Road (**Appendix E**). This wetland will be filled due to the need to elevate the site for sea level rise resiliency.
- **Northern Foredunes.** An approximately 1.1-acre patch of northern foredunes is located on the northern shoreline of Radio Beach. Construction of the path to Radio Beach (Segment 5, 410-foot-long boardwalk) north of I-80 will result in permanent impacts on 0.18 acre and temporary impacts on 0.04 acre of northern foredunes. The project will also result in restoration of the extant northern foredunes area through removal of non-native elements and replanting.
- **Sandy Beach.** There are sandy beach areas on the north and south side of I-80. On the south side a small area (0.08 acres) will be lost due to installation of the proposed kayak ramp. The Project would not directly impact the sandy beach north of I-80 (Radio Beach). Increased recreational activity will result in more human presence at sandy beach areas on the south and north sides of the project that could affect foraging activity by some shorebirds.
- **Eelgrass Beds.** The path to Radio Beach is directly adjacent to a large path of eelgrass north of the Bay Bridge. It is possible that some eelgrass will be disturbed and/or shaded by construction of the path to Radio Beach. The exact area of encroachment will need to be determined during the subsequent design phase. Indirect effects to the eelgrass beds could occur from the construction of the proposed project as a result of increased turbidity and sedimentation, however, the avoidance and minimization to protect water quality and BMPs will be implemented to reduce these potential effects.
- **Shallow Bay (Estuarine)**. Approximately 0.24 acres of shallow bay (estuarine habitat) would be permanently impacted from construction of the new pier, the pathway to Radio Beach, and the shoreline protection for the EBMUD outfall. The pier and the pathway would also result in new shading of a total of 0.37 acres of shallow bay. Indirect effects would occur during construction due to in-water work.
- **Deep Bay/Channel Habitat.** The project will not directly impact deep bay/channel habitat. Indirect effects could occur from increased turbidity and sedimentation during construction on the surrounding deep bay /channel habitat.

Special-Status Plant Species

- **Beach Layia, Blue Coast Gilia, and California Seablite.** Suitable habitat for these species (coastal dunes, scrub, and or wetlands) is present in the study area at Radio Beach. None of the species were detected during the 2014 botanical surveys and thus no effects to these plants are expected.
- **Invasive Plants.** Invasive plant species were documented in the study area. The proposed construction activities have the potential to further spread invasive species in and beyond the study area.

Special-Status Wildlife Species

- **California Clapper Rail, California Black Rail, and Salt Marsh Harvest Mouse.** The tidal salt marsh adjacent to the project area on the north side of I-80 (called the Emeryville Crescent) provides suitable habitat for the California clapper rail, California black rail and salt marsh harvest mouse. However, the narrow fringe of tidal marsh within the project area is likely too small and isolated to support rails or harvest mouse may provide foraging habitat for the rails. The project would result in temporary and permanent disturbance to the onsite tidal marsh due to construction. The project would also result in indirect disturbance to onsite and offsite tidal marsh due to increased recreational use and human presence in adjacent areas.
- **California Least Tern.** The California least tern has been observed to be foraging on the site and offshore, but suitable nesting habitat is not present on or adjacent to the project site. Project construction could temporarily disturb open-water and eelgrass foraging areas immediately adjacent to construction. The project would also result in fill and/or shading of shallow bay habitat as described above that would reduce foraging habitat for this species.
- **Western Snowy Plover.** The Western snowy plover may forage on the sandy beach areas and at northern foredunes at Radio Beach, but the site does not provide suitable nesting habitat. Project construction could temporarily northern foredune habitat during construction. The project would also result in increased recreational activity and human presence at the sandy beach area south of I-80 and at Radio Beach north of I-80.
- **Northern Harrier, Alameda Song Sparrow and Saltmarsh Common Yellowthroat**. Northern harriers may forage in the adjacent tidal marsh, known as the Emeryville Crescent, but are unlikely to occur within the study area. The tidal marsh in the study area is poor foraging habitat because of its limited size and proximity to the high level of ambient noise from the Bay Bridge. Alameda song sparrow and saltmarsh common yellowthroat will not be directly impacted by the proposed project. Indirect effects from increased recreational activity in the Radio Beach area could occur from disruption to their foraging and nesting behavior or the attraction of predators resulting from increased trash in the vicinity.

Special-Status Fish Species

- **Central California Coast Steelhead.** The project area provides foraging, rearing, and migratory habitat for adult and juvenile central California coast steelhead. Pile driving for the pier and the path to Radio Beach may result in injury or mortality to steelhead if present in nearby areas during construction. The proposed project would result in the temporary and permanent loss of shallow bay habitat area due to fill and shading and this habitat provides foraging and rearing habitat for juvenile steelhead, as described above.
- **Chinook Salmon.** The project area provides migratory habitat for adult and juvenile Sacramento winter-run Chinook salmon and Central Valley spring-run Chinook salmon. Impacts to this species would the same as those discussed above for steelhead.
- **Green Sturgeon.** The estuarine habitat in the project area could be used as a foraging area for green sturgeon. Critical habitat for greens sturgeon falls within the project area. The impacts to green sturgeon would similar to the impacts to steelhead described above.
- **Longfin Smelt.** The project action area provides migratory habitat for adult longfin smelt. The impacts to longfin smelt would similar to the impacts to steelhead described above.

Essential Fish Habitat

- **Essential Fish Habitat.** The project action area is within the region designated as essential fish habitat (EFH) for Pacific salmon, Pacific groundfish and coastal pelagic species. The proposed project is expected to have short- and long-term effects on EFH for groundfish. Potential direct short-term effects include short-term water quality degradation from localized increases in turbidity and suspended sediment and potential discharges of and exposure to contaminants in the action area during construction activities. The project will also result in loss of shallow bay habitat due to new pilings for the pier, the pathway to Radio Beach and shoreline protection for the EBMUD outfall. The project will also result in shading from the new pier and the pathway.

Marine Mammals

- **Marine Mammals.** Marine mammals, including harbor seals, sea lions, and harbor porpoise may forage in the project area offshore. Grey whales are unlikely but possible visitor to the project vicinity as well. Project pile driving could result in physical injury to these species. The project will also result in loss of shallow bay habitat due to fill and habitat alteration due to shading that would reduce potential foraging areas for seals, sea lions, and harbor porpoise.

Migratory and Non-Migratory Birds

- **Migratory and Non-Migratory Birds.** Migratory birds may forage in the project area. Non-migratory birds may nest at the eastern end of Bay Bridge, near the project area. These birds include barn owl, black phoebe, house finch, killdeer, mourning dove, European starling,

house sparrow, and rock pigeon. The sandy beach and foredune areas provide potential foraging habitat for shorebirds, including California least terns, snowy plovers, killdeer (*Charadrius vociferous*), Western sandpipers (*Calidris mauri*), long-billed curlews (*Numenius americanus*), willets (*Tringa semipalmata*), and raptors such as the white-tailed kite (*Elanus leucurus*) and northern harrier. Offshore areas provide additional foraging opportunities for waterfowl and seabirds. The project will result in the loss of foraging habitat and could result in nest disturbance of certain species without proper avoidance and minimization measures.

Cumulative Impacts

Without avoidance, minimization, and mitigation measures, the project could contribute considerably to cumulative impacts on terrestrial and marine habitats and species in combination with the past, present, and future impacts of the East Span project, the redevelopment of the Oakland Army Base, operations and maintenance dredging, and other projects near the San Francisco Bay shoreline and in San Francisco Bay. With the identified avoidance minimization, and mitigation measures, the project would not contribute considerably to cumulative natural resource effects.

Avoidance and Minimization Measures

The project proponent will implement the following avoidance and minimization efforts summarized in **Table S-3.**

Table S-3. Avoidance and Minimization Efforts

Description of Measure
Install Construction Barrier Fencing around Environmentally Sensitive Areas in and adjacent to the Construction Area to Protect Sensitive Biological Resources to Be Avoided
Prepare Environmental Awareness Program and Conduct Environmental Awareness Training for Construction Employees
Protect Water Quality and Prevent Erosion and Sedimentation in Drainages, Waterways and Wetlands
Implement Measures to Avoid the Introduction and Spread of Invasive Plants
Retain a Biological Monitor to Conduct Construction Monitoring in and adjacent to all Environmentally Sensitive Areas
Prior to construction of Phase 3 of park development, conduct Plant Surveys for Beach Layia, Blues Coast Gila, and California Seablite between June 1 and September
Remove all Vegetation by Hand and Install Construction Barrier Fencing around Environmentally Sensitive Areas in and adjacent to the Construction Area for the new path in the Radio Beach area
Conduct Protocol-Level Surveys Prior to Construction for California Clapper Rail and California Black Rail in the Adjacent Tidal Marsh to Determine Presence or Absence of this Species If Breeding Season Construction is proposed.

Description of Measure
Establish 700-foot construction buffer around Occupied, Suitable California Clapper Rail and Black Rail Habitat in the Emeryville Crescent, if Construction Occurs During the Rail Breeding Season (January 15 to September 1)
Install Fencing Around Tidal Marsh Habitat East of the Project
Manage the On-site Northern Foredune and Tidal Marsh Habitat as a buffer between Radio Beach and Off-site Tidal Marsh Habitat.
Close Radio Beach to Entry at Night.
Prohibit Dogs from Radio Beach Area.
Prohibit Installation of Lighting, Trees, or other Structures Potentially Suitable for Raptor Perching on the North Side of I-80 within Designated Park Areas.
Implement Pile Driving Noise Reduction Measures to Minimize Impacts on Special-Status Fish Species
Marine Mammal Impact Avoidance and Minimization Measures for Pile Driving
Marine Mammal Monitoring and Reporting for Pile Driving
Avoid Construction During the Migratory Bird Nesting Season (January 31 through September 15) or Conduct Preconstruction Surveys for Nesting Birds
Install a No Disturbance Buffer around Detected Active Nests

Compensatory Mitigation

The project proponent will implement the compensatory mitigation summarized in **Table S-4:**

Table S-4. Compensatory MItigation

Description of mitigation
Tidal Salt Marsh: On-site restoration of tidal marsh including minimum area of new marsh planting of 0.012 acres to provide compensation at 2:1 ratio for project permanent effects.
Seasonal Wetland: On-site restoration of tidal marsh including minimum area of new marsh planting of 0.02 acres to provide compensation at 2:1 ratio for project permanent effects.
Northern Foredunes: Project proposed restoration of northern foredunes habitat.
Eelgrass: If actual encroachment into eelgrass occurs, then make fair-share contribution to funding for eelgrass restoration.
Shallow Bay Fill: Purchase of mitigation credits at a minimum 1:1 ratio for loss of shallow bay (estimated 0.28 to 0.31 acres) from approved mitigation bank.
Shallow Bay Shading: Removal of existing piling/unused docks in San Francisco Bay at a minimum 1:1 ratio (estimates 0.29 acres) through funding of other ongoing projects.
California clapper rail, California black rail, salt marsh harvest mouse, Alameda song sparrow, saltmarsh common yellowthroat, northern harrier: Project proposed restoration and Compensatory mitigation for tidal salt marsh habitat.
California Least Tern: Compensatory mitigation for eelgrass and shallow bay habitat (described above).
Western snowy plover: Project proposed restoration for northern foredunes habitat.
Listed fish species (steelhead, chinook salmon, green sturgeon, longfin smelt): Compensatory mitigation for eelgrass and shallow bay habitat (described above).

Permit Requirements

The project proponent will obtain and implement the conditions of the required permits.

- U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS): Endangered Species Act (ESA) Section 7 Consultation and Incidental Take Statement
- U.S. Army Corps of Engineers (USACE) – Section 404 Individual Permit under the Clean Water Act
- California Department of Transportation – NPDES Statewide Stormwater Permit (Order No. 2012-0011-DWQ), Encroachment
- California State Water Resources Control Board – Construction General Permit (Order No. 2009-0009-DWQ, and amended by Order No. 2012-0006-DWQ)
- San Francisco Regional Water Quality Control Board – Clean Water Act Section 401 Water Quality Certification.
- California Department of Fish and Wildlife: California Endangered Species Act Section 2081 Incidental Take Permit.

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Acronyms and Abbreviations

ABAG	Association of Bay Area Governments
Arid West Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region
BA	biological assessment
BATA	Bay Area Toll Authority
Bay Bridge	San Francisco Oakland Bay Bridge
Bay Bridge Trail	Trail on the East Span of the Bay Bridge
BCDC	Bay Conservation and Development Commission
BMPs	best management practices
BO	biological opinion
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CNDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
Construction General Permit	Order No. 2009-0009-DWQ, and amended by Order No. 2012-0006-DWQ
Corps	U.S. Army Corps of Engineers
CTC	California Transportation Commission
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DDT	dichlorodiphenyltrichloroethane
DPS	Distinct Population Segment
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EFH	essential fish habitat
EO	Executive Order
ESA	Federal Endangered Species Act

FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FHWG	Fisheries Hydroacoustic Working Group
HAPC	Habitat Area of Particular Concern
I-80	Interstate 80
I-880	Interstate 880
ICF	ICF International
IERBYS	Interurban Electric Railway Bridge Yard Shop
ISAC	Invasive Species Advisory Committee
ITP	Incidental Take Permit
L_{peak}	Peak sound pressure level
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MBTA	Migratory Bird Treaty Act
MHTL	Mean High Tide Line
MOU	memorandum of understanding
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NICS	National Invasive Species Council
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	notice of intent
NPDES	National Pollutant Discharge Elimination System
NSIC	National Invasive Species Council
NWPs	nationwide permits
OHWM	ordinary high water mark
Order No. 2012-0011-DWQ	Caltrans National Pollutant Discharge Elimination System Statewide Stormwater Permit
Park	Gateway Park
Project	proposed project

RM	River Mile
RMS	Root mean square
RPW	relatively permanent water
RWQCB	Regional Water Quality Control Board
SEL	Sound exposure level
SFOBB	San Francisco-Oakland Bay Bridge
SFOBB Project	San Francisco-Oakland Bay Bridge East Span Seismic Safety Project
study area	64-acre biological study area
SFRWQCB	San Francisco Bay Area Regional Water Quality Control Board
SWANCC	Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TNW	tributaries of navigable waters
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WDRs	waste discharge requirements

Chapter 1. Introduction

1.1. Introduction

The proposed project (Project) is the creation of a new 45-acre park (Park) along the waterfront near the eastern end of the new east span of the San Francisco-Oakland Bay Bridge (SFOBB or Bay Bridge) in Oakland, California (**Figure 1**). Outside the park boundaries, the Project could also include installing landscaping and parking near Interstate 880 (I-880) (**Figure 2**). The idea for a new Park at this location was conceived in the 1990s during the planning for 1) replacement of the east span of the Bay Bridge, 2) reuse of the Oakland Army Base, and 3) demolition and reconstruction of I-880 (Cypress/Interstate 880 freeway project).

The Park would provide safe access to the new bicycle/pedestrian path on the new east span of the Bay Bridge (Bay Bridge Trail), as well as access to existing and planned segments of the regional San Francisco Bay Trail. The Park would provide access to the shoreline and would be a unique waterfront amenity. The Park would include active and passive recreation opportunities. It would include a venue for community events and art displays. In addition, it would showcase the natural, maritime, industrial and transportation history of the East Bay area.

The Project is proposed by the Gateway Park Working Group. The Gateway Park Working Group includes the following nine local, regional and state agencies: Bay Area Toll Authority (BATA), California Department of Transportation (Caltrans), San Francisco Bay Conservation and Development Commission (BCDC), California Transportation Commission (CTC), East Bay Regional Park District (EBRPD), City of Oakland, Port of Oakland, East Bay Municipal Utility District (EBMUD), and Association of Bay Area Governments (ABAG's) Bay Trail Project. At this time, it is envisioned the Park would be a regional park operated by the East Bay Regional Park District (EBRPD) or a Joint Powers Authority. BATA is the lead agency under the California Environmental Quality Act (CEQA).

1.2. Purpose and Need

The primary purpose of the Project is to provide a distinctive entryway park to the East Bay that connects to the new bicycle/pedestrian path on the new east span of the Bay Bridge. The Project purpose also is to provide safe multimodal access to the shoreline and to provide passive and active recreation opportunities. The Project purpose also includes providing interpretive features for natural resources and transportation history and a venue for

community events and art installations. It will be designed to meet mitigation commitments for a number of transportation projects including the new east span of the Bay Bridge.

The project is needed because there is a lack of multimodal transportation and shoreline access in West Oakland and the East Bay. The project is needed to fulfill long-standing planning commitments to build a park and improve safe access to the shore in the East Bay. The project is needed to create a safe landing for bicycles and pedestrians using the new East Span of the Bay Bridge. The project is needed because there is a lack of parks and recreation opportunities in West Oakland. Further, there is a lack of public venues for large events and public art displays in West Oakland and the East Bay.

1.3. Project Description

This section describes the Project that was developed to meet the identified purpose and need, while avoiding and minimizing environmental impacts.

The Park would be located in the city of Oakland, Alameda County, adjacent to I-880 and I-80 at the eastern touchdown of the Bay Bridge (**Figure 1**). The project area includes underutilized industrial land on the south side of I-80, extending from the San Francisco Bay shoreline on the west to the Caltrans maintenance facility near the Bay Bridge toll plaza on the east. The project area also includes the Radio Beach area on the north side of I-80 and land beneath and adjacent to I-880 and the I-880/I-80/I-580 interchange on the west to Maritime Street in West Oakland on the east (**Figure 2**).

The approximately 45-acre Park has been divided into the following four park areas: Bridge Yard, Key Point, Port Playground, and Radio Beach (**Figure 3**). The Park would be developed in the following three phases over 15 years, as funding becomes available, with anticipated buildout in 2030 (also refer to Section 1.3.6, *Project Phasing*).

- Phase 1 (Approximately 2 Years) – Bridge Yard
- Phase 2 (Approximately 2 Years) – Key Point
- Phase 3 (Approximately 3 Years) – Port Playground and Radio Beach

Following is a description of the primary features in each of the park areas, other park features, and project phasing. **Table 1-1** provides a summary of the Park areas and primary features.

Project Location

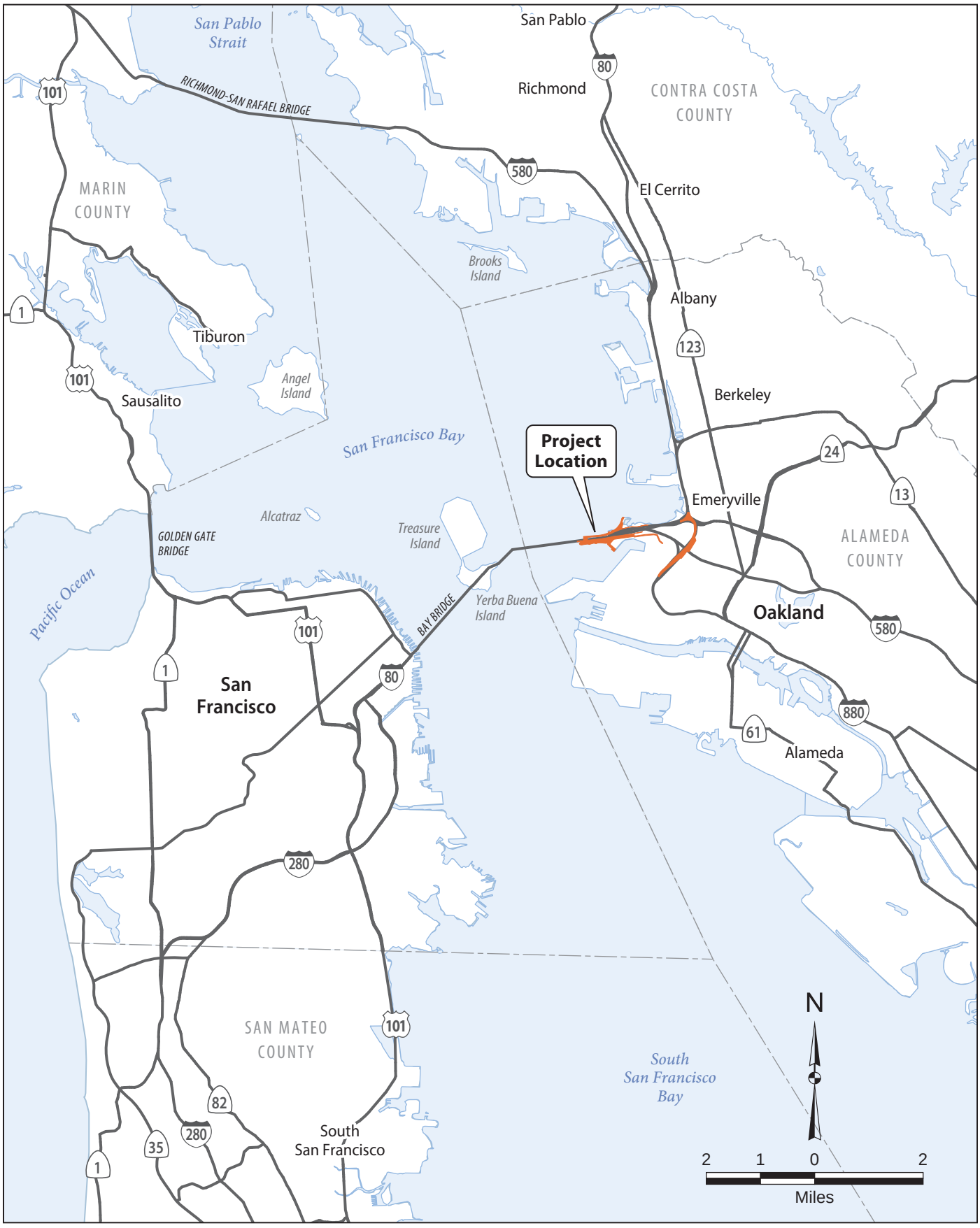


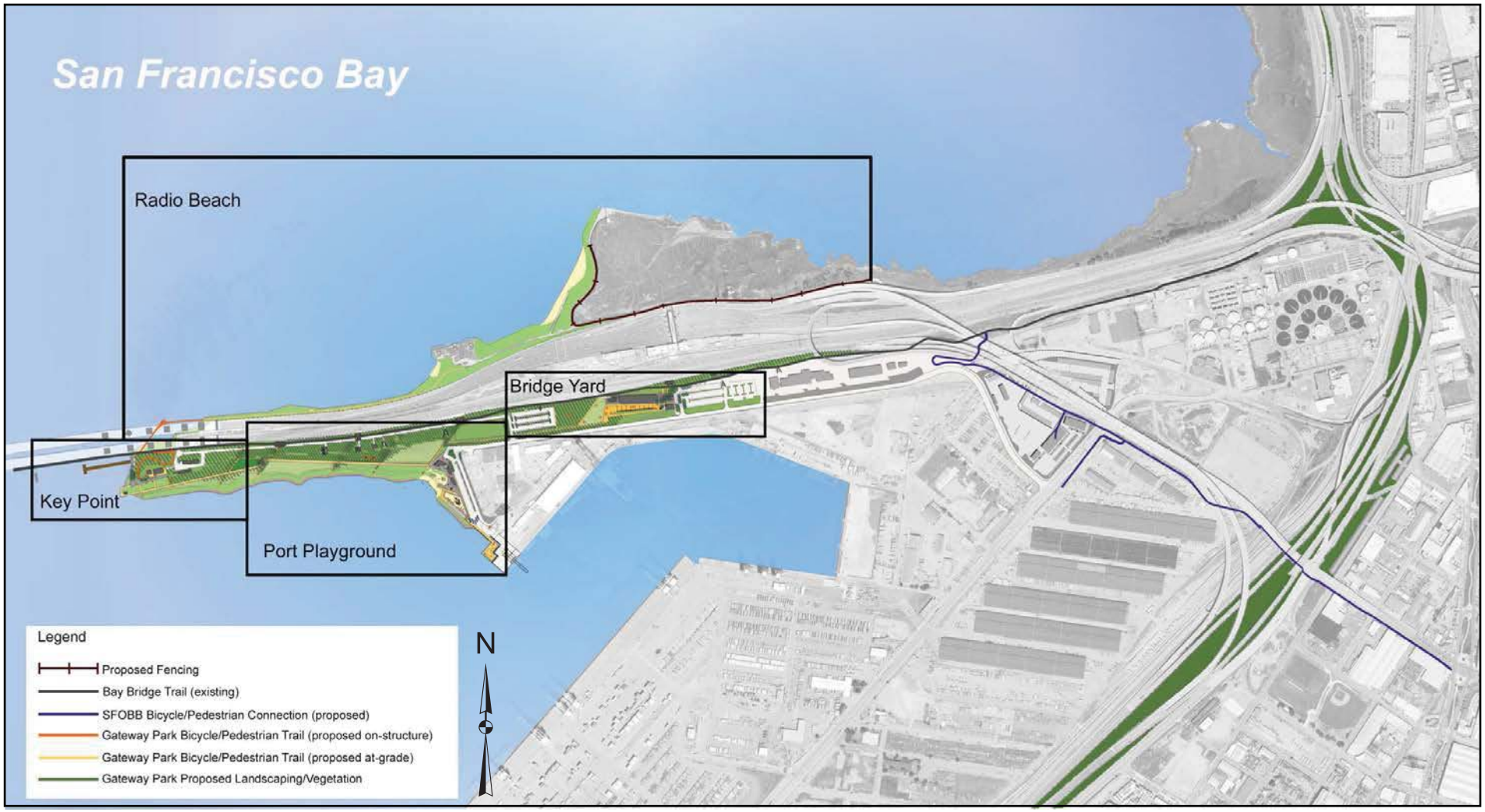
Figure 1

Project Area



Figure 2

Park Areas



Source: TYLIN, 2015

Figure 3

Table 1-1. Park Features

Park Area and Primary Features		Description	Approximate Size
1	**Bridge Yard**	A destination recreation and event center in the core park area south of I-80.	10 acres
A	Arrival Plaza	Plaza on east side of Bridge Yard Building. Could include vehicular drop-off area, bike racks, and plaza with trees, benches, and train rails in cobblestone or meadow.	50,100 sf
B	Historic Display Plaza	Plaza on west side of Bridge Yard Building. Display area for historic train from the Key System, picnic tables, and shade canopy.	12,880 sf
C	Outdoor Yard Event Space	Event space west and south of Bridge Yard Building. Small gatherings could include art exhibits and informal performances for approximately 200 people. Large events could include movies in the meadow for 500–1,000 people and concerts/conferences for 1,000–1,700 people.	281,400 sf
D	Bridge Yard Building[1] Improvements	Minor internal improvements and use (e.g., meetings and events) of the renovated Bridge Yard building.	24,300 sf
E	Indoor/Outdoor Auditorium	Embedded into the landscape, southeast of the Bridge Yard Building. Events or training space for 100–200 people.	7,370 sf
2	**Key Point**	Passive recreation area south of I-80 at the west end of the park near the Bay Bridge.	6 acres
A	Building Renovation	Renovate two historic structures for visitor services: Key Building (e.g., café and bookstore) (also called Key Pier Substation) and Bay Bridge Oakland Substation (e.g., artist studio, ranger station, conference room, restrooms) (also called Mole Substation).	Key Building 1,515 sf Bay Bridge Oakland Substation 4,000 sf
B	Path to Bay Bridge Trail	Path on structure (i.e., ramp) for bicyclists/pedestrians to connect the Key Point area to Bay Bridge Trail.	720 feet long and 18.5 feet wide
C	Pier	New pier extending into Bay, along old Bay Bridge alignment, requiring approximately five new pilings in the Bay.	300 feet long and 30 feet wide
3	**Port Playground**	Active and passive recreation area south of I-80 along the southern shoreline.	11 acres
A	Visitor Center	The 7,670-sf visitor center would include three separate structures connected by covered, open-air walkways: main visitor center (3,210 sf), lockers and restrooms (2,985 sf), kayak building (1,475 sf).	41,530 sf
B	Play Areas	Several play areas, picnic areas, and connecting pathways: Main playground west of visitor center (24,740 sf), climbing wall area (26,500 sf), skate park (19,070 sf), and climbing structures dispersed.	
C	Kayak Beach	Sandy beach area west of visitor center, kayak launch facilities, and cement ramp from visitor center to water.	31,240 sf beach area and ramp (200 feet long and 19 feet wide)
D	Boardwalk	Cement walkway (between the climbing wall area and skate park) with observation areas, benches, picnic areas.	10,990 sf
E	Meadow View Point	Natural grassy area providing elevated view (approx. 19 feet above existing ground level) overlooking Bay.	1.75 acres (76,860 sf)
F	Meadow and Bluff Walk	Large natural open space with pathways extending from Key Point to Kayak Beach and visitor center.	5 acres
G	Active View Feature	Active view features could include an elevated zip line, ropes course, observation tower or similar.	—

Park Area and Primary Features		Description	Approximate Size
4	**Radio Beach**	Passive recreation area north of I-80.	5 acres
A	Path to Radio Beach	Path on structure for bicyclists/pedestrians to access Radio Beach from the Key Point area.	4,000–4,200 feet long
B	Restoration	Planting and habitat enhancement in Radio Beach Area	4 acres
C	Fencing	Permanent fencing (6- to 8- feet high) to protect wildlife and environmentally sensitive existing tidal marsh area.	1,670 feet long

[1] The Bridge Yard Building, formerly called the Interurban Electric Railway Bridge Yard Shop (IERBYS) and the Sawtooth Building, is being rehabilitated by Caltrans as part of a separate project. Caltrans is removing their old equipment and seismically retrofitting for human use. Rehabilitation is scheduled to be complete in 2015.

1.3.1. Bridge Yard

The Bridge Yard would be a destination recreation and event center in the core park area. Park features in this area include an arrival plaza, historic display plaza, outdoor yard event space, reuse of the renovated historic Bridge Yard building, and possibly an indoor/outdoor auditorium. Although park hours would be dawn to dusk, there could be special events in the evening at the Bridge Yard. The Bridge Yard area, which also includes access to the Bay Bridge Trail, landscaping, and public parking (see Section 1.3.5, *Other Features*), is approximately 10 acres.

1.3.2. Key Point

Key Point would be a passive recreation area at the west end of the park near the Bay Bridge. Park features in this area include reuse of two renovated buildings for visitor services, a path on structure leading to the Bay Bridge Trail, and a pier along the old Bay Bridge alignment. The new pier would be 300 feet long and 30 feet wide, and would require approximately five new pilings in the Bay. The water depth under the proposed pier at the end of the pier would be between 3.9 feet at mean low tide and 8.75 feet at mean high tide.

Other planned features in this area include cobblestone paving in front of the buildings, grass area behind the buildings, and wood decking with benches and landscaped planters on the water's edge. The Key Point area also includes landscaping, shoreline protection features, and new bio-retention basins for stormwater management (described in Section 1.3.5, *Other Features*). Key Point is approximately 6 acres.

1.3.3. Port Playground

Port Playground would be an active and passive recreation area along the southern shoreline. Park features in this area include a visitor center, several play areas, a sandy beach for launching kayaks, a boardwalk, a meadow and bluff walk, a meadow viewpoint, and possibly view ride(s). The beach area would be approximately 31,240 sf. There would be an ADA-compliant cement ramp (200 feet long, 19 feet wide) extending from the south side of the Visitor Center to the water's edge. This path and any other would end above the mean high tide line.

The Port Playground area also includes landscaping, shoreline protection features, and an existing bio-retention basin (described in Section 1.3.5, *Other Features*). Port Playground is approximately 11 acres.

1.3.4. Radio Beach

Radio Beach, which is an existing area on the north side of I-80, would be for limited, passive recreation. The Project would include installation of a new access path from the Key Point area, restoration, and installation of fencing to protect environmentally sensitive areas. This area includes an existing informal gravel parking area, which would be improved with oyster shell mulch or comparable material (described in Section 1.3.5, *Other Features*). The Radio Beach area is approximately 5 acres.

1.3.4.1. PATH TO RADIO BEACH

The path to Radio Beach would be a new structure for pedestrians and bicyclists to access the existing Radio Beach area. The approximately 4,000- to 4,200-foot-long path would extend from Key Point, under the Bay Bridge, to the easterly end of Radio Beach. The path is divided into the following five segments or areas: 1) boardwalk over water, 2) concrete over rip-rap, 3) boardwalk at grade, 4) boardwalk adjacent to gravel road, and 5) boardwalk to Radio Beach (**Figure 4**). Segments 1 and 2 would be supported by 12-inch wood posts every 10 feet, and Segments 3 to 5 would be supported by 6-inch-diameter wood posts every 10 feet.

Segment 1 has two variances or options under consideration. The path would begin either on land near the base of the new pier (approximately 500 feet long), as shown in **Figure 4**, or from the new pier (approximately 700 feet long).

The path would have approximately three ecological interpretation decks or landings with benches and ecological interpretation signage. The elevated path would include 4- to 6-foot-high fencing (chain link or decorative metal railing), which is intended to keep visitors on the path.

1.3.4.2. RESTORATION

Restoration would include planting and habitat enhancement of approximately 4 acres in the Radio Beach area, west of the fencing shown on **Figure 3**. The design goal would be to extend the Emeryville Crescent Marsh vegetation and the Upland Coast Scrub vegetation established adjacent to the Marsh into the disturbed areas of Radio Beach. This would require grading approximately 1 acre and removing trash, debris and invasive plant species in both upland and lowland areas.

Non-native invasive plants to be removed would include Bermuda grass (*Cynodon* sp.), invasive iceplant (*Mesembryanthum* sp.), fennel (*Foeniculum vulgare*), non-native mustard (*Brassica* sp.), French Broom (*Genista* sp.), Pampas Grass (*Cortaderia* sp.), Pepperweed (*Lepidium latifolium*), and non-native grasses.

Marsh restoration planting would include pickleweed (*Salicornica*) and Pacific cordgrass (*Spartina foliosa*). Lowland restoration will include Saltmarsh Baccharis (*Baccharis douglasii*), Saltgrass (*Distichilis spicata*), Juncus (*Juncus balticus*), and Carex (*Carex praegracilis*). Upland coastal scrub plants would include California sagebrush (*Artemesia californica*), mugwort (*Artemisia douglasiana*), Coyote bush (*Baccharis pilularis*), bush monkey-flower (*Mimulus aurantiacus*), and native California blackberry (*Rubus ursinus*). The final plant list would be determined by a qualified restoration ecologist and botanist.

All planting would be monitored for establishment and maintained for a duration to be determined by the restoration ecologist. Establishment of the plantings would be measured according to the following baseline criteria:

- Pampas grass, fennel, broom, and ice plant must be eradicated from replanted areas for the duration of monitoring
- Upland replanted areas must achieve 60% cover of native plant species by the end of the monitoring period.
- Asian mustard, pepperweed, velvet grass and Bermuda grass must cumulatively not exceed 5% of cover for the duration of the monitoring
- Unsuccessful areas with little or no cover must be identified and adaptive measures to promote vegetation success implemented

There would be interpretive signage along the marsh habitat area and restoration area edge to discourage encroachment onto sensitive habitats.

1.3.4.3. FENCING

The Project would include installation of a permanent fence to protect wildlife and the environmentally sensitive existing tidal marsh area (**Figure 3**). The fence would be approximately 1,670 feet long and likely 6–8 feet high. The fence type has not been determined but could be chain link, decorative metal, or some other material.

Path to Radio Beach Segments

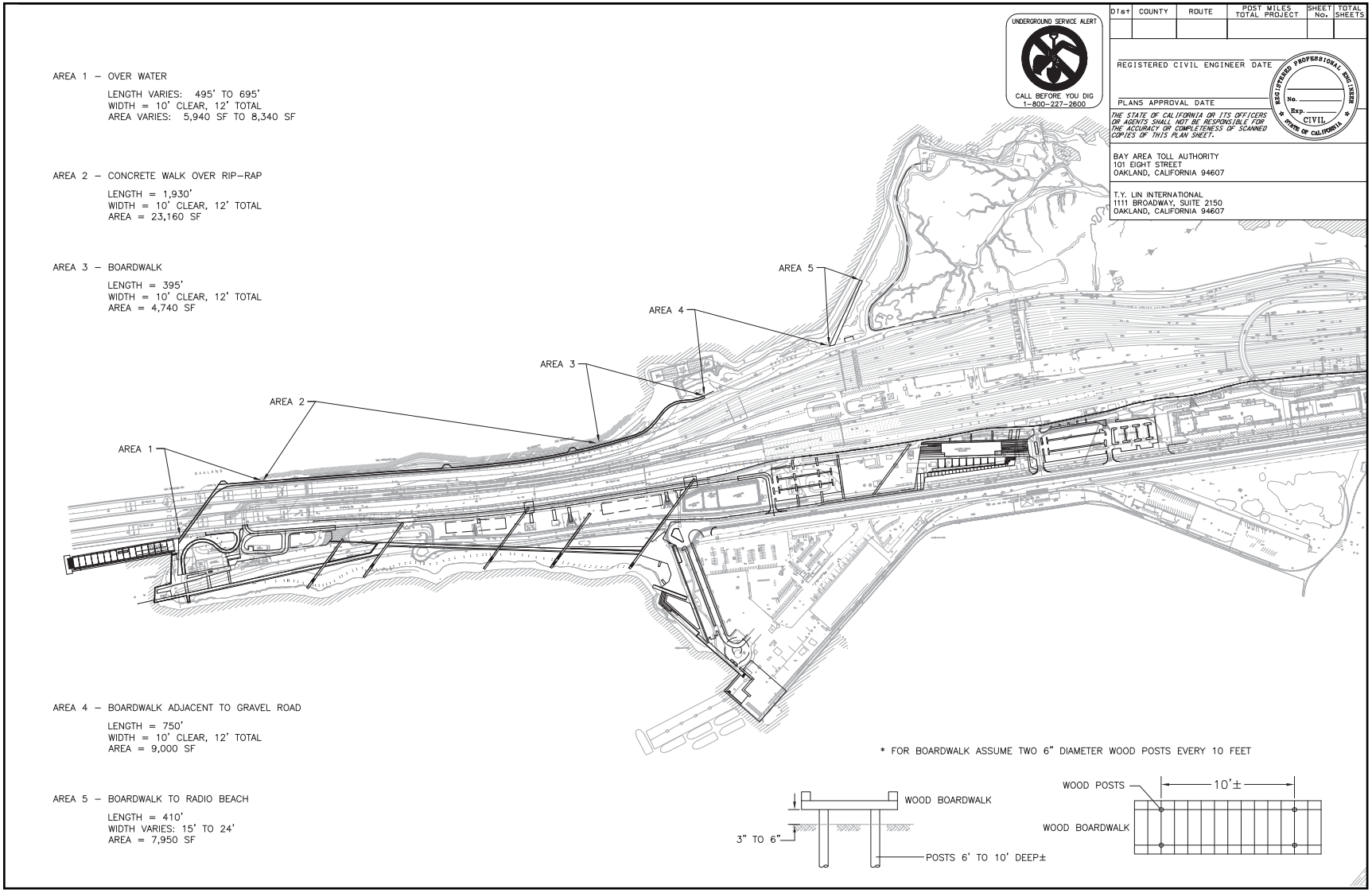


Figure 4

1.3.5. Other Features

1.3.5.1. WINDBREAK/TREE BUFFER

The Park would include an approximately 13-acre Windbreak/Tree Buffer that would extend along the south side of I-80 in the Port Playground and Key Point areas (**Figure 3**). The Windbreak/Tree Buffer would include approximately 1,500 trees on 14 acres along the south side of I-80. The purpose is to block and diffuse vehicular air emissions from I-80 and provide a visual identity for the Park, a visual buffer between the Park and I-80, and shade and structure for circulation within the Park. The trees would be planted to provide view lines to the water and Port of Oakland.

The trees would be primarily evergreen and would achieve a maximum height of 45–50 feet, which is below the bottom edges of existing billboard signs. Qualified botanists would determine evergreen tree species based on the ability to thrive in marine conditions, tolerate occasional saltwater intrusion and strong winds, and lose and replace leaves. Existing vegetation that has survived and thrived on the site includes including Monterey cypress, Torrey pines, and eucalyptus as well as other species.

1.3.5.2. LANDSCAPING

Landscaping would be planted throughout the Park areas south of I-80. Additionally, landscaping could be planted under the freeways east of the Park (I-880 and the I-880/80/580 maze) to improve aesthetics and air quality for park visitors and West Oakland residents (**Figure 3**). A general description of the planned landscaping is provided in **Table 1-2**.

Table 1-2. General Description of Planned Landscaping

Park Area	Plantings
Bridge Yard	Large native Oak trees (approximately 35), native and endemic meadow grasses, vegetative filtration plantings for storm water treatment, and extension of the windbreak planting (approximately 375 trees).
Key Point	Large scale vegetative filtration plantings for storm water treatment in an upland marsh, as well as the extension of the windbreak planting (approximately 150 trees).
Port Playground East (active recreation area)	Vegetative filtration plantings for storm water treatment, upland plantings at the playground, and possibly container planting.
Port Playground West (meadows and bluff walk)	Native and endemic meadow grasses, coast sage scrub, upland bluff and low land bluff plantings, vegetative filtration plantings for storm water treatment, as well as the extension of the windbreak planting (approximately 950 trees).
Under freeways (I-880 and I-880/80/580 maze)	Native and endemic meadow grasses, coast sage scrub, upland bluff and low land bluff plantings, vegetative filtration plantings for storm water treatment.

1.3.5.3. LIGHTING

Park hours would be dawn to dusk, but a minimal amount of lighting would be provided for security at dusk and for special events that could be held at the Bridge Yard. Lighting would be a combination of low-level foot lighting along paths, exterior lighting on buildings directed downward, and 20-foot steel light standards in Bridge Yard area and in parking lots. There would be no lighting in the Radio Beach area.

1.3.5.4. PARKING

Public parking would be provided with 255–555 parking spaces in different areas of the park. Additionally, up to 200 additional parking spaces could be provided by expanding the 100-space park and ride lot being proposed as part of the separate SFOBB Regional Bicycle/Pedestrian Connection project. Refer to **Table 1-3**.

It is noted that the proposed parking plan is subject to change and refinement over time, given the project's horizon year of 2030 and changing conditions and availability of potential off-site parking locations. The Draft EIR analysis will analyze a reasonable range of anticipated parking locations that would serve the project.

Table 1-3. Proposed Parking

Parking Area	Location	Number of Spaces	Other Features
A	East of Bridge Yard building	0–200	Possibly trees/landscaping. A parking lot is planned at this location as part of a separate project.[1]
B	West of Bridge Yard building	0-200	Possibly trees/landscaping.
C	Windbreak	50–150	Parking dispersed in three areas of the Windbreak.
D	Radio Beach	5	Parking located where there is currently informal parking (e.g., unpaved, oyster shells).
Subtotal		255–555	
E	Wood Street	0–200	Up to 200 additional spaces could be added to the planned 100-space parking lot, proposed as part of a separate project.[2]
Total		255–755	

[1] Caltrans is planning to construct a parking lot on the west side of Wood Street, north of West Grand Avenue, as part of a separate project.

[2] Caltrans and Bay Area Toll Authority are proposing the San Francisco-Oakland Bay Bridge Regional Bicycle/Pedestrian Connection Project (Path) in West Oakland. It includes an approximately 6,030-foot-long bicycle/pedestrian path extending between Mandela Parkway on the east and the new Bay Bridge Trail leading to the new east span of the Bay Bridge on the west. This project includes construction of a 100-space parking lot at Wood street and bike lanes on surface streets extending to the parking lot.

1.3.5.5. WAY-FINDING ELEMENTS

Way-finding elements include interpretive and directional signage along pathways throughout the Park. Additionally, way-finding elements could include old Bay Bridge artifacts and could be located along Burma Road.

1.3.5.6. SHORELINE PROTECTION

Shoreline protection features would be provided along most southern shoreline areas (south of I-80) to minimize erosion. Shoreline protection features would be a combination of gently graded slope, vegetation plantings, riprap, retaining walls, and revetment walls above and below the water line, as described in **Table 1-4**. Shoreline protection features would be completed as the associated Park areas are developed based on project phasing described in Section 1.3.6, *Project Phasing*. **Appendix E** includes additional detail on the proposed shoreline protection.

Table 1-4. Proposed Shoreline Protection

Location	Protection Measures	Area and Fill Below Mean High Tide Line
South Shoreline (general)	4:1 slope with small beach area, plantings and revetment[1] wall below water line.	No fill below Mean High Tide Line
South Shoreline (Kayak Beach)	4:1 slope with larger beach area and revetment wall below water line.	No fill below Mean High Tide Line
South Shoreline (Climbing Wall area)	4:1 slope with transition from stone/concrete terrace wall and revetment wall above water line to rip rap embankment below water line.	No fill below Mean High Tide Line
South Shoreline (Key Point)	Concrete sea wall and retaining wall at EBMUD outfall.	Area: 0.23 acres Fill: 4,100 cubic yards
North Shoreline (Radio Beach)	None	None

[1] Revetments are sloping structures placed on banks to absorb the energy of incoming water, and are used as a solution for coastal erosion defense in areas where crashing waves may otherwise deplete the coastline.

1.3.5.7. SEA LEVEL RISE ADAPTATION

The project area is relatively flat, elevated approximately 8–12 feet above the mean lower low water, and surrounded by the Bay on the north, west and south sides. Because of anticipated sea level rise,[1] the entire south side of the Park (south of I-80) would be elevated by 2–10 feet by adding 213,500 cubic yards of fill. The Park areas would be elevated as they are developed based on project phasing, as described in Section 1.3.6, *Project Phasing*.

[1] CH2M Hill. Technical Memorandum: Sea Level Rise Adaptation – Revision 3. February 17, 2014.

1.3.5.8. RETENTION BASINS/STORMWATER DRAINAGE

The existing retention basin, located south of I-80 and west of the Bridge Yard, would be retained with no changes. It was constructed to receive stormwater runoff from the Bay Bridge toll plaza area. Park features would be designed so that there would be no impact on the existing basin.

Three additional retention basins (biofiltration swales) would be constructed at the west end in the Key Point area to treat stormwater runoff from the Park project. The biofiltration swales would be designed to include a layer of imported biofiltration soil and, if feasible, an underdrain system. The feasibility of underdrain systems would be assessed based on the existing and proposed drainage facilities and site constraints. Specifically, groundwater levels would need to be assessed for underdrain systems. Soils in the facility would need to meet biotreatment soil specifications approved by the Regional Water Quality Control Board. A minimum percolation rate of 5 inches per hour and a maximum percolation rate of 10 inches/hour are required. Planting soil layer would be at least 18 inches deep. Shrubs and small trees would be placed to anchor the bioretention area cover, based on guidance in the Alameda County C.3 Storm Technical Guidance dated May 2013. A side slope of 4:1 or flatter would be used. The biofiltration swales would be integrated as part of the Park landscaping and would not be fenced.

Stormwater runoff from most of the new impervious path areas would sheet flow to nearby vegetated areas. Overall, the Project would discharge into unlined channels and ditches that would be tied into existing drainage systems, which are anticipated to have sufficient capacity to accommodate existing stormwater runoff without requiring significant upgrade or modification. Flow would eventually discharge to the Bay. The objective of the Park drainage design would be to limit the flow and velocities such that existing conditions and drainage patterns are maintained.

A Stormwater Pollution Prevention Plan (SWPPP) would be implemented as part of the required National Pollutant Discharge Elimination System (NPDES) and a General Construction Activity Storm Water Permit. This would minimize the potential for sediments or contaminants to be discharged into San Francisco Bay.

1.3.5.9. HAZARDOUS WASTE CLEANUP

The project area includes lands previously used by or adjacent to industrial activities associated with the Port of Oakland, the Oakland Army Base, and Caltrans Maintenance Facility. There is ongoing hazardous materials remediation onshore. This Project assumes that all onshore hazardous materials would be remediated to appropriate levels for proposed uses prior to or as part of park construction, and that it would be completed prior to park operation.

1.3.5.10. DOGS/PETS

Dogs and pets would be allowed in the park on the south side but would be prohibited on the north side (Radio Beach).

1.3.6. Project Phasing

The Park would be developed in three phases over 15 years, as funding becomes available, with anticipated buildout in 2030. The three planned phases are shown in **Table 1-5**.

Table 1-5. Planned Park Development Phases

Phase 1 (Approximately 2 Years)	
Bridge Yard	
A	Arrival Plaza
B	Historic Display
C	Outdoor Yard Event Space
D	Bridge Yard Building Improvements
E	Indoor/Outdoor Auditorium
Other	
	Parking Area A (east of Bridge Yard building)[a]
	Parking Area B (west of Bridge Yard building)
Phase 2 (Approximately 2 Years)	
Key Point	
A	Building Renovation
B	Path on Structure to Bay Bridge Trail
C	Pier
Other	
	Windbreak/Tree Buffer
	Parking Area C (in Windbreak)
	Shoreline protection – West Shoreline
Phase 3 (Approximately 3 Years)	
Port Playground	
A	Visitor Center
B	Playgrounds
C	Kayak Beach
D	Boardwalk
E	Meadow View Point
F	Meadow and Bluff Walk
G	Active View Features
Radio Beach	
A	Path to Radio Beach
B	Restoration
C	Fencing
Other	
	Parking Area D (Radio Beach informal parking area)
	Parking Area E (Wood Street parking lot expansion)
	Shoreline protection – South Shoreline
	Landscaping beneath the freeways

[a] A parking lot at this location may be constructed by Caltrans as a separate project serving Caltrans facilities or as part of the Park project.

1.3.7. Operations and Maintenance

It is estimated that with all Park areas developed, there would be approximately 15–30 employees based on the following assumptions. There would be 4–10 employees at the visitor center, serving uses in the Key Point area, 6–13 employees at the visitor center serving uses in the Port Playground area, and 5–7 employees for other operations and maintenance needs elsewhere in the Park.

It is estimated that with all Park areas developed, there could be 500,000 visitors annually (1,370 daily average) based on moderate use and as many as 2,000,000 annually (5,479 daily average) based on heavy use.

1.4. Construction Phasing and Methodology

This section describes the anticipated construction associated with Project development.

1.4.1. Construction Duration and Phasing

The Project would be developed in three phases over 15 years with anticipated buildout in 2030, as described above.

1.4.2. Grading

The park area on the south side of I-80 would be elevated 2–10 feet for protection from anticipated future sea level rise. To accommodate proposed development, grading would occur in some of the park areas to develop park features. The estimate cut and fill required for Project development is shown in **Table 1-6**. Fill material would be supplied from cut material onsite as well as imported fill.

Table 1-6. Estimated Cut and Fill Material Required for Park Development

Phase	Cut	Fill
1	11,000 cy	30,000 cy
2	41,000 cy	35,000 cy
3	15,000 cy	101,000 cy

The amount of fill below the mean high tide line and the nature of the material for the proposed shoreline protection are presented in **Table 1-4**.

1.4.3. Construction Hours, Vehicle Access, and Staging

The majority of construction activities would be limited to between the hours of 8 a.m. and 6 p.m., Monday through Saturday. There would be no construction on Sundays or national holidays. The path to the Bay Bridge Trail in the Key Point area may require a limited amount of nighttime work. During all three development phases, construction vehicles would use the following roadways primarily: Burma Road, Maritime Street, West Grand Avenue, and I-80 and I-880. Additionally, if the Wood Street parking lot is expanded and landscaping is installed under the freeways during Phase 3, vehicles would also use Frontage Road, Wood Street, Campbell Street, Willow Street, Peralta Street, and 20th Street.

All construction staging areas would be on disturbed areas within the Project area, at least 25 feet from the water's edge with protective hale bales in place.

1.4.4. Pile Driving

Project construction would require pile driving, both on land and in water. **Table 1-7** presents the number of piles to be driven in each park area, with the relevant park feature. The maximum number of piles that would be driven on any day would not exceed twenty.

Table 1-7. Pile Driving

Park Area and Primary Feature Requiring Pile Driving		Estimated Number of Piles	
		On Land	In Water
1	Bridge Yard	None	
2	Key Point		
C	Pier	0	5
3	Port Playground	None	
4	Radio Beach		
A	Path to Radio Beach	0 or 8 to 10[1]	8

Note: Refer to Table 1-1 for all park features and Table 1-5 for park development phasing.

[1] There would be no piles needed if the path is incorporated into shoreline protection with no columns/piers (riprap); otherwise 8 to 10 piles would be needed.

Chapter 2. Study Methods

This chapter describes the studies and surveys conducted. The applicable regulatory requirements are included in Chapter 5, *Results: Permits and Technical Studies for Special Laws or Conditions*.

2.1. Studies Required

Biological resources and potential impacts on these resources from the proposed project were identified through a literature and database review, correspondence with USFWS, and reconnaissance field surveys. It was determined that the following studies would be required to document natural resources in the biological study area (defined in Chapter 3, *Results: Environmental Setting*).

- A botanical field survey to identify plant communities, native trees, suitable habitat for sensitive plant species, and invasive plants
- A general habitat evaluation to determine whether suitable habitat exists for sensitive wildlife species
- A general habitat evaluation to determine whether suitable habitat exists for sensitive fish species, including essential fish habitat (EFH)
- A delineation of waters of the United States

To prepare for the field surveys and to evaluate whether sensitive species or other sensitive biological resources (e.g., wetlands) could occur in the study area and vicinity, biologists reviewed existing resource information including the following.

- The California Native Plant Society's (CNPS's) Inventory of Rare and Endangered Plants of California (California Native Plant Society 2014) (**Appendix A**)
- A list of sensitive species from the California Natural Diversity Database (CNDDB) records search for the U.S. Geological Survey (USGS) 7.5-minute Oakland West quadrangle (CDFW 2014) (**Appendix B**)
- The results of CNNDB search for sensitive plants and wildlife within a 5-mile search area (**Figures 5 and 6**, respectively)
- A list of threatened and endangered species provided by the USFWS for the USGS 7.5-minute Oakland West quadrangle (USFWS 2014) (**Appendix C**)

This information was used to develop lists of sensitive species and vegetation communities of special concern that could be present in the project vicinity, and to determine the potential for wetlands to occur in the study area. Species from the lists were considered if they were known to occur within an approximately 2.5-mile radius of the study area.

2.2. Personnel and Survey Dates

Biological surveys in the study area were conducted June 6 and 7, 2013, and May 8, 2014, by ICF International (ICF) biologists. Methods for documenting wetland, botanical, and wildlife resources are described below.

2.2.1. Delineation Waters of the U.S. and Other Waters

ICF wetland ecologist/botanist Torrey Edell and biologist Jillian Burns conducted a survey on June 6 and 7, 2013, to map wetlands, drainages, or other water features present in the study area that could be considered waters of the United States by the U.S. Army Corps of Engineers. Ms. Edell and Ms. Burns delineated the study area using the routine on-site method outlined in the U.S. Army Corps of Engineers *Wetlands Delineation Manual* (Environmental Laboratory 1987) and, where applicable, criteria specified in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement) (U.S. Army Corps of Engineers 2008). The Preliminary Delineation of Waters of the U.S. for the Gateway Park Project (ICF 2014) is in **Appendix D**. The results of this delineation are presented in Chapter 3, and potential impacts are presented in Chapter 4.

2.2.2. Botanical Survey

Ms. Edell conducted a botanical survey on May 8, 2014, by walking meandering transects throughout the accessible portions of the study area and identified all plant species encountered. The survey was conducted during the appropriate identification periods for sensitive plants identified as having potential habitat in the study area. Vegetation communities in the study area were also identified and mapped during the botanical and delineation field surveys. Results of these surveys are presented in Chapters 3 and 4.

2.2.3. Wildlife Survey

A reconnaissance-level survey of the project site and immediately adjacent areas was conducted by ICF biologist Theresa Engle on June 6, 2013. The survey was conducted on-foot and with the visual aid of binoculars to ensure thorough search coverage of the area. During the survey, habitats within the project site were noted as well as wildlife species observed. Results of the surveys are presented in Chapters 3 and 4.

CNDDB Plant Occurrences within 2.5 Miles



Figure 5

CNDDB Wildlife Occurrences within 2.5 Miles



Figure 6

2.2.4. Fisheries Survey

No field surveys were conducted for fisheries resources. All fish-related information was taken from existing documents.

2.3. Agency Coordination and Professional Contacts

During preparation of this document, ICF coordinated with several agencies as discussed below.

2.3.1. Federal Agencies

On January 14, 2014, Theresa Engle (ICF International) obtained a list of federally listed wildlife species from the Sacramento Field Office website (USFWS 2014) (**Appendix C**).

On July 10, 2013, the U.S. Army Corps of Engineers held an Interagency Meeting to discuss this project, and federal agency attendees included a representative from the Environmental Protection Agency.

2.3.2. State Agencies and Local Agencies

On July 10, 2013, the U.S. Army Corps of Engineers held an Interagency Meeting to discuss this project, and there were representatives from the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) and the San Francisco Bay Conservation and Development Commission (BCDC). Additional meetings with BCDC were held on August 26 and October 7, 2013, and on February 28 and April 10, 2014.

2.4. Limitations That May Influence Results

At the time of the delineation fieldwork, indicators of hydrophytic vegetation, hydric soils, wetland hydrology, and the ordinary high water line were evident and identifiable. Therefore, there were no limitations with regard to the survey for wetlands and other waters in the study area. There were no limitations that would affect the results of the reconnaissance level terrestrial biological survey of the project area. No marine surveys were conducted.

Chapter 3. Results: Environmental Setting

3.1. Description of the Existing Biological and Physical Conditions

3.1.1. Study Area

The Park includes approximately 45 acres along the waterfront near the touchdown of the new East Span of the Bay Bridge and approximately 19 acres of marine habitats in the Central San Francisco Bay. For the purposes of this NES, biological conditions in the Park have been divided into three categories: Terrestrial Environments, Shoreline Environments, and Marine Environments. Outside the park boundaries, the proposed project could also include installing native landscaping and parking near the I-880 freeway (**Figures 1 and 2**).

The biological study area includes the 45-acre area where project-related ground-disturbing construction, staging, or access activities would occur as well as the 19-acre open water area along the shoreline (**Figure 2**). The approximately 45-acre Park has been divided into the following four park areas: Bridge Yard, Key Point, Port Playground, and Radio Beach (**Figure 3**).

Land uses adjacent to the study area are predominately industrial and commercial.

3.1.2. Physical Conditions

3.1.2.1. TERRESTRIAL ENVIRONMENTS

The project is located in the Coast Ranges geologic/geomorphic province of central and northern California. The Coast Range Province is bordered to the north by the Klamath Mountains, to the south by the Traverse Ranges Province, to the west by the Pacific Ocean, and to the east by the Great Valley Province. The Coast Ranges have a general northwest orientation and are characterized by north-northwest trending folds and faults. The province consists of sedimentary, metamorphic, volcanic, and igneous rocks ranging in age from the Jurassic/Cretaceous age (100 to 200 million years ago) to the present.

The San Francisco Bay region is located within a northwesterly oriented geomorphic depression called the San Francisco Bay-Santa Clara Valley Depression. This depression and its surrounding mountains have relatively recent tectonic origin. Formation began about a million years ago (within the Quaternary age). The terrestrial environment in the Park consists of developed Bay fill under the Baylands Ecosystem Habitat Goals classification system (San Francisco Bay Area Wetlands Ecosystem Goals Project 1999).

3.1.2.2. SHORELINE ENVIRONMENT

The sea level has fluctuated significantly several times prior to and during the Holocene times, and sediments known as Bay mud have been and are currently being deposited under estuarine conditions. The Bay mud consists of unconsolidated to moderately consolidated, saturated, organic-rich, silty marine clays. The Park site sits on a man-made spit that extends out into the San Francisco Bay. The site is generally flat, rising approximately 1.5 to 3 meters (5 to 10 feet) above sea level. The area is a formal tidal flat that was filled prior to the construction of the existing SFOBB in the 1930's. The source of the fill is not known, but it was likely a combination of dredged soil and imported fill, including some rubble and other debris. Due to the fill, settlement of the underlying Young Bay Mud has likely occurred; creating mud that is stronger than its nearby marine counterpart (SFOBB FEIS 2001).

The shoreline environment includes tidal salt marsh, developed Bay fill, and northern fore dunes, as categorized under the Baylands Ecosystem Habitat Goals classification system (San Francisco Bay Area Wetlands Ecosystem Goals Project 1999).

3.1.2.3. MARINE ENVIRONMENT

The Franciscan Formation in this area is deep (an elevation of -135 to -150 meters [-440 to -500 feet]) and slopes gently to the east/southeast. A sequence of Holocene- and Pleistocene-age marine and alluvial sediments overlie the bedrock. The subsurface soils vary and consist of generally less than 3 meters (10 feet) of loose, sandy fill that is underlain by a very soft, saturated layer of Bay mud that extends down to approximately 12 meters (40 feet). In other areas, the soil is composed of coarser grain sediments that include various amounts of gravel. The primary material in the underlying Merritt-Posey-San Antonio Formation at the touchdown area of the new East Span of the Bay Bridge is a layer of dense sand of approximately 4.5 to 6.1 meters (15 to 20 feet) thick. A north-south trending paleochannel exists under the touchdown area of the new East Span of the Bay Bridge. This paleochannel does not appear to contain alluvial sands. (SFOBB FEIS 2001). The Marine environments in the project area would be categorized as shallow bay/channel (openwater), and deep bay/channel (openwater) under the Baylands Ecosystem Habitat Goals classification system.

3.1.3. Biological Conditions in the Biological Study Area

The biological conditions identified in the study area are based on the field surveys, habitat evaluation, and wetland delineation conducted (refer to Chapter 2, *Study Methods*).

The project area supports developed areas lacking any natural habitat, common vegetation communities (ruderal vegetation, discussed below) and sensitive natural communities (northern foredunes, sandy beach, tidal salt marsh, seasonal wetland, shallow bay, deep bay and potentially

eelgrass beds) discussed in Section 3.2. Locations, dominant plant species, and typical wildlife species found in natural communities and developed areas within the study area are described below.

The majority of the project area consists of areas that have been heavily disturbed and contain ruderal vegetation, characterized by herbaceous, non-woody species. Ruderal areas do not provide suitable habitat for special status or listed species. Species expected to occur within ruderal areas include skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and western fence lizard (*Sceloporus occidentalis*). Approximately 14.2 acres of ruderal vegetation occurs in the project area and the former army base property and at scattered sites along the north side of the existing roadway (**Table 3-1**).

Table 3-1. Summary of Habitat Types Present in the Study Area

Community Type	Total Study Area (acres)
Terrestrial Communities	
Developed Areas	25.6
Ruderal vegetation	14.2
Northern foredunes*	1.1
Sandy beach*	1.9
Tidal salt marsh*	2.2
Seasonal wetland*	0.01
Subtotal	***45.0***
Marine Communities	
Shallow Bay*	6.5
Deep Bay*	12.6
Eelgrass beds*	TBD
Subtotal	***19.1***
Total	**64.1**

*****Natural Communities of Special concern, discussed in Section 3.2.

Invasive plant species include species designated as federal noxious weeds by the U.S. Department of Agriculture (USDA), species listed by the California Department of Food and Agriculture (CDFA), and other invasive plants designated by the California Invasive Plant Council (Cal-IPC). Roads, highways, and related construction projects are some of the principal dispersal pathways for invasive plant species. The introduction and spread of invasive plants adversely affect natural plant communities by displacing native plant species that provide shelter and forage for wildlife species.

As a federal agency, FHWA requires use of the National Invasive Species Council's (NSICs) invasive species databases (NSIC 2008). The NSIC databases list includes both the CDFA noxious weed list (California Department of Food and Agriculture 2007) and the Cal-IPC Invasive Plant Inventory list (Cal-IPC 2006). Accordingly, the CDFA and Cal-IPC lists were used for the analysis of invasive species in the study area.

Table 3-2 identifies the invasive plant species located in the study area. The infestation of the study area by these species occurs primarily in the ruderal vegetation on the south side of the Bay Bridge in areas that have been highly disturbed.

3.2. Habitats and Natural Communities of Special Concern

Natural communities of special concern are habitats considered sensitive because of their high species diversity, high productivity, unusual nature, limited distribution, or declining status by California Department of Fish and Wildlife (CDFW).[2] Local, state, and federal agencies consider these habitats important, and compensation for loss of sensitive communities is generally required by agencies. The CNDDB contains a current list of rare natural communities throughout the state. USFWS considers certain habitats, such as wetlands and riparian communities, important to wildlife; and USACE and EPA consider wetland habitats important for water quality and wildlife. The habitats in the study area that meet criteria for natural communities of special concern are: tidal salt marsh; seasonal wetlands; shallow bay and deep bay/channel, northern foredunes and sandy beach (**Figure 7**).

3.2.1. Wetlands and Waters of the United States

The wetland delineation identified 2.2 acres of potentially jurisdictional wetlands and 19.5 acres of other waters of the United States in the study area (**Table 3-3**). For the purposes of this NES, other waters of the United States include open water (shallow bay and deep bay), and the V-ditch.

[2] https://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_list.asp

Table 3-2. Invasive Plant Species Identified in the Study Area

Species	CDFA	Cal-IPC
Silver wattle (*Acacia dealbata*)	–	Moderate
Tree-of-heaven (*Ailanthus altissima*)	C	Moderate
Wild oat (*Avena fatua*)	–	Moderate
Common mustard (*Brassica rapa*)	–	Limited
Ripgut brome (*Bromus diandrus*)	–	Moderate
Soft chess (*Bromus hordeaceus*)	–	Limited
Italian thistle (*Carduus pycnocephalus*)	C	Moderate
Bull thistle (*Cirsium vulgare*)	C	Moderate
Poison hemlock (*Conium maculatum*)	–	Moderate
Bermuda grass (*Cynodon dactylon*)	C	Moderate
Red-stemmed filaree (*Erodium cicutarium*)	–	Limited
French broom (*Genista monspessulana*)	C	High
English ivy (*Hedera helix*)	–	High
Summer mustard (*Hirschfeldia incana*)	–	Moderate
Velvet grass (*Holcus lanatus*)	–	Moderate
Mediterranean barley (*Hordeum marinum* var. *gussoneanum*)	–	Moderate
Hare barley (*Hordeum murinum* ssp. *leporinum*)	–	Moderate
Smooth cat's ear (*Hypochaeris glabra*)	–	Limited
Rough cat's ear (*Hypochaeris radicata*)	–	Moderate
Italian ryegrass (*Lolium multiflorum*)	–	High
Hyssop loosestrife (*Lythrum hyssopifolium*)	–	Moderate
Bur-clover (*Medicago polymorpha*)	–	Limited
Narrow-leaved plantain (*Plantago lanceolata*)	–	Limited
Rabbit-foot grass (*Polypogon monspeliensis*)	–	Limited
Firethorn (*Pyracantha angustifolia*)	–	Limited
Himalayan blackberry (*Rubus armeniacus* [*discolor*])	–	High
Sheep sorrel (*Rumex acetosella*)	–	Moderate
Milk thistle (*Silybum marinum*)	–	Limited
Bigleaf periwinkle (*Vinca major*)	–	Moderate
Foxtail fescue (*Vulpia myuros*)	–	Moderate

Notes: The California Department of Food and Agriculture (CDFA) and California Invasive Plant Council (Cal-IPC) lists assign ratings that reflect the CDFA and Cal-IPC views of the statewide importance of the pest, likelihood that eradication or control efforts would be successful, and present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances. The Cal-IPC species list is more inclusive than the CDFA list.

The **CDFA categories** indicated in the table are defined as follows:

B: Eradication, containment, control or other holding action at the discretion of the county agricultural commissioner.

C: State-endorsed holding action and eradication only when found in a nursery; action to retard spread outside nurseries at the discretion of the county agricultural commissioner.

The **Cal-IPC categories** indicated in the table are defined as follows:

High: Species with severe ecological impacts, high rates of dispersal and establishment, and usually widely distributed.

Moderate: Species with substantial and apparent ecological impacts, moderate to high rates of dispersal, establishment dependent on disturbance, and limited to widespread distribution.

Limited: Species with minor ecological impacts, low to moderate rates of invasion, limited distribution, and locally persistent and problematic.



Source: Aerial Imagery, ESRI 2013

N

0 250 500
Feet

Project Area
Fencing only
Mean High Water Line (5.75 feet NAVD88)

Natural Community
Northern Foredunes (1.063 acres)
Ruderal (14.193 acres)
Eelgrass

Other Waters
Open Water
V-Ditch (0.449 acres)

Wetlands
Seasonal Wetland (0.013 acres)
Tidal Salt Marsh (2.189 acres)

Figure 7a Natural Communities Present in the Gateway Park Study Area

Note: No proposed alterations to highways or railways.

Path: K:\Projects_3TY\Lin\001\01.13_GatewayPark\mapdoc\Fig_7a_NaturalCommunity_Overview_NES_20141006.mxd; User: 19402; Date: 10/7/2014



Source: Aerial Imagery, ESRI 2013

Path: K:\Projects_3IYY\in\00101.13_GatewayPark\mapdoc\Fig_7bc_NaturalCommunity_NES_20141114.mxd | User: JAD2 | Date: 11/14/2014

N

0 100 200
Feet

- Project Area
- Fencing only
- Delineation Pit
- Mean High Water Line (5.75 feet NAVD88)

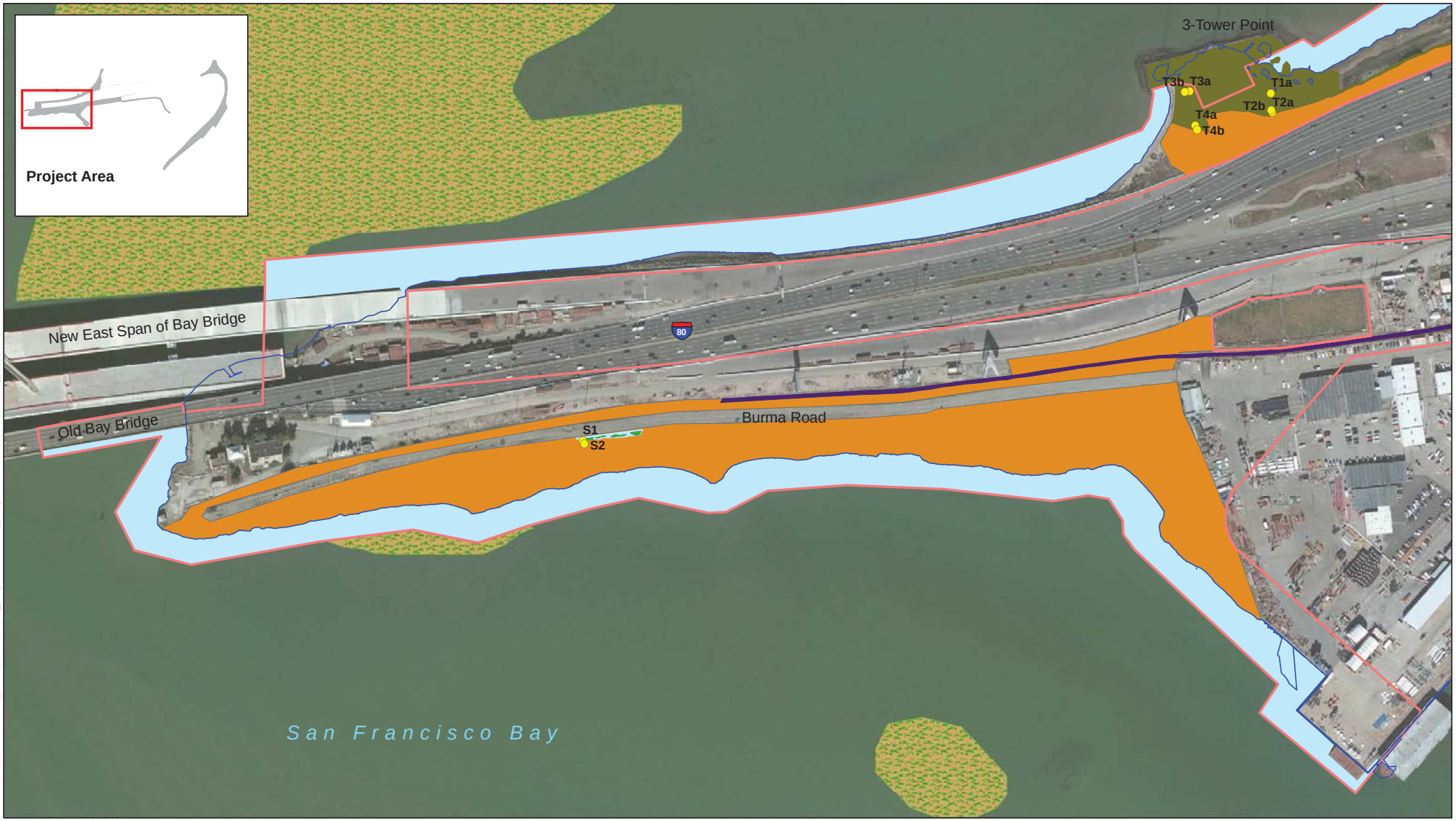
Natural Community
- Northern Foredunes (1.063 acres)
- Ruderal (14.193 acres)
- Eel Grass

Other Waters
- Shallow Bay (Estuarine)
- V-Ditch (0.449 acres)

Wetlands
- Seasonal Wetland (0.013 acres)
- Tidal Salt Marsh (2.189 acres)
- Area of Edge of Effect

Figure 7b Natural Communities Present in the Gateway Park Study Area

Note: No proposed alterations to highways or railways.



Source: Aerial Imagery, ESRI 2013

N

0 100 200
Feet

Project Area
Fencing only
Delineation Pit
Mean High Water Line (5.75 feet NAVD88)

Natural Community
Northern Foredunes (1.063 acres)
Ruderal (14.193 acres)
Eel Grass

Other Waters
Shallow Bay (Estuarine)
V-Ditch (0.449 acres)

Wetlands
Seasonal Wetland (0.013 acres)
Tidal Salt Marsh (2.189 acres)
Area of Edge of Effect

Figure 7c Natural Communities Present in the Gateway Park Study Area

Note: No proposed alterations to highways or railways.

Table 3-3. Summary of Acreages of Wetlands, Waters of the United States and Other Waters Delineated in the Study Area

Habitat Type	Jurisdictional Status	Acreage Delineated in the Study Area
Tidal salt marsh	Wetland	2.2
Seasonal wetland	Wetland	0.01
Total wetlands		**2.2**
Shallow Bay (Open water)	Other waters of the U.S.	6.5
Deep Bay/Channel (Open water)	Other waters of the U.S.	12.6
V-Ditch	Other waters of the U.S.	0.4
Total other waters		**19.5**
Total waters of the U.S.		**21.7**

3.2.1.1. TIDAL SALT MARSH

A total of 2.19 acres of tidal salt marsh were delineated in the study area (**Appendix D**). The tidal salt marsh community is located on the north side of I-80 at Radio Beach. Tidal marsh areas flanking the Radio Beach access road are separated by a paved road but are assumed to have been historically connected. Other small patches of hydrophytic vegetation are scattered throughout the 3-Tower Point area. A partially paved and partially unpaved dirt road extends through the center of the area, allowing access to the narrow strip of sandy beach to the northwest and to the 3-Tower Point to the west. The road, as well as other fill scattered throughout the Radio Beach area, precludes vegetation (ICF 2014).

High quality tidal marshes provide a complex habitat for many fish and wildlife species. Common fish in the Central San Francisco Bay, where the Gateway Park project is located, would include topsmelt (*Atherinops affinis*), arrow goby (*Clevelandia ios*), yellowfin goby (*Acanthogobius flavimanus*), and staghorn sculpin (*Leptocottus armatus*). Bird species associated with tidal marsh areas would include snowy egret (*Egretta thula*), northern harrier (*Circus cyaneus*), California clapper rail (*Rallus obsoletus*) (=Ridgway's rail), California black rail (*Laterallus jamaicensis coturniculus*), willet (*Tringa semipalmata*), short-eared owl (*Asio flammeus*), salt marsh yellowthroat (*Geothlypis trichas sinuosa*), and San Pablo song sparrow (*Melospiza melodia samuelis*). Mammal species that rely entirely on tidal marsh habitat include salt marsh wandering shrew (*Sorex vagrans halicoetes*), Suisun shrew (*Sorex ornatus sinuosus*), and salt marsh harvest mouse (*Reithrodontomys raviventris*). Predators that would prey on these species in the middle and high marsh would include red fox (*Vulpes vulpes*), skunks (*Mephitis mephitis*), opossums (*Didelphimorphia*), rats (*Rattus*), and coyote (*Canis latrans*) (San Francisco Bay Area Wetlands Ecosystem Goals Project 1999).

3.2.1.2. SEASONAL WETLAND

A total of 0.01 acre of seasonal wetland was delineated in the study area (**Appendix D**). The seasonal wetland is located south of I-80 in a shallow topographic depression on the southern margin of Burma Road, near the proposed concrete sea wall and retaining wall (**Appendix E**). The wetland is supported primarily by rainfall and surface water runoff from adjacent uplands and paved surfaces. The wetland contains a storm drain in the center, the outlet of which is unknown. Vegetative cover in the seasonal wetland was inconsistent and patchy (ICF 2014).

3.2.1.3. SHALLOW BAY, DEEP BAY. AND CHANNEL (OPEN WATER)

A total of 6.5 acres of shallow bay (open water) occurs in the study area. The proposed project is located in the Central Bay Segment of the San Francisco Bay Estuary. The estuary is commonly divided into several segments (listed from north to south): Suisun Bay, Carquinez Strait, San Pablo Bay, Central Bay, and South Bay. The San Francisco Bay Estuary sits at the terminus of the Sacramento-San Joaquin Delta, a system that drains 40 percent of the land area of California. The San Francisco Estuary and the Sacramento- San Joaquin Delta together form one of the largest estuarine systems in North America. Aquatic habitat in the estuary range from deep channel bottoms to tidal flats.

Shallow bay habitat is important for many invertebrates, fishes, and water birds. The rich environment is an especially productive feeding area for many fish species including Pacific herring (*Clupea pallasii*), splittail (*Pogonichthys macrolepidotus*), northern anchovy (*Engraulis mordax*), and jacksmelt (*Atherinopsis californiensis*). It is also an important migratory corridor for anadromous fishes such as Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*). Multiple bird species occur in shallow bay habitat such as western grebe (*Aechmophorus occidentalis*), American wigeon (*Anas Americana*), canvasback (*Aythya valisineria*), Foster's tern (Aythya valisineria), and least tern (*Sternula antillarum*), to name a few. Harbor seals (*Phoca vitulina*) and California sea lions (*Zalophus californianus*) can also be observed in these areas. Eelgrass is a particularly important plant species found in the upper reaches of shallow bays on mudflats in Central San Francisco Bay. Eelgrass provides feeding, escape, or breeding habitat for many species of invertebrates, fishes, and some waterfowl, The economically important Pacific herring spawns in eelgrass beds, and least terns forage on small fish that are found there (Goals 1999).

There is approximately 12.6 acres of deep bay/channel (open water) habitat in the study area. Deep bays and channels are important for large aquatic invertebrates including California bay shrimp (*Crangon franciscorum*), Dungeness crab (*Metacarcinus magister*), and rock crab (*Cancer antennarius*), and for fish species such as white sturgeon (*Acipenser transmontanus*) and brown rockfish (*Sebastes auriculatus*). They are also migratory corridors for anadromous

fishes such as Chinook salmon and steelhead. Deep bays and channels are also habitat for several species of water birds, including brown pelicans (*Pelecanus occidentalis*), double-breasted cormorant (*Phalacrocorax auritus*), greater (*Aythya marila*) and lesser scaup (*Aythya affinis*), surf scooter (*Melanitta perspicillata*), and Caspian tern (*Hydroprogne caspia*). Marine mammals such as harbor seal and California sea lion are found in deep bay and channel habitats as well (San Francisco Bay Area Wetlands Ecosystem Goals Project 1999).

3.2.2. Terrestrial Communities of Special Concern, Other than Wetlands.

Two terrestrial communities of special concern, other than wetlands were identified: northern foredunes and sandy beach.

3.2.2.1. NORTHERN FOREDUNES

An approximately 1.1 acre patch of northern foredunes is located on the northern shoreline of the project area at Radio Beach. This area is characterized by low-lying sandy beach abutting sparsely vegetated beach dunes. The dominant plant species include beach bur (*Ambrosia chamissonis*), iceplant (*Carpobrotius edulis*) (=fig marigold), and saltgrass (*Distichlis spicata*). This area is bound by tidal wetlands and large patches of iceplant.

3.2.2.2. SANDY BEACH

There is approximately 1.9 acres of sandy beach occurring at two locations in the project area. Approximately 1.4 acres of sandy beach occurs on the south side of Highway 1-80 where the kayak beach is proposed. The second location is approximately 0.5 acres and occurs north of I-80 in the Radio Beach area. The sandy beach areas lack trees and structures and are subject to daily submersion by high tides, so they do not provide suitable nesting habitat, but they do provide suitable foraging habitat for the following shorebirds and raptors: Western snowy plover (*Charadrius alexandrinus nivosus*) and California least terns (*Sterna antillarum browni*), and white-tailed kite (*Elanus leucurus*) and northern harrier (*Circus cyaneus*).

Shorebirds generally inhabit open areas of beaches, grasslands, wetlands, and tundra; some even nest above the tree line on mountains. This group of birds, which includes the plovers, oystercatchers, avocets, stilts, and sandpipers, often share characteristics of long bills, legs and toes and rather drab coloration. Long bills, legs, and toes are useful in wading to forage on mudflats and in wetlands. Shorebirds mainly feed on insects, mollusks, and other invertebrates that they locate by either sight or taste (USFWS 2002).

3.3. Regional Species of Concern

Table 3-4 lists the special-status plant, fish, and wildlife species that are known to occur or have the potential to occur in the geographic region. These species were identified based on the CNPS Inventory of Rare and Endangered Plants (2014) (**Appendix A**), the CNDDB records search (CDFW 2014) (**Appendix B**), species lists provided by USFWS (2014) (**Appendix C**), and species distribution and habitat requirements data.

For the purpose of this NES, special-status species are plants, animals, and fish that are legally protected under FESA, CESA, or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status plants, animals, and fish are those species in any of the categories listed below.

- Species listed or proposed for listing as threatened or endangered under FESA (50 CFR 17.11 [listed animals], 50 CFR 17.12 [listed plants], and various notices in the Federal Register [FR] [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under FESA (75 FR 69222, November 10, 2010).
- Species protected under the Marine Mammal Protection Act of 1972 (MMPA) (16 USC 1371)
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 California Code of Regulations [CCR] 670.5).
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380).
- Plants listed as rare under CNPPA (California Fish and Game Code 1900 et seq.).
- Plants considered by CNPS to be "rare, threatened, or endangered in California" (2009).
- Plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution, which may be included as special-status species on the basis of local significance or recent biological information.
- Animal species of special concern to CDFW.
- Animals fully protected in California (CFGC Section 3511 [birds], 4700 [mammals], 5050 [amphibians and reptiles], and 5515 [fish]).

3.3.1. California Natural Diversity Database Search Results

The CNDDB (CDFW 2014) search of the Oakland West (466D) USGS 7.5-minute quadrangles indicated that 40 special-status species (19 plant species, 16 wildlife species, and 5 fish species) have been recorded within approximately 5 miles of the study area (**Appendix B**).

Table 3-4. Listed, Proposed Species, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Requirements	Present/ Absent	Rationale
Fish					
North American green sturgeon	*Acipenser medirostris*	T/SSC	Occurs in marine waters of the Pacific Ocean from the Bering Sea to Ensenada, Mexico. In anadromous reaches of rivers from British Columbia south to the Sacramento River, primarily in the Klamath/Trinity and Sacramento Rivers. Juveniles are believed to be distributed widely throughout San Francisco, San Pablo, and Suisun Bays for feeding and rearing and are present in all months of the year (74 FR 52305).	Potentially Present/ CH	The marine portions of project area could be used as a foraging area for adult and juvenile green sturgeon.
Tidewater goby	*Eusclogobius newberryi*	E/SSC	Occurs in coastal brackish water habitats entirely within California, ranging from Tillas Slough (mouth of the Smith River, Del Norte County) near the Oregon border south to Agua Hedionda Lagoon (northern San Diego County).Occurs in coastal lagoons and the uppermost brackish zone of larger estuaries, rarely invading marine or freshwater habitats. The species is typically found in water less than 1meter (3.3 feet) deep and salinities of less than 12 parts per thousand(USFWS 2005).	Absent	No habitat in project area.
Delta smelt	*Hypomesus transpacificus*	T/E	Occur in estuarine waters up to 14 ppt (parts per thousand) salinity. For a large part of their one-year life span, delta smelt live along the freshwater edge of the mixing zone (saltwater-freshwater interface), where the salinity is approximately 2 ppt. Shortly before spawning, adults migrate upstream from the brackish-water habitat associated with the mixing zone and disperse widely into river channels and tidally influenced backwater sloughs. They spawn in shallow, fresh or slightly brackish water upstream of the mixing zone.	Absent	No habitat in project area.
Central California Coast coho salmon	*Oncorhynchus kisutch*	E/E	Current distribution includes coastal streams from Punta Gorda (Humboldt County) south to and including Aptos Creek (Santa Cruz County). Historically, there were populations in tributaries to San Francisco Bay, excluding the Sacramento-San Joaquin River system (CDFW 2014). Occurs in cool (12–14°C), clear, well-oxygenated streams with deep (0.5 to 1 meter or more) pools and dense riparian (overhead) and submerged cover (e.g., undercut banks, woody material), particularly in the pools or runs (Moyle 2002, Moyle et al. 2008)	Absent	Extirpated from San Francisco Bay tributaries so would not use the project area.
Central California coast (CCCC) steelhead	*Oncorhynchus mykiss*	T/-	Occurs in coastal streams from Russian River to Aptos Creek (Santa Cruz County); tributaries to San Francisco, San Pablo, and Suisun Bays; and coastal marine waters off California. Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8 to 18°C (Moyle 2002); habitat types include riffles, runs, and pools of freshwater streams and rivers, and coastal estuaries.	Present	The marine portions of the project area provides migratory habitat for adult and juvenile steelhead. Steelhead spawn in tributaries that connect directly to San Francisco Bay.

Common Name	Scientific Name	Status Federal/ State	General Habitat Requirements	Present/ Absent	Rationale
Central Valley spring-run Chinook salmon	*Oncorhynchus tshawytscha*	T/T	Occurs in the Sacramento River and its tributaries in California, including the Feather River, as well as the Feather River Hatchery spring run Chinook program.	Present	Adult Chinook salmon likely use the deeper channels in the Bay to migrate into freshwater streams. Juvenile Chinook salmon would use the Central Bay for foraging and movement. Although not on the direct migratory path of this species, it could move into the project area during its migratory movements.
Central Valley winter-run Chinook salmon	*Oncorhynchus tshawytscha*	E/E	Occurs in the Sacramento River and its tributaries in California, including the Feather River, as well as the Feather River Hatchery spring run Chinook program.	Present	Adult Chinook salmon likely use the deeper channels in the Bay to migrate into freshwater streams. Juvenile Chinook salmon would use the Central Bay for foraging and movement. Although not on the direct migratory path of this species, it could move into the project area during its migratory movements.
Longfin smelt	*Spirinchus thaleichthys*	C/T	Within California, mostly in the Sacramento River–San Joaquin River Delta, but also in San Francisco Bay, Humboldt Bay, Eel River estuary, and Klamath River estuary. Salt or brackish estuary waters with freshwater inputs for spawning.	Present	The marine portions of the project area provide migratory habitat for adult longfin smelt.
Amphibians					
California red-legged Frog	*Rana draytonii*	T	Occurs from Riverside County to Mendocino County along the Coast Range; from Calaveras County to Butte County in the Sierra Nevada; and in Baja California, Mexico in fairly distinct habitat, combining both specific aquatic and riparian components. Adults need dense, shrubby or emergent riparian vegetation closely associated with deep (greater than 2 1/3-foot deep) still or slow moving water (USFWS 2013).	Absent	There is no suitable habitat (vernal pools, seasonal pools, freshwater ponds) for California red-legged frog or California tiger salamander within two miles of the project area.
Reptiles					
Alameda Whipsnake	*Masticophis lateralis euryxanthus*	T	Occurs in small to large patches of chaparral or coastal scrub vegetation, interspersed with other native vegetation types and rock lands throughout Contra Costa County, most of Alameda County, and portions of northern Santa Clara and western San Joaquin counties. Chaparral and coastal scrub vegetation serve as the center of home ranges, provide for concealment from predators, and foraging opportunities. However, verified observations have been made up to 6.4 kilometers (4 miles) from coastal scrub and chaparral habitat.	Absent	Alameda whipsnake is typically found within chaparral, northern coastal sage scrub, and coastal sage habitats, none of which occurs within the project area itself or within one mile of the project's location.

Common Name	Scientific Name	Status Federal/ State	General Habitat Requirements	Present/ Absent	Rationale
Birds					
Western Snowy Plover	*Charadrius alexandrines nivosus*	T	Western snowy plover nest on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans in lagoons and estuaries; and forage primarily in wet sand, salt ponds, salt pans, and marshes.	Present	There is suitable Western snowy plover foraging habitat at Radio Point; however, there is no suitable nesting habitat for Western snowy plover within the project area.
California Clapper Rail	*Rallus longirostris obsoletus*	E/E, FP	Marshes around the San Francisco Bay and east through the Delta to Suisun Marsh. Restricted to salt marshes and tidal sloughs; usually associated with heavy growth of pickleweed; feeds on mollusks removed from the mud in sloughs.	Present	The tidal salt marsh adjacent to the project area (the Emeryville Crescent) does provide suitable habitat for the California clapper rail; however, there is no suitable California clapper rail habitat within the project area.
California Black Rail	*laterallus jamaicensis ssp. coturniculus*	-/T	Occurs in saline, brackish, and fresh emergent wetlands dominated by pickleweed, in the San Francisco Bay area, Sacramento-San Joaquin Delta, coastal southern California at Morro Bay and a few other locations, the Salton Sea, and lower Colorado River area.	Present	The tidal salt marsh adjacent to the project area (the Emeryville Crescent) does provide suitable habitat for the California black rail; however, there is no suitable California black rail habitat within the project area.
California Least Tern	*Sternula antillarium browni*	E/E	Occur in shallow estuaries or lagoons where small fish are abundant. Nesting today is limited to colonies in San Francisco Bay, Sacramento River delta, and areas along the coast from San Luis Obispo County to San Diego County. The greatest concentrations of breeding pairs nest in Los Angeles, Orange and San Diego counties.	Present	California least terns have been observed flying through the project area or foraging on the Bay; however, there is no suitable nesting habitat for California least terns within the project area.
Northern harrier	*Circus Cyaneus*	SSC	Occurs in large, undisturbed tracts of wetlands and grasslands with low, thick vegetation. Northern harriers in the western United States tend to breed in dry, upland habitats.	Present	The tidal marsh in the study area is poor foraging habitat because of its limited size and proximity to the high level of ambient noise from the Bay Bridge.
Alameda Song Sparrow	*M. m. pusillula*	SSC	Endemic to California, where it is restricted to tidal salt marshes on the fringes of south San Francisco Bay.	Present	The tidal marsh area near Radio Beach is suitable habitat that could be used for foraging and nesting by Alameda song sparrow,

Common Name	Scientific Name	Status Federal/ State	General Habitat Requirements	Present/ Absent	Rationale
Saltmarsh common yellowthroat	*Geothlypis trichas sinuosa*	SSC	The current range includes four main areas: coastal riparian and wetland areas of western Marin County, the tidal marsh system of San Pablo Bay, the tidal marsh system of southern San Francisco Bay, and coastal riparian and wetland areas in San Mateo County.	Present	The tidal marsh area near Radio Beach is suitable habitat that could be used for foraging and nesting by saltmarsh common yellowthroat.
Mammals					
Salt Marsh Harvest Mouse	*Reithrodontomys raviventris*	E/E, FP	Occurs at San Francisco, San Pablo, and Suisun Bays and in the Delta. Habitat consists of salt marshes with a dense plant cover of pickleweed and fat hen with an adjacent upland area for flood escape.	Present	The tidal salt marsh adjacent to the project area (the Emeryville Crescent) does provide suitable habitat for the salt marsh harvest mouse; however, there is no suitable salt marsh harvest mouse habitat within the project area.
Plants					
Blue Coast Gilia	*Gilia capitata Sims.* ssp. *chamissonis*	T/E, 1B.1	Endemic to California; occur in coastal dunes and coastal scrub	Absent	There is suitable habitat (coastal dunes and coastal scrub) in the project area.
Beach Layia	*Layia carnosa*	E/E, 1B.1	Endemic to California; occurs in dunes and coastal habitats	Absent	Suitable habitat for beach layia occurs in the project area; however, the species was not detected in these areas during surveys.
California Sea Blite	*Suaeda californica*	E/E 1B.1	Endemic to California; occurs in coastal salt marsh and wetland-riparian habitats	Absent	Suitable habitat for California sea blite occurs in the project area; however, the species was not detected in these areas during surveys.

Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present. The species may be present. Present [P] - the species is present. Critical Habitat [CH] - project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present. Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC), Federal Species of Concern (FSC); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Rare (SR); State Species of Special Concern (SSC); California Native Plant Society (CNPS), etc.

3.3.2. U.S. Fish and Wildlife Service Species List

USFWS provided a list of 18 listed, proposed for listing, or candidate species (3 plant species and 15 wildlife species) that may occur in the study area or be affected by projects in the Oakland West quadrangle (**Appendix C**).

3.3.3. National Marine Fisheries Service Species List

NMFS did not provide a list of fish species for the project area. Professional judgment was used to determine which fish species occur in the project area. Critical habitat for green sturgeon, which occurs in the project area, was designated on October 9, 2009. EFH is designated in the project area for Pacific salmon, Pacific groundfish and coastal pelagic species. Marine mammals such as harbor seals (*Phoca vitulina*) and California sea lions (*Zalophus californicus californianus*) protected by the MMPA, occur in the study area and in nearby parts of San Francisco Bay, and could also be affected by the project.

3.3.4. Special-Status Plant Species

Based on the CNDDB search results (CDFW 2014), the CNPS Inventory (CNPS 2014), and the USFWS list (USFWS 2014) for the project region, the following three special-status plant species, which are all endemic to California, were determined to have the potential to occur in the project region: beach layia (*Layia carnosa*), blue coast gilia (*Gilia capitata Sims* ssp. *chamissonis*), and California seablite (*Suaeda californica*) (**Appendix B**). All three species are threatened by urbanization, recreational development, and non-native plants. However, many parts of the study area have a high level of disturbance from previous and ongoing activities, such that suitable microhabitat conditions for special-status plant species are present only in limited areas, making it is very unlikely beach layia (*Layia carnosa*), blue coast gilia (*Gilia capitata Sims* ssp. *chamissonis*), or California seablite (*Suaeda californica*) would occur in the project area.

3.3.5. Special-Status Wildlife Species

Based on the CNDDB search results and the USFWS list for the project region, sixteen special-status wildlife species were determined to have the potential to occur in the project region. After completion of the field survey and review of species distribution and habitat requirements data, the biologists determined that 13 of the 15 species would not occur in the study area because the area lacks suitable habitat for the species or is outside the species' known range (**Appendix B**). Suitable habitat occurs in the project area for the following three special–status wildlife species California clapper rail (*Rallus longirostris obsoletus*), California black rail (*laterallus jamaicensis* ssp. *coturniculus*), and salt marsh harvest mouse (*Reithrodontomys raviventris*).

3.3.6. Special-Status Fish Species

Based on a review of existing information, eight special-status fish species were initially identified as having the potential to occur in the project region (**Appendix B**). Three fish species would not occur in the study area because there is no habitat. The five special-status fish species that have the potential to occur in the study area or to be affected by construction activities are: central California coast steelhead, green sturgeon, Central Valley spring-run Chinook salmon, and Sacramento winter-run Chinook salmon. These species are discussed in Chapter 4. Critical habitat for green sturgeon occurs in the study area.

3.3.7. Other Protected Species

3.3.7.1. MIGRATORY BIRDS AND RAPTORS

Non-special-status migratory birds and raptors have the potential to nest in trees and shrubs in the study area. Non-special-status double-breasted cormorants (*Phalacrocorax auritus*), barn owl, black phoebe, house finch, killdeer, mourning dove, and rock pigeon have the potential to nest under the existing and new Bay Bridges adjacent to the study area. Although these species are not considered special-status wildlife species, their occupied nests and eggs are protected by CFGC Sections 3503 and 3503.5 and the MBTA.

Shorebirds including Western snowy plover and California least terns, and raptors such as white-tailed kite and northern harrier have the potential to forage in the Radio Beach Area. In addition, the deep bay and channel marine environments provide habitat for waterfowl, including brown pelicans, double-breasted cormorant, greater and lesser scaup, surf scooter, and Caspian tern.

3.3.7.2. BATS

There is one species of bat that is not a species of special concern, but it is considered a priority species by the Western Bat Working Group. Priority by the Western Bat Working Group does not qualify as special-status.

3.3.7.3. TREES

Trees protected by the Oakland Municipal Code (Chapter 12.36, Protected Trees) include Coast Live Oak (four inches or larger in diameter) or any other species nine inches or larger in diameter, except Eucalyptus and Monterey Pine trees. Monterey Pine trees are considered protected only when they are on City property and in development-related situations where more than five Monterey Pine trees per acre are proposed to be removed. In the study area, there are only ornamental trees and a few pine trees adjacent to the Bay Bridge in the Radio Beach area.

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

4.1. Wetlands and Waters of the United States

Wetlands and waters of the U.S. observed within the study area include littoral and marine habitats that are protected by the federal Clean Water Act as well as the state Porter-Cologne Water Quality Act. Wetlands and waters of the U.S. and the state within the study area include tidal salt marsh, seasonal wetland, shallow bay, and deep bay/channel habitat, as shown in **Figure 7**. The potential impacts to these communities are summarized in **Table 4-1**.

Table 4-1. Summary of Impacts on Wetlands and Waters of the United States

Community Type	Total Study Area (acres)	Permanent Impact Area (acres)	Temporary Impact Area (acres)
Tidal Salt Marsh	2.2	0.006	0.007
Seasonal Wetland	0.01	0.01	N/A
Shallow Bay	6.5	0.24 (fill) 0.37 (shading)	0.10
Deep Bay	12.6	N/A	N/A

4.1.1. Tidal Salt Marsh

4.1.1.1. SURVEY RESULTS

A total of 2.19 acres of tidal salt marsh, analogous to the California Department of Fish and Wildlife (CDFW) *Sarcocornia pacifica* Alliance[3] natural community, were delineated in the study area. The tidal salt marsh community is located on the north side of I-80 at Radio Beach. Fill (asphalt, cement, rock, and trash) is scattered throughout the Radio Beach tidal marsh. In some areas, the fill has created berms and isolated sections of tidal marsh. In other areas, it has been invaded by iceplant (*Carpobrotus chilensis*) and crocosmea (*Crocosmia X crocosmiiflora*).

4.1.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

Implementation of the following avoidance and minimization measures would ensure the proposed project avoids and minimizes effects on tidal marsh and mud flat habitat in and adjacent to the project construction area.

[3] https://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_list.asp

Install Construction Barrier Fencing around Environmentally Sensitive Areas in and adjacent to the Construction Area to Protect Sensitive Biological Resources to Be Avoided

The project proponent or its contractor will install construction barrier fencing (including sediment fencing) to prevent contaminants and debris from entering the northern coastal salt marsh, and other biologically sensitive areas in and adjacent to the project area. Before construction begins, the project proponent will retain a qualified biologist or resource specialist to work with the project engineer or construction contractor to identify the locations for the barrier fencing and will mark those locations with stakes or flagging. The protected area will be clearly identified as an Environmentally Sensitive Area (ESA) on the construction specifications. The ESA fencing will be in place before construction activities are initiated. The fencing will be maintained by the project proponent or its contractor throughout the duration of the construction period. If the ESA fencing is removed, damaged, or otherwise compromised during the construction period, construction activities will cease until the fencing is replaced. In addition, the project proponent will install ecological interpretation signage at locations identified by the biologist or resource specialist to discourage people from encroaching onto sensitive habitats.

Prepare Environmental Awareness Program and Conduct Environmental Awareness Training for Construction Employees

Prior to construction, the project proponent will retain a qualified biologist or resource specialist to develop an environmental awareness program and conduct environmental awareness training for construction employees. The program will explain the importance of onsite biological resources, including sensitive natural communities, any protected trees to be retained, special-status plant populations, special-status wildlife habitats, and how to best avoid take of federally listed species. The program will include invasive plant identification and the importance of controlling and preventing the spread of invasive plant infestations.

The environmental awareness program will be provided to all construction personnel to inform them on the life history of special-status species in or adjacent to the project area, the need to avoid impacts on sensitive biological resources, any terms and conditions required by state and federal agencies, and the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor's superintendent will ensure that the personnel receive the mandatory training before starting work. An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all relevant permit conditions will be provided to each person.

Protect Water Quality and Prevent Erosion and Sedimentation in Drainages, Waterways and Wetlands

- A Stormwater Pollution Prevention Plan (SWPPP) will be implemented as part of the National Pollutant Discharge Elimination System (NPDES) and a General Construction Activity Storm Water Permit to minimize the potential for sediments or contaminants to be discharged into San Francisco Bay and the potential for adverse effects on biological resources. A toxic materials control and spill response plan will be implemented to regulate the use of petroleum-based products (fuel and lubricants) and other potentially toxic materials associated with project construction.
- The project proponent will review and approve the contractors' toxic materials spill prevention control and countermeasure plan before allowing construction to begin. The project proponent will routinely inspect the construction site to verity that BMPs specified in the plan are properly implemented and maintained. The project proponent will notify the contractor immediately if there is a noncompliance issue and will require compliance. The project proponent also will obtain a 401 Water Quality Certification from the San Francisco RWQCB, which may contain additional BMPs and water quality measures to ensure the protection of water quality.

Implement Measures to Avoid the Introduction and Spread of Invasive Plants

The project proponent or their contractor will implement the following measures to avoid the introduction and spread of invasive plants during construction.

- Retain a qualified biologist to identify invasive plant species in the construction work area, remove all invasive plant material, and dispose of at a certified landfill.
- Minimize surface disturbance within the construction work area to the greatest extent possible.
- Seed all the disturbed areas with certified weed-free native mixes and mulch with certified weed-free mulch (rice straw may be used in upland areas).
- Use native, noninvasive species in erosion control plantings to stabilize site conditions and prevent invasive species from colonizing

Retain a Biological Monitor to Conduct Construction Monitoring in and adjacent to all Environmentally Sensitive Areas

The project proponent will retain a qualified biologist to conduct construction monitoring in and adjacent to all identified environmentally sensitive areas. The frequency of monitoring will be determined by the biological monitor, ranging from daily to weekly, depending on the biological

resource and the construction activities. Construction monitoring duties will include the following:

- Inspect the staked and flagged perimeters of the construction area and staging areas adjacent to identified environmentally sensitive areas, and notify the construction contractor of any corrections needed.
- Inspect the construction barrier fencing (including sediment fencing) and notify the construction contractor of any necessary maintenance or repairs.
- Assist the construction crew as needed to comply with all project implementation restrictions and guidelines.

Project Impacts

Construction of the boardwalk portion of the path to Radio Beach (Segment 3, 395-foot-long boardwalk) north of I-80 would result in a permanent impact to 0.006 acres and temporary impact to 0.007 acres of tidal marsh habitat. Indirect impacts on tidal marsh habitat could also occur from adjacent construction activity of the rest of the path to Radio Beach due to erosion and sedimentation and discharge of pollutants into the tidal salt marsh. Implementation of the avoidance and minimization measures, however, would prevent construction related indirect effects on the tidal marsh areas during construction. The tidal marsh habitat that would be affected by the construction of the boardwalk is a small, patchy area that has been previously fragmented.

Operationally, indirect effects could occur as a result of increased human activity adjacent to the tidal marsh areas. These indirect effects could inadvertent trampling of marsh vegetation by park visitors that do not follow park instructions and designated trails and visual and noise disturbances to tidal marsh species. However, the project would also include restoration activities on the 2.2 acres of tidal wetlands in the Radio Beach area with the goal to extend the Emeryville Crescent Marsh vegetation and upland coastal scrub vegetation in the disturbed areas of Radio Beach not proposed for the boardwalk and not consisting of sandy beach.

With implementation of the proposed restoration and the avoidance and minimization measures described above, the Project would avoid non-necessary impacts to tidal salt marsh by implementing controls to prevent pollution and the unintentional introduction of fill to surrounding tidal salt marsh, would minimize its effect on tidal marsh habitat by only impacting the minimum area necessary to construct the Project with sedimentation controls in place and would restore higher functioning wetland through restoration planting and controlled park access.

4.1.1.3. COMPENSATORY MITIGATION

The proposed on-site restoration will include planting and habitat enhancement including removal of non-native invasive plants and marsh planting including pickleweed and Pacific

cordgrass. The minimum area of new marsh planting will be 0.012 acres to provide at least a 2:1 replacement for the tidal marsh lost due to the installation of the new boardwalk. No off-site compensation is proposed for impacts to tidal marsh.

4.1.1.4. CUMULATIVE IMPACTS

The recent installation of the eastern span of the new Bay Bridge and the removal of the old Bay Bridge is the primary project that affects the Bay and its margins nearest the Gateway Park Project. According to the EIS and regulatory permits for the east span project Construction of the preferred alternative east span did not affect any tidal wetlands (SFOBB FEIS 2001). The redevelopment of the Oakland Army Base, including the Gateway West project which is immediately adjacent to the Gateway Park project, would result in the loss of up to 0.5 acres of isolated, urban wetlands located in the UPRR railyard, which is located adjacent to I-880. Mitigation adopted for the redevelopment project requires compliance with all conditions by applicable agencies. As the subject wetlands are isolated, they may not be waters of the United States, but would remain waters of the state, and the redevelopment project would be required to compensate for their loss through RWQCB permitting. The subject wetlands at the rail yard are not adjacent to, or in any way connected to the tidal marsh affected by, the Gateway Park project, and thus, no cumulative impact is identified (City of Oakland, 2002).

While other development projects are planned throughout the region, many of these projects occur within already developed portions of land and would not affect the Bay or its margins. Where development projects are proposed in areas of tidal marsh, they would be required by federal and state regulations to result in no net loss of wetlands. In addition, there are numerous efforts throughout San Francisco Bay to restore tidal marsh. Examples include the Hamilton Wetland Restoration Project in San Pablo Bay and the South Bay Salt Pond Restoration Project in southern San Francisco Bay. [4]

The project would result in no net loss of tidal marsh and thus would not contribute to cumulative impacts on this resource.

4.1.2. Seasonal Wetland

4.1.2.1. SURVEY RESULTS

A total of 0.01 acre of seasonal wetland, also analogous to the CDFW *Sarcocornia pacifica* Alliance[1] natural community, was delineated in the study area (Refer to **Appendix D**). The

[4] Other projects were considered, but not discussed, in the cumulative analysis because they would occur in developed areas and would not contribute to natural resource impacts include: SFOBB Regional bike/ped path, Caltrans maintenance complex, Bridge Yard Building Rehabilitation, Parking east of the Bridge Yard, and renewable energy improvements at the EBMUD WWTP.

isolated, seasonal wetland is located south of I-80 in a shallow topographic depression on the southern margin of Burma Road. The wetland is not a natural feature given the artificial nature of the site and its origin is due to uneven settlement/grading of the site adjacent to Burma Road. The wetland is not connected to San Francisco Bay.

Seasonal wetlands connected to or with a significant nexus to navigable waters are waters of the United States, subject to regulation under CWA Section 404; this wetland is presumed to be a water of the United States pending Corps verification, but due to its isolated nature may not be determined to be within Corp jurisdiction. Regardless, this wetland is considered a water of the state subject to state regulation.

4.1.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

The proposed project would likely fill this seasonal wetland as part of park development. Thus no avoidance and minimization measures would apply.

4.1.2.3. PROJECT IMPACTS

Project implementation would widen roads adjacent to the seasonal wetland and would grade and elevate park areas at the wetland site as part of the sea level rise adaptations strategy. Thus, this wetland would be filled and it is not proposed to recreate a seasonal wetland on site.

4.1.2.4. COMPENSATORY MITIGATION

Since tidal wetland restoration will be conducted at Radio Beach, it is proposed to compensate for the loss of 0.01 acre of seasonal wetland by adding an additional 0.02 acre of tidal wetland restoration. As noted above, to compensate for the loss of 0.007 acre of tidal wetland a minimum of 0.012 acre of tidal wetland would be restored at Radio Beach. The additional 0.02 acre of proposed mitigation would bring the minimum total of tidal wetland restoration to 0.032 acre. Tidal wetland restoration is considered a more appropriate wetland type for restoration at the site given the nexus and connection to adjacent tidal wetland in the Emeryville Crescent rather than creation of new seasonal wetlands on the site.

4.1.2.5. CUMULATIVE EFFECTS

Cumulative impacts on seasonal wetland habitat are similar to the impacts discussed above for tidal salt marsh. The East Span project did not affect seasonal wetlands (SFOBB FEIS 2001). The Oakland Army Base redevelopment would affect isolated wetlands in the UPRR railyard, but compensation would be required through RWQCB permitting (City of Oakland 2002). Other development projects in the Bay Area will also affect seasonal wetlands but are also subject to federal and/or state permitting requirements. The proposed project would result in a minimal contribution to cumulative impacts on this resource with the loss of 0.01 acres, but the proposed compensation out of kind to restore tidal wetlands at Radio Beach will compensate for this loss by recreating a more appropriate wetland type.

4.1.3. Shallow Bay and Deep Bay

4.1.3.1. SURVEY RESULTS

A total of 6.5 acres of shallow bay (estuarine habitat) occurs in the project area. The waterside portion of the study area is primarily un-vegetated, shallow, open water of the San Francisco Bay. Substrate material in the project area consists of bay mud. Bathymetry ranges from 0 to 10 feet in most areas around the site. (San Francisco Bay Subtidal Habitat Goals Project 2014).

Numerous species of birds, mammals, fish, and other wildlife depend on estuarine habitats as places to live, feed, and reproduce. Bird species that could forage in this area include: the common loon (*Gavia immer*), Western grebe (*Aechmophorus occidentalis*), brown pelican (*Pelecanus occidentalis*), and surf scooter (*Melanitta perspicillata*). North American green sturgeon (*Acipenser medirostri)* could potentially forage in this habitat. Central California coast (CCCC) steelhead (*Oncorhynchus mykiss)*, Central Valley winter and spring-run Chinook salmon (*Oncorhynchus tshawytscha),* and longfin smelt *(Spirinchus thaleichthys)* could utilize this area as migratory habitat.

There is also approximately 12.6 acres of deep bay/channel habitat in the study area. Deep bays and channels are important for large aquatic invertebrates including California bay shrimp (*Crangon franciscorum*), Dungeness crab (*Metacarcinus magister*), and rock crab (*Cancer antennarius*), and for fish species such as white sturgeon (*Acipenser transmontanus*) and brown rockfish (*Sebastes auriculatus*). They are used by migratory anadromous fishes such as Chinook salmon and steelhead. Deep bays and channels are also habitat for several species of water birds, including brown pelicans (*Pelecanus occidentalis*), double-breasted cormorant (*Phalacrocorax auritus*), greater (*Aythya marila*) and lesser scaup (*Aythya affinis*), surf scooter (*Melanitta perspicillata*), and Caspian tern (*Hydroprogne caspia*). Marine mammals such as harbor seal and California sea lion are found in deep bay and channel habitats as well (San Francisco Bay Area Wetlands Ecosystem Goals Project 1999).

4.1.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

With implementation of avoidance and minimization measures described in Section 4.1.1.2, the Project would avoid non-necessary impacts to bay (estuarine) habitat by implementing controls to prevent pollution and the unintentional introduction of fill or sedimentation to the habitat surrounding outside of the proposed project area, and would minimize its effect on bay (estuarine) habitat by only impacting the minimum area necessary to construct the Project with sediment controls in place. Avoidance and minimization measures concerning pile-driving effects on marine species are articulated separately below in discussion of impacts to listed fish species.

4.1.3.3. PROJECT IMPACTS

Project impacts on shallow bay habitat would include pier construction and the installation of revetment walls, a concrete terrace wall and the elevated boardwalk from Key Point to Radio Beach (**Table 4-2**). Project impacts on the bottom substrate would include permanent fill as well as temporary disturbance of the Bay substrate, releasing sedimentation and increasing turbidity of the water. No direct impacts to deep bay are expected.

Table 4-2. Permanent Impacts to Shallow Bay Habitat

Location	Project Component	Area of Effect Below the Mean High Tide Line
Fill		
Southern Shoreline	Shoreline Improvements	None
Key Point	Concrete sea wall and retaining wall at EBMUD outfall.	Area: 0.23 acres
Key Point	Pilings for the pier	Area: 0.0032 acres
Key Point to Radio Beach	Piles for the Elevated Pathway	Area: 0.0045 acres
Totals	*Permanent Fill*	*Area: 0.24 acres*
Shading		
Key Point	Pier Deck	Area: 0.21 acres
Key Point to Radio Beach	Elevated Path (excluding area under I-80)	Area: 0.16 acres
Totals	*Permanent Shading*	*Area: 0.37 acres*

Direct effects to shallow bay (estuarine) habitat would occur from the installation of the pier and path pilings, the shading effects of the pier and path, and the installation of shoreline protection features consisting of revetment walls and a concrete terrace wall. Indirect effects could occur from increased turbidity and sedimentation during construction on the surrounding shallow bay (estuarine) habitat. The potential indirect effects will be temporary and localized, and BMPs to limit the disturbance in water quality will be implemented to avoid and reduce these effects to the surrounding shallow bay (estuarine) habitat.

The proposed project includes the pier and the path to Radio Beach that could result in new shading of shallow bay habitat.[5] Habitat conditions for a number of fish, macroinvertebrates, and aquatic plants can be affected by extensive shading. In some instances, predatory fish are known to use shaded areas as hiding habitat thereby increasing the risk of small fish such as juvenile salmonids or longfin smelt to predation. As a result of the height of the pier and the pathway to Radio Beach, sunlight will be able to reach the water surface during morning and afternoon periods when the sun is at an angle to water, but mid-day shading will occur. Increasing the area of shaded aquatic habitat associated with the proposed project may affect (increased risk of predation and reduced habitat suitability) protected fish and other managed aquatic resources.

[5] The area of the path under I-80 is not included in the shading calculations.

The project will not directly impact deep bay/channel habitat. Indirect effects could occur from increased turbidity and sedimentation during construction on the surrounding deep bay /channel habitat. Implementation of the avoidance and minimization measures described in Section 4.1.1.2 would avoid impacts to deep bay/channel habitat by implementing controls to prevent pollution and increased turbidity during construction. The phasing of the project construction is expected to further temporally fragment any temporary impacts that occur and reduce the magnitude of such impacts to deep bay/channel habitat.

With implementation of the avoidance and minimization measures described in Section 4.1.1.2, the Project would avoid non-necessary impacts to bay (estuarine) habitat by implementing controls to prevent pollution and an increase in turbidity and sedimentation to surrounding habitat outside of the proposed project area, and would minimize its effect by only impacting the minimum area necessary to construct the Project with sediment/turbidity controls in place.

4.1.3.4. COMPENSATORY MITIGATION

The project proponent will comply with the U.S. EPA wetland policy of No Net Loss by purchasing shallow bay (estuarine) mitigation credits from an Army Corps Approved Mitigation Bank for unavoidable permanent impacts to shallow bay (estuarine) waters of the U.S. Compensation will be provided on a minimum 1:1 ratio for impact of permanent fill. Based on present estimates, approximately 0.24 acre will require compensation. The project is within the service area for the San Francisco Bay Wetland Mitigation Bank, which is approved for mitigation of tidal wetlands and other waters.[6]

Effects to shading could be compensated through removal of existing piling/unused docks in the Bay at a minimum 1:1 ratio. Based on present estimates, approximately 0.37 acres of shade removal will be obtained. One possible approach could be to contribute funding to an ongoing project such as the California State Coastal Conservancy's San Francisco Bay Creosote Piling Removal and Pacific Herring Restoration Project, which will remove creosote-treated pilings and reestablish subtidal habitat through restoration methods to establish eelgrass and oyster beds and associated substrate. There may be other restoration projects that may also result in removal of overwater fill/shading that could be used as well.

No compensatory mitigation is proposed for deep bay/channel habitat because the project would not result in any loss or fill or shading of deep bay/channel habitat.

[6] As of 2015, the cost for credits at this bank are $95,000/0.1 acre with minimum increments of 0.05. Thus compensation would be either 0.30 acres or 0.35 acres. Based on the estimated cost per acre, the cost for bank credit could be $285,000 to $332,500. Credits may not be available in future years depending on purchases from other parties.

4.1.3.5. CUMULATIVE IMPACTS

Cumulative impacts could potentially result from infrastructure projects in the immediate vicinity of the Project, operational and maintenance dredging, development projects that encroach on bay habitat, restoration projects, in combination with project effects.

The recent installation of the eastern span of the new Bay Bridge and the removal of the old Bay Bridge is the primary project that affects the Bay and its margins nearest the Gateway Park Project. According to the EIS (SFOBB FEIS 2001) and regulatory permits (SFOBB BCDC permit) for the east span project, the East Span project would result in the following impacts on bay habitat:

- Temporary in-water bay fill of approximately 1 acre (excluding areas of permanent fill);
- Permanent in-water bay fill of approximately 4.5 acres (including approximately 1.5 acres of eelgrass habitat and 3 acres of sandflat habitat);
- net increase in the volume of the bay by 174,000 cubic yards; and
- dredging and associated disturbance of approximately 617,000 cubic yard of material over 99 acres of the Bay.

The East Span project also included a substantial mitigation program concerning impacts to bay habitat including avoidance and minimization practices during construction, removal of the prior east span, on-site restoration of 3 acres of sand flats and eelgrass beds, off-site eelgrass restoration, funding of an off-site mitigation program to restore shallow water submerged land and wetland habitat (including support for restoration actions at Skaggs Island; habitat restoration at Eastshore State Park, and funding for eelgrass restoration program) (SFOBB FEIS 2001).

The redevelopment of the Oakland Army Base, which is adjacent to the Gateway Park project, would result in the net loss of approximately 27 acres of open and covered water due to the New Berth 21 element of the redevelopment plan. New Berth 21 would replace existing Outer Harbor Berths 21, 20, 10, 9, and 8. To achieve an efficient terminal and berth geometry, the redevelopment project includes reconfiguring a portion of the Outer Harbor shoreline, including both excavation and fill to create new land for a marine terminal. Mitigation adopted by the City of Oakland includes compliance with Corps, RWQCB, USFWS/NMFS, and CDFW requirements for all bay fill (City of Oakland 2001). The Gateway West project (which is part of the Army Base redevelopment) is directly adjacent to the Gateway Park project and would include establishment of an oversize and bulk terminal on existing disturbed areas, but would use existing Berths 6 and 7 and would not include new fill in the bay.

While other development projects are planned throughout the region, many of these projects occur within already developed portions of land and would not affect the Bay. Where development projects are proposed in areas of bay, they would be required by federal (USACE) and state (RWQCB, BCDC) permitting requirements to result in no net loss of bay habitats and no net increase in shading. In addition, there are numerous efforts throughout San Francisco Bay to restore bay habitats including open water habitat. Examples include the Hamilton Wetland Restoration Project and the Sears Point Project in San Pablo Bay and the South Bay Salt Pond Restoration Project in southern San Francisco Bay, among others.

In combination with cumulative projects described above, the project would contribute to cumulative impacts on bay (estuarine) habitat due to the project's permanent, direct impacts on 0.24 acres shallow bay (estuarine) habitat and 0.37 acres of shading of shallow bay. The fill impacts would be compensated through purchase of credits at a 1:1 ratio at an approved mitigation bank and the shading impact would be compensated through funding of other projects that involve removal of existing unused overwater structures currently shading the Bay.

4.2. Natural Communities of Special Concern

The California Department of Fish and Wildlife maintains a list of natural communities of special concern based on laws regulating the development of such vegetation communities, their limited distribution, and/or special-status plants or animals occurring within such vegetation communities. All of these communities are of concern under NEPA and CEQA due to their function in support of listed and non-listed fish, wildlife, and plant species. Natural communities containing wetlands or waters of the United States are also regulated under the Clean Water Act (see further discussion in Section 4.1 above).

Table 4-3 includes the amount of each community that occurs within the study area, as well as the maximum potential permanent and temporary impacts as a result of project implementation.

Table 4-3. Summary of Impacts on Natural Communities of Special Concern

Community Type	Total Study Area (acres)	Permanent Impact Area (acres)	Temporary Impact Area (acres)
Tidal Salt Marsh	2.19	0.006	0.007
Seasonal Wetland	0.01	0.01	N/A
Eelgrass Beds	Limited area (TBD during subsequent design)	Limited area (TBD during subsequent design)	Limited area (TBD during subsequent design)
Northern Foredunes	1.10	0.18	0.04
Sandy Beach	1.91	0.08	0.10

Impacts to tidal salt marsh and seasonal wetland are discussed in Section 4.1 above. This section discussed impacts to eelgrass beds, northern foredunes, and sandy beach only.

4.2.1. Eelgrass Beds

Eelgrass (*Zostera marina L.*) beds occur in the shallow bay (estuarine) habitat and provide important nursery habitat and protection for many fish and invertebrate species, including herring. In addition, avian species including but not limited to least terns commonly forage in vegetated shallows.

Eelgrass is typically present on shallow, gradually sloping sand, sand/mud, and sand/shell debris habitats. Eelgrass beds stabilize shorelines by dampening the wave energy that transports sediment to and from the shore, preventing erosion. They also improve water quality by collecting and filtering organic matter and sediments. This filtering acts as a nutrient pump, transferring waterborne nutrients to the sediments and invertebrates. Eelgrass is easily affected by changes in water quality and turbidity. It is extremely dynamic, expanding and contrasting by as much as several hectares per season, depending on the quality of the site. Consequently, eelgrass beds can serve as an indicator community on the overall health of an estuary (SFOBB FEIS 2001).

4.2.1.1. SURVEY RESULTS

Surveys for eelgrass beds were not conducted for this project; however, as an element of the environmental mitigation required as compensation for impacts to eelgrass habitat from the SFOBB Project, Caltrans funded a large-scale Baywide Eelgrass Inventory and Resource Management Research Program. This jointly managed program by Caltrans and National Marine Fisheries Service (NMFS) included baywide eelgrass surveys and the development and testing of a baywide eelgrass monitoring program. In July 2013, Merkel And Associates, Inc. conducted a baywide regional monitoring program as an unfunded effort by extending survey work periods around a number of focused eelgrass investigations conducted concurrently. The final report, Eelgrass Distribution and Status within San Francisco Bay (Merkel and Associates, Inc., 2013) documents the results of the 2013 monitoring effort.

Eelgrass occurs adjacent to and possibly in a small portion of the project area in the shallow waters north of I-80, with some smaller occurrences south of I-80 adjacent to the project area, as shown on **Figure 7**. In total, there are approximately 68.3 acres of eelgrass beds adjacent to the project area. As eelgrass areas are somewhat dynamic, it is possible that the area of eelgrass within the project area could change over time, particularly on the north side of the project, which is adjacent to a large patch. Thus, this analysis assumes that some eelgrass is within the project area.

Construction of the path to Radio Beach could affect a small area of eelgrass if present at the time of construction along the path alignment where it is over water. In addition, the path structure could shade eelgrass if found in the path alignment where it is over water. The only way to absolute avoid eelgrass would be to not build the path to Radio Beach; the Passive Park Alternative would not include the path.

The bulk of the eelgrass beds on the north side of the project and the eelgrass areas south of the project southern shoreline could also experience temporary, indirect impacts from disturbed sediment from the project during construction of the path to Radio Beach on the north and the shoreline protection features on the south.

4.2.1.2. AVOIDANCE AND MINIMIZATION MEASURES

Avoidance and minimization measures and BMPs to protect water quality will be implemented to avoid direct or indirect effects to eelgrass beds in the vicinity of the proposed project to the greatest extent feasible. The implementation of the avoidance and minimization measures described in Section 4.1.1.2 above would avoid non-necessary impacts to eelgrass beds and surrounding habitats by implementing controls to prevent pollution or increased turbidity around Project impact locations.

4.2.1.3. PROJECT IMPACTS

The Project may directly impact a small portion of the eelgrass beds on the north side of the project due to construction of the path to Radio Beach. The exact amount of effect has not yet been determined and will ultimately depend on the exact area of eelgrass present at the time of construction of the path, which could be many years in the future, depending on funding. Thus, the amount of eelgrass present today may not accurately reflect the amount to actually be affected by the project.

Indirect effects to the eelgrass beds could also occur from the construction of the proposed project as a result of increased turbidity and sedimentation; however, the avoidance and minimization measures described for tidal wetlands above to protect water quality will be implemented to reduce these potential effects. The construction of the proposed project would avoid impacts to the eelgrass beds by implementing controls to prevent pollution and increased turbidity during construction. The phasing of the project construction is expected to further temporally fragment any temporary impacts that occur and reduce the magnitude of such impacts to eelgrass.

4.2.1.4. COMPENSATORY MITIGATION

If it is determined at a time neared to construction of the path to Radio Beach that eelgrass is in fact present in areas of disturbance for the pile-supported path, then compensatory mitigation should be provided. The compensation should be for the areal extent of eelgrass directly

displaced due to piled installed in eelgrass as well as the areal extent of eelgrass predicted to be shaded by the path. Given that the area of effect will likely be limited, since the path is close to shore, it is not recommended that a stand-alone eelgrass restoration effort should be made for such a small area. Instead, the compensatory mitigation should be to contribute funding to other broader eelgrass mitigation efforts on a per-acre basis for the area of this project's effect. Several existing options for compensatory mitigation exist including: 1) contribute funding to NMFS to be used for the same research and restoration purposes as the funding previously provided to NMFS as compensation for the Bay Bridge's eelgrass effects; and 2) contribute to the Coastal Conservancy's Creosote Piling Removal and Pacific Herring Restoration Project, which will also include eelgrass restoration.

4.2.1.5. CUMULATIVE IMPACTS

Cumulative impacts would result from projects in the San Francisco Bay that directly affect eelgrass beds within the Bay itself.

The East Span project affected approximately 3.6 acres of eelgrass. The East Span project mitigated for these effects by restoring sand and eelgrass habitat north of the Oakland Touchdown area, conducting a three-year pilot study of eelgrass restoration at the Eastshore State Park, and using unused funds from the pilot study to fund Bay-wide eelgrass research and restoration through NMFS (SFOBB BCDC Permit). According to the Oakland Army Base Reuse project EIR, the project would not result in impact to eelgrass beds.

Construction of the proposed project would avoid and minimize impacts to eelgrass beds present in the study area to the extent feasible. However, if eelgrass is present in the area beneath the alignment of the path to Radio Beach, then there may be direct removal and/or shading of small amounts of eelgrass on the southern edge of the larger patch of eelgrass north of the Bay Bridge. The proposed project could thus contribute to cumulative impacts on eelgrass, especially given that eelgrass is in very limited distribution in San Francisco Bay. As noted above, if the project is found to actually result in the loss of eelgrass, the project will compensate for any effects through contribution to other on-going eelgrass research and restoration projects.

4.2.2. Northern Foredunes

4.2.2.1. SURVEY RESULTS

An approximately 1.1 acre patch of northern foredunes is located on the shoreline of the project area at Radio Beach, north of I-80. The front ridge of the dune is populated with dune grass. Landward from this first ridge are ground-hugging mats of vegetation such as beach burr *(Ambrosia chamissonis)* and yellow sand verbena *(Abronia latifolia)* and dune strawberry (*Fragaria chiloensis*). Low growing shrubs such as sagewort (*Artemisia pycnocephala*) and tansy (*Tanacetum camphoratum*) also occur in foredunes.

This area does not support nesting habitat for shorebirds because of the existing level of human activity and disturbance, but northern foredune habitat represents suitable foraging habitat for shorebirds, including Western sandpipers (*Calidris mauri*), snowy plovers (*Charadrius alexandrines*), and California least terns (*Sterna antillarum*), and raptors such as the white-tailed kite (*Elanus leucurus*) and northern harrier (*Circus cyaneus*).

The northern foredune area does not support raptor nesting habitat because of the lack of trees to provide suitable nesting substrate, but the habitat does have the potential to support raptor foraging activities.

4.2.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

The avoidance and minimization measures described in Section 4.1.1.2 above also apply to northern foredunes in the project area.

4.2.2.3. PROJECT IMPACTS

Construction of the path to Radio Beach (Segment 5, 410-foot-long boardwalk) north of I-80 would result in permanent impact to 0.18 acres and temporary impact to 0.04 acres of northern foredunes.

Operationally, increased human presence has the potential to directly affect shorebird and raptor foraging habitat in this area, but humans would be restricted to the proposed trail. There is suitable shorebird foraging habitat less than 3 miles away at the Alameda Naval Air Station which is higher quality habitat than the northern foredune habitat that would be impacted by the proposed trail, because it also supports suitable shorebird nesting substrate. There is also additional suitable shorebird foraging habitat less than 3 miles away, north of the project, near the Berkeley Marina. Impacts to raptor foraging habitat would be negligible and discountable compared to the existing foraging habitat less than a half a mile away in the adjacent tidal marsh.

With the implementation of the avoidance and minimization measures described above in Section 4.1.1.2, the Project would avoid non-necessary impacts to northern foredunes by implementing controls to prevent erosion or sedimentation to surrounding northern foredunes outside of the proposed trail area, and would minimize its effect on northern foredune habitat by only impacting the minimum area necessary to construct the Project with sediment controls in place.

4.2.2.4. COMPENSATORY MITIGATION

As described in Chapter 1, the project includes restoration of the northern foredunes area through removal of non-native plants and planting of native coastal scrub plant species. This compensation would offset the permanent and temporary effects of the construction and placement of boardwalk.

4.2.2.5. CUMULATIVE EFFECTS

Cumulative impacts would result from construction of other general development projects in Alameda County. The project proponent is not aware of any future state or private activities that are reasonably certain to affect northern foredune habitat in the proximity of the project. Construction of the proposed project would have direct impacts on the northern foredunes present in the proposed trail footprint and the immediate surrounding area, but would not add to the cumulative loss of northern foredune habitats because the proposed restoration of this area would compensate for the minor loss due to the trail footprint. Additionally, implementation of the avoidance and minimization measures would reduce the project's contribution to potential indirect effects on northern foredune habitat. Therefore, the project would not have a cumulative adverse effect on northern foredunes.

4.2.3. Sandy Beach

4.2.3.1. SURVEY RESULTS

There is approximately 1.9 acres of sandy beach occurring at two locations in the project area. Approximately 1.4 acres of sandy beach occurs on the south side of Highway 1-80 where the kayak beach is proposed. The second location is approximately 0.5 acres and occurs north of I-80 in the Radio Beach area. As described in Chapter 3, the sandy beach areas provide potential foraging habitat for shorebirds, some of which are listed federal species like the Western snowy plover and some of which are protected under the Migratory Bird Treaty Act and/or California Fish and Game Code.

4.2.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

The avoidance and minimization measures in Section 4.1.1.2 and in Section 4.4.1.2 will also help to reduce impacts to this species, including environmental education, minimization of erosion and sedimentation, construction barriers around environmentally sensitive areas at Radio Beach, restoration and management of the on-site northern foredune and tidal marsh habitat, closure to Radio Beach use at night, prohibition of dogs at Radio Beach, raptor perching deterrence north of I-80 within park areas, and signage and environmental education concerning shorebird sensitivity.

4.2.3.3. PROJECT IMPACTS

Approximately 0.08 acres (3,800 sf) of sandy beach on the south side of I-80 will be permanently impacted by the construction of a 200-foot long by 18-feet wide kayak launch ramp on the south side of I-80. No direct effects would occur to the sandy beach areas on the north side of I-80 (Radio Beach).

As described in Chapter 3, no nesting habitat for shorebirds is present at any of the beach areas on the project site.

Increased human presence has the potential to directly affect shorebird and raptor foraging habitat at the sandy beach areas. However, shorebirds such as sandpipers, willets, and long-billed curlews are expected to continue to forage on the beach regardless of an increase in human activity. White-tailed kites, snowy plovers, and California least terns foraging could diminish as a result of increased human activity, however, the existing human activity may currently deter foraging by these species.

There is suitable shorebird foraging habitat less than 3 miles away, south of the project, at the Alameda Naval Air Station; which is potentially superior quality foraging habitat because it also supports suitable shorebird nesting habitat. There is also suitable shorebird foraging habitat less than 3 miles away, north of the project, near the Berkeley Marina. Additionally, there is suitable raptor foraging habitat less than a half a mile away in the adjacent tidal marsh on north side of I-80 (Emeryville Crescent).

4.2.3.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed for sandy beach (shorebird foraging) habitat due to the small area of effect (.08 acre), because extensive habitat will be retained for shorebirds on the project site, and due to the presence of existing suitable shorebird foraging habitat within 3 miles of the project.

4.2.3.5. CUMULATIVE EFFECTS

The East Span project is estimated to result in impacts to approximately 3 acres of sand flats. The project mitigation includes restoration of temporarily disturbed areas and creation of additional sand flat habitat (SFOBB BCDC permit). The Oakland Army Base redevelopment project, outside of Gateway Park, was not identified as having any effects on sandy beach habitat (City of Oakland 2002).

Cumulative impacts could also result from in-Bay sand mining (which removes sand material that can help sustain/form nearby sandy beach), and any other waterfront development in sandy beach areas throughout San Francisco Bay.

Construction of the proposed project would result in a minor (0.08 acre) loss of sandy beach, but would not add considerably to the cumulative loss of sandy beach habitats. Additionally, implementation of the avoidance and minimization efforts would reduce the project's contribution to potential indirect effects on sandy beach habitat.

4.3. Special-Status Plant Species

This section addresses the special status plant species that have the potential to occur within the study area and also addresses invasive plant species, which could result in adverse effects to special-status plant species and displace native plant species that provide shelter and forage for wildlife species. Three special status plant species that have the potential to occur within the study area. These include beach layia (*Layia carnosa*), blue coast gilia (*Gilia capitata* ssp. *chamissonis*), and California seablite (*Suaeda californica*). Habitat and impacts to these three species is summarized in **Table 4-4**.

Table 4-4. Summary of Impacts on Special Status Plant Species

Community Type	Habitat in Study Area (acres)	Permanent Impact Area (acres)	Temporary Impact Area (acres)
California seablite	2.2	N/A Species not found in botanical surveys to date	
Beach layia	1.1		
Blue coast gilia	1.1		

4.3.1. Survey Results

Suitable habitat for beach layia and blue coast gilia consists of coastal dunes (e.g., northern dunes) and the study area includes northern foredunes at Radio Beach. California seablite occurs in coastal salt marsh (tidal salt marsh) and wetland-riparian habitats (seasonal wetland), which occur within and adjacent to the study area.

Botanical surveys were conducted in summer 2014 for these three species. None of the three plant species were detected in summer 2014 surveys during the appropriate blooming season.

4.3.2. Avoidance and Minimization Efforts

Although the three subject plant species were not identified in site surveys to date, there is the possibility of colonization by these species in the future. The avoidance and minimization measures described above in Section 4.1.1.2 and the following measure will avoid impacts to special status plants that have potential to occur in the study area.

Prior to construction of Phase 3 of Park Development, Conduct Plant Surveys for Beach Layia, Blue Coast Gilia, and California Seablite between June 1 and September

Prior to construction of Phase 3 of park development, the project proponent will retain a qualified biologist to conduct plant surveys for three special status plant species - beach layia, blue coast gilia, and California seablite - between June 1 and September 1 (during the blooming

period (between June 1 and September 1) when construction activities are occurring in or adjacent to suitable habitat for these species. If any of these species are detected during surveys, the project proponent will consult with USFWS and CDFW to determine the appropriate avoidance and minimization measures to reduce potential impacts that could result from construction of the proposed project.

4.3.3. Project Impacts

If populations of these species occur in the future where public access improvements are constructed, they could be directly impacted by construction of the path to Radio Beach, which would result in minor loss of tidal wetland and northern foredunes habitat. However, as discussed above, the proposed on-site restoration would compensate for the loss of these habitat such that there would not be loss of habitat for these species overall. The avoidance and minimization measures described above will be implemented to avoid potential impacts to these species.

4.3.4. Compensatory Mitigation

No compensatory mitigation is proposed for special status plants because none of the three special status plants with potential to occur were detected during surveys. As described above, if any of these species are detected during surveys conducted prior to Phase 3 of construction, the project proponent will consult with USFWS and CDFW to determine the appropriate compensatory mitigation for impacts that result from construction of the proposed project, if any is necessary beyond the proposed restoration actions for tidal wetlands and northern foredunes described above.

4.3.5. Cumulative Impacts

Neither the East Span project nor the Oakland Army Base redevelopment project were identified as having any effects on the three special-status plant species with potential to occur on the Gateway Park Project (SFOBB FEIS 2001; City of Oakland 2002). While other development in tidal wetlands or northern foredunes in other parts of San Francisco Bay may affect these species, since the species are not present in the Gateway Project area, no cumulative impacts is identified.

4.4. Special-Status Wildlife Species

Based on a review of the USFWS and CNDDB lists, 15 special-status wildlife species were identified as having potential to occur in the project region. Following a survey of the habitats and characteristics within the site, five wildlife species were determined to have potential to

occur within the project site including California clapper rail (*Rallus longirostris obsoletus*), California black rail (*laterallus jamaicensis* ssp. *coturniculus*), California least tern (*Sternula antillarium browni*), western snowy plover (*Charadrius alexandrines nivosus*), and saltmarsh harvest mouse (*Reithrodontomys raviventris*). None of these special-status species was observed during the survey; however, suitable habitat for each occurred within or adjacent to the project site. **Table 4-5** summarized impacts to these five wildlife species.

Special-status fish species are discussed separately in Section 4.5 below.

Table 4-5. Summary of Impacts on Special Status Wildlife Species

Species	Habitat in Study Area (acres)	Permanent Impact Area (acres)	Temporary Impact Area (acres)
California clapper rail (foraging)	2.19 (tidal marsh)	0.006	0.007
California black rail (foraging)	2.19 (tidal marsh)	0.006	0.007
California least tern (foraging)	19.1 (bay)	0.24 (fill) 0.37 (shading)	0.10
Western snowy plover (foraging)	5.20 (sandy beach, northern foredunes, tidal marsh)	0.276	0.147
Northern harrier, Alameda song sparrow and saltmarsh common yellowthroat (foraging)	2.19 (tidal marsh)	0.006	0.007
Saltmarsh harvest mouse (low suitability habitat)	2.19 (tidal marsh)	0.006	0.007

4.4.1. California Clapper Rail

The California clapper rail (*Rallus longirostris obsoletus*) was listed as federally endangered on October 13, 1970 (FR 35, 16047). This species is also listed as a California state Fully Protected species. The classification of Fully Protected was the State's initial effort in the 1960s to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians and reptiles, birds and mammals. Please note that most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

California clapper rails occur almost exclusively in tidal salt and brackish marshes with unrestricted daily tidal flows, adequate invertebrate prey food supply, well developed tidal channel networks, and suitable nesting and escape cover as refugia during extreme high tides.

California clapper rails were historically abundant in all tidal salt and brackish marshes in the San Francisco Bay vicinity (Cohen 1895), as well as in all of the larger tidal estuaries from Marin to San Luis Obispo counties. The salt marshes of south San Francisco Bay, including portions of San Mateo, Santa Clara, and Alameda counties, supported the largest populations of California clapper rails (Grinnell 1915, DeGroot 1927, Williams 1929, Grinnell and Miller 1944). Gill (1979) identified the Napa River as a North Bay population center, which supported approximately 40 percent of the entire population (USFWS 2013). California clapper rails are now restricted almost entirely to the marshes of the Bay Area where the only known breeding populations occur.

Throughout their distribution, California clapper rails occur within a range of salt and brackish marshes. In south and central San Francisco Bay, and along the perimeter of San Pablo Bay, rails typically inhabit salt marshes dominated by *Salicornia pacifica* and *Spartina foliosa. Spartina* ssp. dominates the lower marsh zone (marsh plain) throughout the south and Central Bay. *Salicornia pacifica* dominates the middle and sometimes upper marsh zone throughout the South and Central Bay, with *Distichlis spicata*, *Jaumea carnosa* (fleshy jaumea), *Frankenia salinia* (alkali-heath), and others mixing with occasional *Salicornia pacifica* in the high marsh zone. *Grindelia stricta* var. *angustifolia* occurs along the upper edge of tidal sloughs throughout the entire San Francisco Bay Estuary.

Rail foraging and refugia habitat encompasses the lower, middle, and high marsh zones, as well as the adjacent transitional zone. Lower and middle marsh zones provide foraging habitat at low tide. Small tidal channels (*i.e.,* first- and second-order) with dense vegetation covering the banks are particularly important habitat features. These provide important foraging habitat and hidden routes for travel in close proximity to nesting habitat. Higher marsh areas (high marsh and transitional zones) with dense vegetation are used for nesting and high-tide refugia. Within tidal marshland in portions of north San Francisco Bay, the abundance of California clapper rails is positively correlated with channel density. Keldsen (1997) found that rails prefer locations with a greater number of tidal creeks, *Grindelia stricta* var. *angustifolia* shrubs, and higher elevations.

The quality of a marsh strongly influences the density of rail population it can support. Physical habitat characteristics critical to clapper rails include marsh size, location relative to other marshes, presence of buffers or transitional zones between marshes and upland areas with sufficient high tide refugia, marsh elevation, and hydrology. Denser rail populations exist where the habitat patch size is greater than 100 hectares (247 acres) (USFWS 2013).

Habitat loss due to human actions continues to be the greatest threat to the California clapper rail. Habitat loss and degradation that threatens California clapper rail is due to filling, levees, subsidence, changes in water salinity, non-native species invasions, nonnative species control, sea level rise associated with global climate change and contamination. In addition, habitat

suitability of many marshes is further limited by small size, fragmentation, and lack of other vital features such as sufficient escape habitat. California clapper rail populations have been declining since 2000 and fewer individuals exist today than when the species was listed (USFWS 2013).

4.4.1.1. SURVEY RESULTS

Suitable habitat for California clapper rails occurs adjacent to the project area, east of project fenceline, in the Emeryville Crescent. The narrow fringe of tidal marsh in the project area is too small and isolated to support California clapper rail nesting and breeding, but may support foraging activity.

For the purposes of this NES, the area of effect for California clapper rails, California black rails, and salt marsh harvest mouse includes the areas that could be directly or indirectly affected by project construction and operational activities. The area of effect boundary extends 700 feet beyond the project footprint into the adjacent tidal marsh from I-80 northward to the shoreline and takes into account potential indirect effects on the federally listed California clapper rail, California black rail, and salt marsh harvest mouse.

The tidal marsh adjacent to the project area is subject to an edge effect as a result of the existing level of human activity and disturbance immediately adjacent to this area. Edge effect is defined as follows: When edges are expanded into any natural ecosystem, and the area outside the boundary is a disturbed or unnatural system, the natural ecosystem can be seriously affected for some distance in from the edge.

4.4.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

The avoidance and minimization measures identified in Section 4.1.1.2 would also be implemented to avoid and minimize impacts on California clapper rail during construction. In addition, the avoidance and minimization measures listed below will be implemented to avoid and minimize direct and indirect impacts on California clapper rail during construction.

Remove all Vegetation by Hand and Install Construction Barrier Fencing around Environmentally Sensitive Areas in and adjacent to the Construction Area for the new path in the Radio Beach area

Before construction activities begin on the new path in the Radio Beach area, the project proponent or the construction contractor will remove all vegetation by hand in the tidal salt marsh area identified a qualified biologist or resource specialist, including areas that will be used for construction access. Vegetation clearing will be performed methodically from San Francisco Bay toward the upland area. Once vegetation within the exclusion zone areas is cleared and the areas are graded to remove any attractive habitat, exclusion fencing will be installed around these

areas to prevent potential re-entry of protected wildlife (salt marsh harvest mice, California clapper rail, California black rail) into these areas. The exclusion fencing will be a minimum of 2 feet tall with the bottom 4 inches of the fence buried. A USFWS-approved biologist will monitor the vegetation removal activities to ensure that no adjoining habitat is disturbed, and monitor the installation of exclusion fencing.

Conduct Protocol-Level Surveys Prior to Construction for California Clapper Rail and California Black Rail in the Adjacent Tidal Marsh to Determine Presence or Absence of this Species If Breeding Season Construction is proposed.

If construction is proposed during the breeding season for these two species, a Service-approved biologist will conduct protocol-level surveys for California Clapper rail and California black rail in the 700-foot area of effect in the adjacent tidal marsh habitat to determine presence or absence of these species. Surveys will be conducted during the rail breeding season (January 15-September 1) in accordance with the USFWS and CDFW protocols. If rails are detected during surveys, avoidance and minimization measures will be implemented per the following measure.

Establish 700-foot construction buffer around Occupied, Suitable California Clapper Rail and Black Rail Habitat in the Emeryville Crescent, if Construction Occurs During the Rail Breeding Season (January 15 to September 1)

If rails are detected during protocol-level surveys, and construction in the Radio Beach area is scheduled to occur during the rail breeding season, the Service-approved biologist, in coordination with USFWS and CDFW, will identify the location where environmentally sensitive exclusion fencing will be installed to establish a 700-foot construction buffer around California clapper rail and black rail detections. A 700-foot exclusion buffer around occupied, suitable rail habitat in which no construction activities can occur is a standard USFWS conservation measure for California clapper rails. The biological monitor will work with the contractor to ensure the construction fencing demarking where no construction activities can occur is at least 700 feet from occupied, suitable rail habitat.

Install Fencing Around Tidal Marsh Habitat East of the Project

The project proponent, or their construction contractor, will install protective fencing, of a design approved by USFWS and CDFW, around the off-site tidal marsh habitat east of Radio Beach to prevent all ingress. The fence shall extend from the access road underpass under I-80 westward to Radio Beach on the north side of the road and then shall be placed on the east-side of the road leading to the radio antennae.

Manage the On-site Northern Foredune and Tidal Marsh Habitat as a buffer between Radio Beach and Off-site Tidal Marsh Habitat.

The project proponent, or their construction contractor, will install a wooden beam and rail fence, around the on-site northern foredune and tidal marsh habitat and restoration area at Radio Beach to discourage encroachment into these habitats.

As described in the project description, the northern foredune and tidal marsh areas onsite at Radio Beach will be restored and the habitat protected. Signage prohibiting entry (except on established boardwalks/trails) and environmental education shall be provided at Radio Beach to inform the public of the environmental sensitivity of the sandy beach area (for shorebirds), the restoration/habitat area, and the adjacent off-site tidal marsh habitat.

Close Radio Beach to Entry at Night.

The project proponent, or their construction contractor, shall install a locked gate east of Radio Beach east of the access road to the radio towers that will allow Radio Beach to be closed to public entry at night in order to avoid disturbance to wildlife using the site and wildlife using the adjacent tidal marsh habitat. The path to Radio Beach from Key Point shall also be closed at night as well.

Prohibit Dogs from Radio Beach Area.

Dogs shall only be allowed on the path from Key Point leading to Radio Beach to the point where the trail ends being on rip-rap (i.e., just west of "little" Radio Beach). Dogs shall be prohibited from using the entire Radio Beach area.

Prohibit Installation of Lighting, Trees, or other Structures Potentially Suitable for Raptor Perching on the North Side of I-80 within Designated Park Areas.

No elevated structures, such as lighting poles, or trees, that can be used as raptor perches shall be installed within Gateway Park on the north side of I-80. This measure does not apply to fencing or rails along the path to Radio Beach or as part of on-site boardwalks or to required roadway signage. This measure does not apply to the areas currently used for radio towers. If elevated structures necessary to the park function and purpose, such as an environment kiosk are determined necessary to provide for habitat protection, then raptor perch deterrent measure (e.g., spikes) shall be placed on project components exceeding three feet tall adjacent to marsh habitat.

4.4.1.3. PROJECT IMPACTS

The avoidance and minimization measures described in Section 4.1.1.2 and in Section 4.3.1.2 above will be implemented to avoid direct and indirect impacts to California clapper rails.

California clapper rail breeding habitat will not be directly impacted by construction of the proposed project because no construction activity is proposed in the tidal marsh where suitable breeding habitat for these species occurs, and the proposed work would either occur outside of the California clapper rail breeding season or would adhere to a 700 foot buffer around suitable, occupied California clapper or black rail habitat. Exclusionary fencing will be installed to prevent the construction crew from inadvertently entering this environmentally sensitive area. The ambient noise levels at the project site are elevated because of the proximity of traffic crossing the Bay Bridge. This creates an edge effect that reduces the additional construction noise within the first several hundred feet of the adjacent tidal marsh to negligible and discountable compared to exiting ambient noise levels (Figure 7). Beyond the 200 foot edge effect boundary, there will be diminishing effects on California clapper rail (and black rail and salt marsh harvest mouse) habitat as a consequence of distance from the potential impact source.

Operationally, indirect effects from increased recreational activity in the Radio Beach area would occur. Indirect effects that could result in adverse effects to clapper rails include increased human activity sources that could disrupt the rails foraging and nesting behavior in adjacent tidal marsh areas, increased predation resulting from project components adjacent to marshes serving as unintentional raptor perches, and increased trash in the vicinity of the tidal marsh which can attract predators such as raccoons and foxes. However, as described above, the project includes new fencing to protect the offsite tidal marsh, restoration and protection of the on-site tidal marsh, raptor perch deterrent measures, signage to educate the public about the biologically sensitivity of the tidal marsh area, and prohibition of night-time access and of dog use at Radio Beach. With these measures in effect, the project is not expected to measurable diminish the value of off-site tidal marsh habitat for the California clapper rail due to indirect effects and will protect and enhance the foraging habitat in the restored tidal marsh habitat on-site.

4.4.1.4. COMPENSATORY MITIGATION

As described above, the loss of on-site tidal marsh habitat due to extension of a boardwalk through the on-site tidal marsh would be compensated through restoration and expansion of the on-site tidal marsh. Thus, no net loss of California clapper rail habitat would occur.

4.4.1.5. CUMULATIVE EFFECTS

Cumulative effects to California clapper rail would result from construction of other project in the vicinity of the Project in specific as well as other projects around San Francisco Bay that might also affect rail habitat.

Neither the East Span project nor the Oakland Army Base redevelopment project was identified as having any effects on California clapper rail (SFOBB FEIS 2001; City of Oakland 2002).

In general, numerous development projects are planned throughout the region, but many of these projects occur within already developed portions of land and would not affect the Bay or its margins. However, there may losses to California clapper rail that may occur. Restoration projects in various parts of the bay, such as the Hamilton Wetland Restoration Project, the Sears Point Project, and the South Bay Salt Pond Restoration Project are restoring salt ponds and subsided agricultural lands to tidal salt marsh, which will increase the amount of California clapper rail habitat within the San Francisco Bay.

Direct impacts on the tidal salt marsh present in the study area would be compensated through on-site restoration and thus the project would not add to the cumulative loss of tidal marsh habitat or, consequently, California clapper rail habitat. Operationally, the nearest project components to California clapper rail habitat are the boardwalk and walking trail east of Radio Beach, which would restrict people to the immediate project components through the use of fencing and signage. With implementation of the avoidance, minimization, and compensation measure, the proposed project would not contribute considerably to cumulative impacts on the species or its habitat.

4.4.2. California Black Rail

The California black rail (*Laterallus jamaicensis coturniculus*) is as a State of California Threatened Species and a Federal Species of Management Concern. California black rail (CBR) occur most commonly in tidal emergent wetlands dominated by pickleweed, or in brackish marshes supporting bulrushes in association with pickleweed. CBR are usually found in immediate vicinity of tidal sloughs and typically occurs in the high wetland zones near upper limit of tidal flooding, not in low wetland areas with considerable annual and/or daily fluctuations in water levels. During extreme high tides, CBR may depend on upper wetland zone and adjoining upland or freshwater wetland vegetation for cover. CBR breeding season occurs from February 15 through September 1.

The Black Rail thrives in extensive, flat “high” marsh, areas which usually occur between marshes with standing water and the dry upland. Areas with periodic fires seem unattractive to this rail and may put it in conflict with management practices designed to encourage other species. Development for recreation, human settlement, pollution, and farming also discourage the Black Rail. Habitat loss has been a primary factor in the Black Rail’s decline. The San Francisco Bay area has lost 85% of its tidal marshes, prime habitat for the California black rail (Goals Project 1999).

The majority of CBR (>90 percent) are found in the tidal salt marshes of the northern San Francisco Bay region, primarily in San Pablo and Suisun Bays. Smaller populations occur in San Francisco Bay, the Outer Coast of Marin County, freshwater marshes in the foothills of the

Sierra Nevada, and in the Colorado River Area. Loss of more than 80 percent of historic tidal marsh habitat, as well as habitat fragmentation and degradation, have directly and indirectly impacted this and other tidal marsh breeding species. Although there are few historic records of CBR presence and abundance in the Bay, recent survey efforts indicate that the species is absent from some marshes in the northern Bay region and that population sizes may be low enough to cause concern (Spautz et al. 2005).

4.4.2.1. SURVEY RESULTS

Suitable habitat for California black rails occurs in the same area described above for California clapper rail.

4.4.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

The avoidance and minimization measures described in Section 4.1.1.2 and in Section 4.4.1.2 will also avoid and minimize effects to California black rails.

4.4.2.3. PROJECT IMPACTS

The project impacts described above for California clapper rail apply equally to California black rail. In addition, the avoidance and minimization measures described above in Section 4.1.1.2 and Section 4.4.1.2 will be implemented avoid indirect impacts to California black rails.

4.4.2.4. COMPENSATORY MITIGATION

The compensatory mitigation proposed for tidal marsh above would avoid any net loss of California black rail habitat.

4.4.2.5. CUMULATIVE EFFECTS

The cumulative effects discussion above for California clapper rail and its habitat also applies to California black rail as a result of the proposed project.

4.4.3. California least tern

The least tern (*Sterna antillarum browni*) was federally protected as endangered on October 13, 1970 (35 FR 16047).

California least tern is the smallest North American tern found along the Pacific Coast, from San Francisco to Baja California. This species consumes small fish obtained by skimming ocean waters. Immediately prior to nesting, California least terns practice night-roosting, during which terns accumulate into colonies and pair with other individuals to mate with. Night-roosting occurs from mid-April to early May in areas with nesting habitat as well as habitats unsuitable for nesting but near (within 0.25-mile) nesting habitat. This species nests from mid-May to early August in unvegetated areas within coastal beach, sand dune, and mud-flat habitats in colonies

typically consisting of 25 pairs. Both night-roosting and nesting habitats are relatively near foraging habitat. Roosting away from the location were nesting occurs until eggs are actually laid increases the difficulty and time necessary for nocturnal predators to discover and predate upon nests (USFWS 2006).

California least tern are known to occur in coastal areas from San Francisco Bay to Baja California. This species' range appears to have always been discontinuous with large gaps associated with unsuitable habitat types. Nesting locations are known to occur within San Francisco Bay, the mouth of the Pajaro River in Santa Cruz County, Moss Landing in Monterey County, Santa Barbara County, Ventura County, Los Angeles County, Orange County, and San Diego County. Three nesting colonies (Pittsburg Power Plant, Albany Central Ave. Mitigation Island, and Alameda Point) have been found within San Francisco Bay, the northern extent of the species' range. Statewide, there were just above 500 breeding pairs (USFWS 2006) while approximately 355 breeding pairs were observed in 2007 within the Alameda Island colony (National Audubon Society 2011). The population of California least terns was most recently estimated to be approximately 7,100 individuals from observations made between 1989 and 2005. Generally, the breeding colony on Alameda Island has an upward trend, as an increase in the number of breeding pairs has been documented in all but two of the years from 1999 to 2007 (National Audubon Society 2011.)

The California least tern 5-Year Review (USFWS 2006) lists the primary factors in the decline of the species as being habitat loss due to human population increase and associated development within the species' range. Predation by native and non-native predators has also caused declines in the species' numbers. Habitat loss through invasive plant species colonizing areas of suitable nesting habitat has further reduced available nesting habitat. More recently, habitat disturbance through continual disturbance of beaches by pedestrians and pets has resulted in a reduction of nesting success (USFWS 2006).

4.4.3.1. SURVEY RESULTS

The California least tern has been historically observed roosting on the peninsula and feeding within 50 feet of the shoreline (City of Oakland 2002). California least terns have been observed flying through the project area or foraging on the Bay in proximity to the project site. There is no suitable nesting habitat for California least terns within the project area. This species may forage in adjacent bay habitat including in adjacent areas of eelgrass.

4.4.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

The avoidance and minimization measures in Section 4.1.1.2, including environmental education and minimization of erosion and sedimentation, will be implemented to reduce potential impacts to these species.

4.4.3.3. PROJECT IMPACTS

California least terns may forage over open water areas within the project and thus could be temporarily affected during construction of shoreline protection structures at Key Point, installation of the pier, and installation of the overwater portion of the path to Radio Beach. Due to construction noise and human presence, least terns may avoid the construction areas. Given project phasing, the area of open water construction at any one time will range from 0.24 acre during construction of the path to Radio Beach up to 0.45 acre (if the EBMUD outfall work and the Key Point pier are done simultaneously). Given the extensive amounts of suitable foraging habitat further offshore, including extensive areas of favored eelgrass foraging habitat outside the project area, the temporary construction disruption to foraging is not expected to substantially affect tern foraging success and welfare.

In-water construction could also result in limited amounts of turbidity in and adjacent to the immediate construction area, but given the limited scale of effects, this also is not expected to result in substantial foraging disruption.

The project will result in net fill of shallow bay habitat due to the EBMUD outfall protection, pilings for the pier, and piles for the elevated pathway and overwater shading due to the pier and the elevated pathway. Also, it is possible that the project may affect a small area of eelgrass for installation of the elevated pathway to Radio Beach.

As noted above, there is no suitable nesting habitat at the project site. The project will not affect the nearest known nesting area on the northern part of Alameda, which is approximately 2 miles away.

4.4.3.4. COMPENSATORY MITIGATION

The project effects to foraging habitat during construction would be temporary and limited in scale, so no compensation is necessary for this impact. As described above in Section 4.1.3.4, the permanent loss of foraging habitat due to fill and/or shading would be compensated through purchase of bay waters credit at an approved mitigation bank described above and effects to shading would be compensated through funding of removal of existing piles/unused docks. If eelgrass is determined to actually be affected by the project, compensatory mitigation would be in the form of funding for eelgrass restoration and research through other existing (or future) projects).

4.4.3.5. CUMULATIVE EFFECTS

The East Span project was identified as potentially resulting in direct mortality or injury to California least tern from pile-driving as well as affecting feeding success by affecting fish species habitat and temporarily reducing the quality of open water foraging habitat, affecting prey species through resuspension of contaminants during dredging, and temporary and permanent loss of eelgrass and intertidal sand habitat for the species. The project mitigated these affects through avoidance and minimization measures during construction, including use of a bubble curtain during pile driving, restoring sand and eelgrass habitat north of the Oakland Touchdown area, conducting a three-year pilot study of eelgrass restoration at the Eastshore State Park, and using unused funds from the pilot study to fund Bay-wide eelgrass research and restoration through NMFS (SFOBB USFWS Biological Opinion; SFOBB BCDC permit).

According to the Oakland Army Base Reuse project EIR, least terns have the potential to forage and roost in the study area. New Berth 21, if advanced would result in the net loss of approximately 27 acres of waters, which would represent a loss of potential forage habitat. The project would be required to compensate for any fill of the Bay. The Army consulted with the USFWS in 2000 and the USFWS concurred that disposal and reuse of the Oakland Army Base are not likely to adversely affect listed species, including the California least tern.

Operations and Maintenance dredging at the Port of Oakland may have temporary effects on foraging habitat in proximity to the nesting area on Alameda.

As discussed above, the project may result in direct impacts due to pile driving, temporarily disturb foraging habitat in near-shore waters during construction, and would result in permanent loss of foraging habitat due to the shoreline protection for the EBMUD outfall, fill and shading due to the Key Point pier, and fill and shading due to the path to Radio Beach. These impacts will be minimized and reduced through controls on pile driving and sedimentation during construction, compensation for loss of waters, and compensation for increased shading and impacts to eelgrass (if they occur). With implementation of these measures, the project should not contribute considerably to cumulative effects.

4.4.4. Western Snowy Plover

The Pacific Coast population of the western snowy plover (*Charadrius nivosus nivosus*) breeds along or near tidal waters and is behaviorally distinct from the interior population. Western snowy plovers have declined as a result of poor reproductive success, likely due to habitat loss, habitat alteration, human disturbance, and increasing predation pressure. In response to this decline, the U.S. Fish and Wildlife Service listed the Pacific Coast western snowy plover population as federally threatened in 1993.

This small shorebird typically occupies sandy beaches and intertidal areas of marine and estuarine habitats, but is known to occur in some inland areas. Along the Pacific Coast, snowy plovers are distributed on the mainland and offshore islands from southern Washington to southern Baja California, Mexico. Prey items consist of intertidal and supratidal invertebrates and feeding is diurnal.

Western snowy plover nest on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans in lagoons and estuaries and forage primarily in wet sand, salt ponds, salt pans, and marshes. In San Francisco Bay, nesting occurs in tidal marsh and salt pond areas in the south Bay and the North Bay. Snowy plovers have been observed foraging in other areas closer to the project, including at Crown Beach in Alameda. Snowy plovers have also been observed in San Francisco at Ocean Beach and at Crissy Field.

4.4.4.1. SURVEY RESULTS

There is suitable western snowy plover foraging habitat in the sandy beach and northern foredunes at Radio Beach and possibly in the tidal salt marsh on-site and adjacent to Radio Beach. No suitable nesting habitat is present within the project area due to limited extent of suitable sandy beach/dunes above high-tide and the generally disturbed character of the Radio Beach area.

4.4.4.2. AVOIDANCE AND MINIMIZATION EFFORTS

The avoidance and minimization measures in Section 4.1.1.2 and in Section 4.4.1.2, will also help to reduce impacts to this species, including environmental education, minimization of erosion and sedimentation, construction barriers around environmentally sensitive areas at Radio Beach, restoration and management of the on-site northern foredune and tidal marsh habitat, closure to Radio Beach use at night, prohibition of dogs at Radio Beach, raptor perching deterrence north of I-80 within park areas, and signage and environmental education concerning shorebird sensitivity.

4.4.4.3. PROJECT IMPACTS

Western snowy plover may forage in the sandy beach, northern foredunes, and tidal marsh onsite at Radio Beach and thus could be temporarily affected during construction of the improvements proposed at Radio Beach including minimal parking and a boardwalk. Due to construction noise and human presence, snowy plovers may avoid the construction areas. Given the limited extent of impacts to sandy beach, northern foredunes and tidal marsh during construction, the project is not expected to substantially affect tern foraging success and welfare.

The project will not result in a net loss of sandy beach, northern foredunes, or tidal marsh habitat. However, the increase recreational use of Radio Beach will, at times temporarily disrupt plover foraging activity at the sandy beach. The northern foredune and tidal marsh area will be fenced

off, which will maintain this area for undisturbed foraging. Signage and environmental education will be provided at Radio Beach to inform the public of the environmental sensitivity of the sandy beach area for shorebirds, including the western snowy plover, the restoration/habitat area, and the adjacent off-site tidal marsh habitat.

4.4.4.4. COMPENSATORY MITIGATION

The project effects to foraging habitat during construction would be temporary and limited in scale, so no compensation is necessary for this impact. On-site losses of northern foredune and tidal marsh habitat will be compensated through on-site restoration of these habitats. No loss of sandy beach is expected, so no compensatory mitigation is required for sandy beach.

4.4.4.5. CUMULATIVE EFFECTS

The East Span project was not identified as having any effect on snowy plovers (SFOBB FEIS 2001). According to the Oakland Army Base Reuse project EIR, snowy plovers may forage in the general vicinity of the redevelopment project, but that the redevelopment project area is unlikely to provide important habitat for this species (City of Oakland 2002).

Regionally, there may be other projects that affect foraging and/or nesting habitat for this species, but not in the immediate proximity to the Gateway Park project.

As discussed above, the project will temporarily disturb foraging habitat during construction, and permanent losses of foraging habitat will be replaced with on-site restoration. No sandy beach habitat will be lost. Increased recreational activity will be controlled through fencing of certain habitats, access restrictions at night and for dogs, and environmental education. With implementation of these measures, the project should not contribute considerably to any cumulative impacts to this species in the local area or region.

4.4.5. Northern Harrier, Alameda Song Sparrow and Saltmarsh Common Yellowthroat

The northern harrier (*Circus cyaneus*), a California Species of Special Concern, occurs in large, undisturbed tracts of wetlands and grasslands with low, thick vegetation. Northern harriers in the western United States tend to breed in dry, upland habitats. Habitat loss has contributed to reduced harrier populations as people have drained wetlands, developed land for large-scale agriculture, and allowed old farmland to become reforested. The small mammals that harriers prey upon have been reduced because of overgrazing, pesticides, and reduced shrub cover from crop field expansion. Because they eat small mammals, Northern Harriers are susceptible to the effects of pesticide buildup as well as direct effects by eating poisoned animals. In the mid-twentieth century their populations declined from contamination by DDT and other organochlorine pesticides, but rebounded after DDT restrictions went into effect in the 1970s (IUCN 2014).

The Alameda song sparrow (*M. m. pusillula*) is endemic to California, where it is restricted to tidal salt marshes on the fringes of south San Francisco Bay (Grinnell and Miller 1944). The largest concentrations occur in the tidal salt marshes near Dumbarton Point, Alameda County (Shuford and Gardali 2008). The distinctiveness of the Alameda song sparrow is based on morphology, plumage, and molecular markers (Spautz 2008). Currently, the Alameda song sparrow is confined to tidal salt marsh habitat located on the fringes of the south arm of San Francisco Bay east to El Cerrito, south to Alviso, and west to San Francisco. These sparrows are found in all relatively large marshes (e.g., Dumbarton Marsh, Palo Alto Baylands, Hayward Regional Shoreline, Emeryville, Alameda, San Leandro, San Lorenzo, and Coyote Creek) and in most remnant patches of marsh vegetation along sloughs, dikes, and levees, including some highly disturbed and urbanized sites (Shuford and Gardali 2008).). The largest concentrations probably occur in the tidal salt marshes near Dumbarton Point (Shuford and Gardali 2008). The breeding season for the Alameda song sparrow is late February through mid-August. The primary threat to the Alameda song sparrow is most likely the negative impact of invasive, non-native saltwater cordgrass (*Spartina alterniflora*) and related hybrids (*S. alterniflora* x *S. foliosa*; Takekawa et al. 2006). The non-native *Spartina* grows further down the tidal gradient than any native tidal marsh plant species; it also grows in the mid- to high-marsh zones, where it can displace native plants (Ayres et al. 1999). Alameda song sparrows occupy areas that have been invaded, but so far no bird has been found to have a *Spartina*-only territory (Shuford and Gardali 2008). Non-native *Spartina* reduces song sparrow reproductive success because nests placed in *Spartina* are at lower elevations relative to the tides and therefore are more likely to flood than nests placed in native vegetation (Shuford and Gardali 2008). Non-native *Spartina* may also be affecting Alameda song sparrows indirectly by facilitating an increase in numbers of marsh wrens (*Cistothorus palustris*), which are known nest predators and may be competing with the song sparrows for space and food resources. However, a major effort to eradicate non-native *Spartina* from the bay is currently underway and will likely confine the spread, if not completely eradicate the infestation (Spautz 2008).

The saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), also known as the San Francisco common yellowthroat, is a California species of special concern. The current range includes four main areas: coastal riparian and wetland areas of western Marin County, the tidal marsh system of San Pablo Bay, the tidal marsh system of southern San Francisco Bay, and coastal riparian and wetland areas in San Mateo County. Additionally, there are some disjunct populations: Stafford Lake, Marin County (Shuford 1993); Lake Merced, San Francisco County (unpubl. atlas data); and wet areas on San Bruno Mountain, San Mateo County (unpubl. atlas data). This yellowthroat occupies the ecotone between moist and upland situations, thus the proximity of various habitat types appears to enhance overall habitat suitability. In brackish and saline tidal marsh habitat around San Francisco Bay, yellowthroat abundance was positively associated with a high percent cover of rushes (*Scirpus* spp.), peppergrass (*Leipidium latifolium*),

and *Juncus*, height of the highest herbaceous plant, and vegetation density over 30 cm (Shuford and Gardali 2008). Habitat loss remains a minor threat to this warbler; losses of wetlands have slowed around the San Francisco Bay area and large-scale restoration projects are in progress or planned for the near future. Thus, degradation of remaining habitat is most likely the greatest threat to this warbler. Loss of wet areas from draining, flood control, and development may render habitat unsuitable (Guzy and Ritchison 1999). Changing land-use patterns can benefit native and non-native predators, impacting reproductive success and survival; even newly created habitat may suffer from landscape-level effects, such as those that support high populations of native and non-native predators.

4.4.5.1. SURVEY RESULTS

Surveys were not conducted for the northern harrier, Alameda song sparrow, or saltmarsh common yellowthroat. These species are not likely to occur within the on-site tidal marsh, which provides only poor foraging habitat (and not breeding habitat) due to its limited size and proximity to the high level of ambient noise from the Bay Bridge. However, the off-site tidal marsh area east of Radio Beach is suitable habitat that could be used for foraging and nesting by Alameda song sparrow, or saltmarsh common yellowthroat, and foraging by northern harrier.

4.4.5.2. AVOIDANCE AND MINIMIZATION EFFORTS

The avoidance and minimization measures in Section 4.1.1.2, Section 4.4.1.2, and Section 4.8.2 will be implemented to reduce potential impacts to these species.

4.4.5.3. PROJECT IMPACTS

Northern harrier is unlikely to forage over the open areas within the project and not likely to nest within the project, due to the constant noise and human disturbance associated with I-80, as well as the lack of suitable grassland nesting substrate. The tidal marsh in the study area is poor foraging habitat because of its limited size and proximity to the high level of ambient noise from the Bay Bridge. Northern harriers rely on their hearing for foraging more than other raptors, so the existing ambient noise levels are likely to deter foraging in the tidal marsh areas adjacent to I-80. Further, northern harriers are not expected to nest within the ruderal vegetation within the project, due to the noise and human disturbance from I-80, as well as the lack of suitable grassland. Northern harriers may forage in the adjacent tidal marsh, known as the Emeryville Crescent. The Proposed Project, with avoidance and minimization measures implemented, is not expected to substantially affect Northern harriers.

Approximately 0.013 acre of tidal salt marsh habitat, where foraging habitat occurs for Alameda song sparrow and Saltmarsh yellowthroat, will be directly impacted (permanent and temporarily) by the proposed project. However, as described above, the on-site tidal marsh will be restored and expanded to ensure no net loss of tidal marsh habitat.

Indirect effects to Alameda song sparrow and Saltmarsh yellowthroat from construction and from increased recreational activity in the Radio Beach area could occur. Indirect effects that could result in adverse effects to Alameda song sparrow and the Saltmarsh common yellowthroat include increased human activity, which could disrupt the sparrows foraging and nesting behavior in off-site areas, increased trash in the vicinity of the tidal marsh, which can attract predators such as raccoons and foxes, and increased raptor perching opportunity. However, the project includes minimization measures for construction and new fencing, signage to educate the public about the biologically sensitivity of the tidal marsh area, raptor perch deterrence, and prohibition of night-time and dog access. With the implementation of the avoidance and minimization measures, the indirect effects during construction and operation of the proposed project is not expected to substantially affect the Alameda song sparrow or Saltmarsh common yellowthroat.

4.4.5.4. COMPENSATORY MITIGATION

No additional compensatory mitigation would be necessary for potential effects to northern harrier, Alameda song sparrow, or saltmarsh common yellowthroat. As described above, on-site tidal marsh restoration will avoid any net loss of foraging habitat for these species.

4.4.5.5. CUMULATIVE EFFECTS

The cumulative effects discussion for nesting birds in Section 4.8.5 also applies to northern harrier, Alameda song sparrow, and saltmarsh common yellowthroat.

4.4.6. Salt Marsh Harvest Mouse

The salt marsh harvest mouse (*Reithrodontomys raviventris*) was listed as federally endangered on October 13, 1970 (FR 35 16047). The salt marsh harvest mouse was listed by the State of California as endangered in 1971 and it is a CDFW Fully Protected Species (USFWS 2013). The classification of Fully Protected was the State's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. The Fish and Game Code sections dealing with Fully Protected species state that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected" species, although take may be authorized for necessary scientific research. This language arguably makes the "Fully Protected" designation the strongest and most restrictive regarding the "take" of these species.

The salt marsh harvest mouse is a rodent in the family Muridae (subfamily Sigmodontinae). As described in the *Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California* (Recovery Plan) (USFWS 2013), there are two subspecies of salt marsh harvest mice: the northern salt marsh harvest mouse (*Reithrodontomys raviventris halicoetes*) lives in the marshes

of the San Pablo and Suisun Bays, and the salt marsh harvest mouse (*Reithrodontomys raviventris raviventris*) is found in the marshes of Corte Madera, Richmond, and South San Francisco Bay. This species is generally restricted to saline (salty) or brackish (somewhat salty) marsh habitats around the San Francisco Bay Estuary, and is found in mixed saline/brackish areas in the Suisun Bay area and has been found in one brackish area in the southern South San Francisco Bay (Shellhammer et al. 2006).

The basic habitat of the salt marsh harvest mouse has been described as *Salicornia*-dominated vegetation (Dixon 1908; Fisler 1965). Other highly important habitat considerations include high tide/flood refugia of emergent *Grindelia* (gumplant; both at the upper edge of the marsh and within mature marshes, even at the highest high tides), seasonal use of terrestrial grassland, exploitation of suboptimal habitats, and habitat selection in brackish marsh vegetation where *Salicornia* is a relatively minor component, as often is the case in Suisun Bay marshes. Studies conducted jointly by CDFW and the DWR have shown that salt marsh harvest mouse populations are supported equally in mixed-halophyte and *Salicornia* microhabitats (USFWS 2013).

Habitat loss due to human actions is the greatest threat to the salt marsh harvest mouse. Habitat loss that threatens the salt marsh harvest mouse is due to filling, diking, subsidence, changes in water salinity, non-native species invasions, sea level rise associated with global climate change and pollution. In addition, habitat suitability of many marshes is further limited by small size, fragmentation, and lack of other vital features such as sufficient escape habitat. Larger tracts of high quality habitat are needed to maintain stable populations over time.

Habitat fragmentation occurs when tidal marsh habitat, once extensive and contiguous, is divided into relatively small discontiguous fragments. Fragmentation complicates the impact of habitat loss by reducing tidal marsh populations, not to one contiguous population a tenth of its former size, for example, but to many isolated tiny populations on habitat fragments of varying size, shape, and condition. In addition to the difficulty of supporting a viable population on a habitat fragment of limited area, marsh fragments may lack the full range of habitat features needed by a species throughout its life cycle. For example, a fragment might contain feeding and nesting habitat for the salt marsh harvest mouse, but completely lack refuge from high tides or storm surges (USFWS 2013).

4.4.6.1. SURVEY RESULTS

Salt marsh harvest mouse are known to occur in the tidal salt marsh known as the Emeryville Crescent, which is adjacent to the project area east of Radio Beach. The narrow area of tidal salt marsh onsite within the project area is small and partially isolated and thus may not be sufficient to support a viable mouse population. Nevertheless, the on-site habitat is treated as low suitability habitat as a precaution.

4.4.6.2. AVOIDANCE AND MINIMIZATION EFFORTS

The avoidance and minimization measures described in Section 4.1.1.2 and Section 4.4.1.2 for will help to reduce impacts to salt marsh harvest mice and their habitat.

4.4.6.3. PROJECT IMPACTS

With implementation of the proposed avoidance and minimization measures, off-site salt marsh harvest mouse habitat will not be directly impacted by the proposed project. As a precaution despite the low probability of encountering salt marsh harvest mice on-site, exclusionary fencing shall be placed around tidal marsh habitat during construction and removal of vegetation necessary for boardwalk/trail construction will be conducted by hand to ensure that no take of individual salt marsh harvest mice will occur.

Indirect effects during operation of the project from increased recreational activity in the Radio Beach area could occur. However, the project includes new permanent fencing around tidal marsh, signage to educate the public about the biologically sensitivity of the tidal salt marsh area, prohibition of night-time and dog access, and raptor perch deterrence. With the implementation of the avoidance and minimization measures described above, the potential indirect effects on the salt marsh harvest mouse will be reduced and/or avoided.

4.4.6.4. COMPENSATORY MITIGATION

No additional compensatory mitigation would be necessary for potential effects to salt marsh harvest mice. As described above, on-site tidal marsh restoration will avoid any loss of low-suitability habitat for these species.

4.4.6.5. CUMULATIVE EFFECTS

Neither the East Span project nor the Oakland Army base reuse project was identified as affecting salt marsh harvest mice or habitat (SFOBB FEIS 2001; City of Oakland 2002).

Cumulative effects would result from construction of other general development projects along the San Francisco Bay and the immediate vicinity of the Project. In general, numerous development projects are planned throughout the region, but many of these projects occur within already developed portions of land and would not affect the Bay or its margins. Development in and along the San Francisco Bay has resulted in habitat loss and degradation, excess sedimentation, and increased erosion of salt marsh habitat in the past. Projects around the San Francisco Bay that would affect salt marsh harvest mouse habitat could affect the species if it is present, and could affect future opportunities to occupy suitable habitat.

As noted previously, there are a number of substantial restoration projects including, the Hamilton Wetland Restoration Project, the Sears Point Project, and the South Bay Salt Pond Restoration Project, among others, that are currently restoring salt ponds or subsided agricultural lands to tidal salt marsh, which will increase the amount of salt marsh harvest mouse habitat within the San Francisco Bay.

Construction of the proposed project would mitigate for direct impacts on the tidal salt marsh present in the study area and would not add to the cumulative loss of tidal marsh habitat or, consequently, salt marsh harvest mouse habitat. Operationally, the nearest project components to salt marsh harvest mouse habitat are the boardwalk and walking trail east of Radio Beach, which would restrict people to the immediate project components through the use of fencing and signage. The implementation of raptor perch deterrents as required by the avoidance and minimization measures in Section 4.4.1.2 would prevent increased predation on salt marsh harvest mouse by raptors resulting from the construction of the project and its components. With implementation of the avoidance, minimization and compensatory mitigation measures, the proposed project is not anticipated to contribute considerably to cumulative effects on the species or its habitat in the region.

4.5. Special-Status Fish Species

Five special-status fish species could occur in the project study area: central California coast steelhead, green sturgeon, Central Valley spring-run Chinook salmon, and Sacramento winter-run Chinook salmon, and longfin smelt (**Table 4-6**). The life history requirements of the species are discussed below. Critical habitat for green sturgeon falls within the study area. Also, essential fish habitat (EFH) for Pacific salmon, Pacific groundfish and coastal pelagic species falls within the study area, which is discussed separately in Section 4.6.

Table 4-6. Summary of Impacts on Special-Status Fish Species

Fish Species	Habitat in Study Area (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)
Central California coast steelhead	19.1 acres	0.24 (fill) 0.37 (shading)	Areas adjacent to permanent effect area, in particular due to pile driving
Central Valley spring-run Chinook salmon			
Sacramento winter-run Chinook salmon			
Green sturgeon			
Longfin smelt			

4.5.1. Central California Coast Steelhead

Central California coast steelhead was listed as threatened by NMFS on August 18, 1997 (62 FR 43938). There is no state status. Central California coast steelhead includes populations from the Russian River to Aptos Creek and the drainages of San Francisco and San Pablo Bays eastward to the Napa River. The project area is not designated as critical habitat for steelhead (70 FR 52488 September 2, 2005).

Central California coast steelhead generally enter fresh water between November and April. The preferred migration temperatures for steelhead range between 46 and 52ºF (National Marine Fisheries Service 2000). Spawning generally begins in December.

During spawning, the female digs a redd (gravel nest), into which the eggs are deposited and then fertilized by the male. Steelhead prefer substrate no larger than 10 centimeters (Bjornn and Reiser 1991). Steelhead spawn in cool, well-oxygenated water. Optimal water temperatures for spawning and incubation range between 39 and 52ºF (Myrick and Cech 2001). Incubation lasts from 1.5 to 4 months, depending on water temperature (Moyle 2002).

Juvenile steelhead feed on a variety of aquatic and terrestrial insects and other small invertebrates. Steelhead smolts emigrate from March to May. Ocean rearing lasts 2–3 years.

Instream and overhead cover in the form of undercut banks, downed trees, and overhanging tree branches is important for juvenile rearing. The addition of cover increases spatial complexity and may increase productivity. Fine-textured instream woody material provides the hydraulic diversity necessary for selection of suitable velocities, access to drifting food, and escape refugia from predatory fish (Raleigh et al. 1984). Juvenile rearing success is assumed to decline at water temperatures ranging from 17 to 25ºC (Raleigh et al. 1984).

4.5.1.1. SURVEY RESULTS

No fish surveys were conducted. However, the action area provides migratory habitat for adult and juvenile steelhead. Steelhead spawn in tributaries that connect directly to San Francisco Bay. Because adult steelhead migrate through San Francisco Bay to upstream spawning grounds, some steelhead may move through the action area as adults while moving through San Francisco Bay. Adult steelhead are expected to migrate through the central San Francisco Bay between December and February. Juvenile emigration through central San Francisco Bay is expected to occur from January through April, with February through April being the peak months.

4.5.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

Implementation of the avoidance and minimization measures described in Section 4.1.1.2 and the avoidance and minimization identified below would minimize effects of the proposed project on central California coast steelhead habitat adjacent to the construction area.

Implement Pile Driving Noise Reduction Measures to Minimize Impacts on Special-Status Fish Species

- The project proponent or its contractor will ensure the following noise reduction measures are implemented during construction activities involving pile driving.
- Conduct all pile driving between June 1 and November 30 to avoid the primary steelhead migration season (December–June) in the project area. Because of the potential for steelhead adults and juveniles to begin their migration earlier than December 1, the project proponent or its contractor will conduct all pile driving activities as early as possible during the June 1–November 30 window.
- Vibrate all piles to the maximum depth feasible before using an impact hammer. During impact driving, the contractor will limit the number of strikes per day to the minimum necessary to complete the work.
- Use the smallest pile driver and minimum force necessary to complete the work.
- Use a bubble ring or similar device to minimize the extent to which the interim peak and cumulative SEL thresholds are exceeded.
- Avoid all pile driving activity at night.

4.5.1.3. PROJECT IMPACTS

The proposed project could affect steelhead during construction and operations as discussed below.

Effects on Water Quality during Construction

The assessment of water quality addresses the effects of both sediment and contaminants on steelhead and their habitat. Activities associated with pile driving for the new pier and installation of shoreline protection for the EBMUD outfall that is placed below the ordinary high water mark (OHWM) could impact water quality in the surrounding areas. Excessive sediment deposited in or near the Bay can degrade aquatic habitats. Increased turbidity can increase fish mortality; reduce feeding opportunities for fish, including rearing steelhead; and cause fish to avoid important habitat. Contaminants include toxic substances, such as metals, petroleum products, pesticides, fertilizers, sewage, and uncharacteristically high sediment loading. Construction materials, such as concrete, sealants, oil, and paint, could adversely affect water quality if accidental spills occurred during project construction. Increased pollutant

concentrations could limit fish production, abundance, and distribution by direct mortality of fish or their prey. Steelhead in the study area require relatively clean, cold, well-oxygenated water for successful growth, reproduction, and survival and are not well adapted for survival in degraded aquatic habitats.

Implementation of the avoidance and minimization measures for sedimentation (Section 4.1.1.2) would reduce sedimentation from entering the Bay.

Disturbance and Direct Injury during Construction, including Pile Driving

Noise, vibrations, artificial light, and other physical disturbances can harass fish, disrupt or delay normal activities, and cause injury or mortality. The potential magnitude of effects depends on a number of factors, including the type and intensity of the disturbance, proximity of the action to the water body, timing of actions relative to the occurrence of sensitive life stages, and frequency and duration of activities. For most activities, the effects on fish would be limited to avoidance behavior in response to movements, noises, and shadows caused by construction personnel and equipment operating adjacent to the water body. However, survival may be altered if disturbance causes fish to leave protective habitat (i.e., increased exposure to predators) or is of sufficient duration and magnitude to affect growth and spawning success. Injury or mortality may result from direct and indirect contact with humans and machinery, sound pressure, and physiological stress.

Project actions that cause no direct harm but might temporarily disturb fish include movement of construction equipment and personnel and lighting for in-water work.

The proposed project includes the installation of various types of piles that will be driven with an impact pile driver, which can result in direct injury or mortality to fish. Pile driving in water produces underwater sound that can affect fish. The Caltrans Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish (2009) provides a thorough discussion of this issue including detailed definitions of terminology and measurement metrics.

The following three metrics are commonly used in evaluating hydroacoustic impacts on fish and are expressed in terms of decibels relative to 1 micro-pascal (Refer to the Caltrans 2009 for definitions of these terms):

- Peak sound pressure level (Lpeak).
- Root mean square (RMS).
- Sound exposure level (SEL).

The concept of cumulative SEL is used in pile driving noise impact analysis as well. The cumulative SEL is calculated by taking 10 times the logarithm of the number of pile strikes *that are expected to occur in one day* and adding that value to the single strike SEL. For example, if it takes 1,000 strikes to install a pile or several piles in one day and the single strike SEL is 175 dB, the cumulative SEL is calculated as follows.

$$SEL_{cumulative} = 175 + 10\log(1{,}000) = 175 + 30 = 205 \text{ dB}$$

Over the last 10 years, criteria for evaluating potential effects on fish from sound generated by pile driving have evolved as a result of work conducted by the Fisheries Hydroacoustic Working Group (FHWG). This group includes representatives from the Federal Highway Administration (FHWA), departments of transportation in Oregon and Washington, National Oceanic and Atmospheric Administration Fisheries (NMFS) (Southwest), NOAA Fisheries (NMFS) (Northwest), United States Fish and Wildlife Service, the California Department of Fish and Wildlife, and the Unites States Army Corps of Engineers. Technical fisheries and noise experts also participate in the FHWG.

A meeting of the FHWG in June 2008 resulted in the Agreement in Principal for Interim Criteria for Injury to Fish from Pile Driving Activities (Fisheries Hydroacoustic Working Group 2008). The agreed upon criteria identify sound pressure levels of 206 dB peak and 187 dB cumulative SEL for all listed fishes except those weighing less than 2 grams. For such fishes, the criterion for the cumulative SEL is 183 dB. These criteria are for impact pile driving only.

NMFS also uses 150 dB-RMS as a threshold for behavioral effects. Although this threshold is commonly evaluated, to date NMFS has not required implementation of attenuation systems where exceedance of 150 dB-RMS is indicated.

Sound attenuates as it travels over distance from the pile. The rate that sound attenuates can vary widely depending many factors including the type of pile, type of hammer, substrate conditions, etc. NMFS recommends a rate of attenuation of 4.5 dB per doubling of distance unless data supporting other rates can be provided.

Source levels are typically expressed as a sound level at a distance of 10m. If sound attenuates at a rate of 4.5 dB per doubling of distance and a pile driver produces a sound level of 180 dB at 10 m, the sound level at 20m would be 175.5 dB, at 40m it would be 171 dB and so on.

The impact analysis is done by determining the distance within which the injury criteria are expected to be exceeded. This is calculated based on the rate of sound attenuation and the source level.

The attenuation rate discussed above is generally typical for an open water situation such as in a bay. Underwater noise source levels were developed from empirical data from other projects reported in Caltrans' Technical Guidance Manual for the Assessment of the Hydroacoustic Effects of Pile Driving on Fish (Caltrans 2009). The manual provides source data for 24-inch concrete piles, 12-inch steel H piles, 36-inch steel pipe piles, 30-inch steel pipe piles, and 24-inch steel AZ sheet piles.

Table 4-7 calculates the noise level according to the NMFS pile driving calculator. **Table 4-8** summarizes the results of the analysis. Two primary scenarios have been evaluated: one in which all piles are driven in one day and one in which the piles are driven over two days. The table shows the distances within which the injury criteria are expected to be exceeded under these two scenarios.

Table 4-7. Pile Driving Noise Level Analysis (NMFS Pile Driving Calculator)

	Acoustic Metric			
	Peak	**SEL**	**RMS**	**Effective Quiet**
Measured single strike level (dB)	180	155	165	150
Distance (m)	10	10	10	
Estimated number of strikes	4500	3900	4000	3200
Cumulative SEL at measured distance	191	191	191	190
	Distance (m) to threshold			
	Onset of Physical Injury			Behavior
	Peak	Cumulative SEL dB**		RMS
	dB	Fish ≥ 2 g	Fish < 2 g	dB
Transmission loss constant (15 if unknown)	206	187	183	150
15	0	20	22	100
15	0	18	22	100
15	0	19	22	100
15	0	16	22	100

Table 4-8. Summary of Pile Driving Noise Levels

Pile type[1]	Location[2]	Max. Total per day	Total Number of strikes/Day	Cumulative SEL at 10 m	Cumulative SEL dB (187 dB) for fish >= 2 grams
24-inch concrete octagonal pile	Pier and elevated bike path to Radio Beach	5	4,500	197[3] 192[4]	20m to threshold[3] 43m to threshold[4]
Thin steel H pile	Pier and elevated bike path to Radio Beach	6	3,900	196[3] 191[4]	18m to threshold[3] 39m to threshold[4]
40-in steel pipe pile (closed end)	Pier and elevated bike path to Radio Beach	5	4,000	216[3] 211[4]	399m to threshold[3] 860m to threshold[4]
30-in CISS pipe pile	Pier and elevated bike path to Radio Beach	4	3,200	212[3] 207[4]	217m to threshold[3] 468m to threshold[4]

[1] The pile types shown are typical piles for an installation similar to the proposed project. Each pile type is associated with a specific number of strikes per day to drive it into a substrate such as is found at the proposed project area.

[2] Piles for all project areas are shown together.

[3] Without attenuation.

[4] With attenuation such as a bubble curtain or for piles driven on land.

The cumulative SEL 10 meters away from pile driving is 191 dB to 216 dB (1 day) respectively. These numbers exceed the threshold of 187 dB for fish >= 2 grams. The spreadsheet model calculates a cumulative SEL of 187 dB (including both with and without attenuation) at a distance ranging from 18 meters from the pile to a maximum distance of 860 meters (depending on pile type and attenuation) where the potential injury of fish would occur, assuming that fish remain in this zone for an entire day of pile driving. In this case, the maximum distance of 860 meters is limited by the distance to the "effective quiet" SEL, which is the distance at which the single-strike SEL attenuates to 150 dB. Beyond this distance, no physical injury is expected regardless of the number of strikes.

Based on these computations, peak sound levels generated by pile driving activities will be outside of the established thresholds for the protection of fish. Cumulative sound levels sufficient to cause potential injury to fish would occur within 860 meters of pile driving activities. This assumes that fish would remain in this zone for an entire day of pile driving operations, which is worst case scenario. Therefore, pile driving is expected to result in adverse effects to any steelhead that may be in the project area during construction. Proposed avoidance and minimization measures described above will help to reduce, but will not avoid this impact.

Effects on Fish Habitat during Operations

The proposed project would result in the permanent loss of aquatic habitat area, including foraging and rearing habitat for juvenile steelhead. Installation of shoreline protection for the EBMUD outfall, piles for the new pier, and piles for the path to Radio Beach would result in a net permanent habitat loss (up to 0.24 acre) as well as shading effects (up to 0.37 acre). The net loss in aquatic area due to fill and shading is small compared to the total area of existing habitat in the study area but compensatory mitigation described above will result in no net loss of bay habitat and no net increase in shading. The project is not expected to have long-term effects on steelhead migration and foraging habitat.

4.5.1.4. COMPENSATORY MITIGATION

The compensation described above for mitigation of loss of shallow bay (see Section 4.1.3.4) due to fill and shading effects will help to ensure no net loss of habitat for steelhead. No additional compensatory mitigation is proposed for steelhead.

4.5.1.5. CUMULATIVE EFFECTS

Cumulative impacts could potentially result from infrastructure projects in the immediate vicinity of the Project, operational and maintenance dredging, development projects that encroach on bay habitat, restoration projects, in combination with project effects.

The recent installation of the eastern span of the new Bay Bridge and the removal of the old Bay Bridge is the primary project that affects the Bay and its margins nearest the Gateway Park Project. The effects on habitat due to construction were described above in Section 4.1.3.5. Construction impacts, including pile-driving, were identified as having the potential for fish injury or death during construction.

The East Span project also included a substantial mitigation program concerning impacts to bay habitat including avoidance and minimization practices during construction (including attenuation requirements during pile driving and explosive demolition) and removal the prior east span, on-site restoration of 3 acres of sand flats and eelgrass beds, off-site eelgrass restoration, funding of an off-site mitigation program to restore shallow water submerged land and wetland habitat (including support for restoration actions at Skaggs Island; habitat restoration at Eastshore State Park, and funding for eelgrass restoration program) (SFOBB BCDC Permit).

The redevelopment of the Oakland Army Base, which is adjacent to the Gateway Park project, would result in the net loss of approximately 27 acres of open and covered water due to the New Berth 21 element of the redevelopment plan, which would also provide habitat for steelhead. Mitigation adopted by the City of Oakland includes compliance with Corps, RWQCB, USFWS/NMFS, and CDFW requirements for all bay fill (City of Oakland, 2002).

Operations and maintenance dredging and disposal at various locations throughout the Bay would temporarily impair water quality and habitat for steelhead, although dredging is only conducted under permit which required timing of such activity outside of peak steelhead migration seasons.

While other development projects are planned throughout the region, many of these projects occur within already developed portions of land and would not affect the Bay. Where development projects are proposed in areas of bay, they would be required by federal (USACE) and state (RWQCB, BCDC) permitting requirements to result in no net loss of bay habitats and no net increase in shading. In addition, there are numerous efforts throughout San Francisco Bay to restore bay habitats including open water habitat that would benefit steelhead. Examples include the Hamilton Wetland Restoration Project and the Sears Point Project in San Pablo Bay and the South Bay Salt Pond Restoration Project in southern San Francisco Bay, among others.

In combination with cumulative projects described above, the project would contribute to cumulative impacts on bay (estuarine) habitat due to the project's permanent, direct impacts on up to 0.24 acres shallow bay (estuarine) habitat and up to 0.37 acres of shading of shallow bay. The fill impacts would be compensated through purchase of credits at a 1:1 ratio at an approved mitigation bank and the shading impact would be compensated through funding of other projects that involve removal of existing unused overwater structures currently shading the Bay.

4.5.2. Central Valley Spring-Run Chinook Salmon and Sacramento Winter-Run Chinook Salmon

Spring-run Chinook salmon (*Oncorhynchus tshawytscha*) were listed as threatened on September 16, 1999 (64 FR 50393). On February 5, 1999, the California Fish and Game Commission listed spring-run Chinook as threatened under the California Endangered Species Act (CESA). Critical habitat for spring-run Chinook salmon includes the mainstem Sacramento River, several tributaries of the upper Sacramento River, the Delta and Yolo Bypass, and the Feather, Yuba, American, and Bear Rivers (70 FR 52599).

Spring-run Chinook salmon enter the Sacramento River from late March through July (Reynolds et al. 1993), but peak abundance of immigrating adults in the Delta and lower Sacramento River occurs from April through June. Adult spring-run Chinook salmon remain in deep-water habitats downstream of spawning areas during summer until their eggs fully develop and become ready for spawning. This is the primary characteristic that distinguishes spring-run Chinook salmon from the other runs. Spring-run Chinook salmon spawn primarily upstream of the Red Bluff Diversion Dam and in the aforementioned tributaries. Spawning occurs from mid-August through early October (Reynolds et al. 1993). A small portion of an annual year-class may emigrate as post-emergent fry (less than 45 mm long) and reside in the Delta undergoing

smoltification. However, most are believed to rear in the upper river and tributaries during winter and spring, emigrating as juveniles. The timing of juvenile emigration from the spawning and rearing reaches can vary depending on tributary of origin and can occur from November through June.

The only streams in the Central Valley with remaining wild spring-run Chinook salmon populations are the Sacramento River and its tributaries, including the Yuba River, Mill Creek, Deer Creek, and Butte Creek. Total numbers of spring-run Chinook salmon estimated in 2012 and 2013 were 22,249 and 23,697 fish respectively. These estimates are from upper Sacramento River tributaries where spring-run still occur. (California Department of Fish and Wildlife 2014b).

Sacramento winter-run Chinook salmon (*Oncorhynchus tshawytscha*) were originally listed as threatened in August 1989 under emergency provisions of the federal Endangered Species Act (ESA) and listed formally as threatened November 1990 (55 FR 46515). The ESU was reclassified as endangered on January 4, 1994 (59 FR 440). The Livingston Stone National Fish Hatchery population was included in the ESU on June 28, 2005 (70 FR 37160).

NMFS designated critical habitat for winter-run Chinook salmon on June 16, 1993 (58 FR 33212). Critical habitat for the winter-run Chinook salmon includes the Sacramento River from Keswick Dam (River Mile [RM] 302) to Chipps Island (RM 0) in the Delta (58 FR 33212).

Adult winter-run Chinook salmon immigration (upstream migration) through the Delta and into the Sacramento River occurs from December through July, with peak immigration from January through April. Winter-run Chinook salmon spawn between late April and mid-August, with peak spawning generally occurring in June in the upper Sacramento River.

The peak period of juvenile emigration through the lower Sacramento River into the Delta generally occurs between January and April. Differences in peak emigration periods between these two locations suggest juvenile winter-run Chinook salmon may exhibit a sustained residence in the upper or middle reaches of the Sacramento River before entering the lower Sacramento River/Delta. Although the location and extent of rearing in these lower or middle reaches is unknown, it is believed that the duration of fry presence in an area is directly related to the magnitude of river flows during the rearing period (Stevens 1989).

Current distribution of winter-run Chinook salmon is limited to the mainstem Sacramento River to above the Red Bluff Diversion Dam.

4.5.2.1. SURVEY RESULTS

No fish surveys were conducted. However, adult Chinook salmon likely use the deeper channels in the Bay to migrate into freshwater streams. Juvenile Chinook salmon would use the Central Bay for foraging and movement. Distribution of out-migrating juvenile Chinook salmon is not well known in the San Francisco Bay, but they have been found throughout the Bay, including the South Bay. Although the project area is not on the direct migratory path of this species, the salmon could move into the action area during its migratory movements.

4.5.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

The avoidance and minimization measures described in Section 4.1.1.2 and Section 4.5.1.2 will be implemented to reduce potential effects on Chinook salmon.

4.5.2.3. PROJECT IMPACTS

The proposed project would have the same impacts on water quality, noise during construction and habitat modification on Central Valley Spring-Run Chinook salmon as for steelhead (refer to Section 4.5.1.3).

4.5.2.4. COMPENSATORY MITIGATION

No additional compensatory mitigation is proposed for Chinook salmon beyond the compensatory mitigation provided for shallow bay (see Section 4.1.3.4).

4.5.2.5. CUMULATIVE EFFECTS

The cumulative effects analysis for steelhead applies equally to Chinook Salmon.

4.5.3. Longfin Smelt

Longfin smelt (*Spirinchus thaleichthys*), was listed under the California Endangered Species Act (CESA) as threatened throughout their range on March 5, 2009. The San Francisco-Delta Distinct Population Segment (DPS) was listed as a candidate species by USFWS on April 12, 2012 (FR 77, 19756).

Longfin smelt is an anadromous smelt (family Osmeridae) found in California's bay, estuary, and nearshore coastal environments from San Francisco Bay north to Lake Earl, near the Oregon border. The known range of the longfin smelt extends from the San Francisco Bay-Delta in California northward to the Cook Inlet in Alaska. Only the Bay-Delta population was advanced to candidate status.

Longfin smelt habitat includes:

- Slightly upstream from Rio Vista (on the Sacramento River in the Delta) including the Cache Slough region and Medford Island (on the San Joaquin River in the Delta) through Suisun Bay and Suisun Marsh
- San Pablo Bay
- San Francisco Bay (main)
- South San Francisco Bay
- The Gulf of the Farallones, just outside of the Golden Gate
- Humboldt Bay, Eel river estuary and local coastal areas

The San Francisco Estuary and the Sacramento-San Joaquin Delta supports the largest longfin smelt population in California, and Humboldt Bay likely ranks second in longfin smelt abundance. Most descriptions of longfin smelt life history in California focus on San Francisco Bay populations.

Longfin smelt in the Bay-Delta may spawn as early as November and as late as June, although spawning typically occurs from January to April. Longfin smelt have a short lifespan. Most reach maturity at two years of age, and can grow from 124 mm to 140 mm in length (standard length). Most live only two years, but three-years-old smelt have been observed. They spend their adult life in bays, estuaries, and nearshore coastal areas, and migrate into freshwater rivers to spawn. Spawning occurs primarily from January through March, after which most adults die.

Adult longfin smelt migrate into low salinity or freshwater reaches of coastal rivers and tributary streams to spawn. Newly hatched larvae are 5 mm to 8 mm long. The larvae are buoyant, and are quickly swept downstream into brackish water. Larvae are able to swim up and down in the water column, and use river and tidal currents to stay in areas where fresh and salt water mix.

Longfin smelt encounter a wide variety of water temperatures and salinities (freshwater to saltwater) during their life cycle but are rarely found in water temperatures greater than 22 degrees C. They are mostly found in mid-water or near the bottom and are known to migrate up and down in the water column following prey at night.

The primary threat to the longfin smelt DPS is from reduced freshwater flows. Upstream dams and water storage exacerbated by water diversions, especially from the SWP and CVP water export facilities, result in reduced freshwater flows within the estuary, and these reductions in freshwater flows result in reduced habitat suitability for longfin smelt. Freshwater flows, especially winter-spring flows, are significantly correlated with longfin smelt abundance longfin smelt abundance is lower when winter-spring flows are lower.

4.5.3.1. SURVEY RESULTS

No fish surveys were conducted. However, a synthesis of existing sampling data from the Interagency Ecological Program and regional monitoring programs, found that longfin smelt juveniles and sub-adults were present in the Central Bay year round (Merz et al 2013). Longfin smelt likely use the project area as rearing and migratory habitat.

4.5.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

The avoidance and minimization measures described in Section 4.1.1.2 and Section 4.5.1.2 for steelhead will be implemented to reduce potential adverse effects on longfin smelt.

4.5.3.3. PROJECT IMPACTS

The proposed project would have the same impacts on water quality, noise during construction and habitat modification as for steelhead (refer to Section 4.5.1.3).

4.5.3.4. MITIGATION

No additional compensatory mitigation is proposed for longfin smelt beyond the mitigation for fill and shading described for shallow bay (refer to section 4.1.3.4).

4.5.3.5. CUMULATIVE EFFECTS

The cumulative effects analysis for steelhead applies equally to longfin smelt.

4.5.4. North American Green Sturgeon

North American green sturgeon (*Acipenser medirostris*) are divided into two Distinct Population Segments (DPS): a northern and southern DPS. The northern DPS includes populations from the Eel River northward and the southern DPS includes populations south of the Eel River, including the Sacramento River (71 FR 17757). NMFS listed the southern DPS of green sturgeon as threatened on April 7, 2006 (71 FR 17757). Critical habitat for green sturgeon was designated on October 9, 2009 (74 FR 52300) and includes all tidally influenced areas of San Francisco, San Pablo, and Suisun Bays.

Green sturgeon are the most widely distributed sturgeon species, known to range from nearshore waters of Mexico to the Bering Sea. The only known spawning locations for green sturgeon occur in the Sacramento, Klamath, and Rogue Rivers (Adams et al. 2002). Adults typically begin their upstream spawning migration into San Francisco Bay by late February to early March. Spawning has been documented in the Sacramento River and is believed to occur in late spring and summer between Hamilton City and Keswick Dam based on the distribution of eggs, larvae, and juveniles (73 FR 52084). Larval green sturgeon have also been documented in the lower Feather River but spawning has not been substantiated (Adams et al. 2002). Juvenile sturgeon are believed to spend one to four years in fresh and estuarine waters before they enter the ocean. Salvage and trawling data indicate that juvenile sturgeon reach the Delta and estuary at a

relatively large size (>200 mm), indicating that juvenile spend several months in the Sacramento River before migrating to brackish or estuarine waters (Baxter et al. 1999, Kynard et al. 2005). Adult and juvenile sturgeon are primarily benthic (bottom) feeders, feeding mainly on benthic invertebrates such as clams, shrimp, and amphipods, but may also take small fish (SFOBB FEIS 2001).

Adults live in oceanic waters, bays, and estuaries when not spawning. Green sturgeon are known to forage in estuaries and bays ranging from San Francisco Bay to British Columbia (NMFS 2013).

4.5.4.1. SURVEY RESULTS

No fish surveys were conducted. However, it is possible that green sturgeon could occur in the action area. The estuarine habitat in the project area could be used as a foraging area for green sturgeon.

4.5.4.2. AVOIDANCE AND MINIMIZATION EFFORTS

The avoidance and minimization measures described in Section 4.1.1.2 and in Section 4.5.1.2 will also avoid or minimize potential adverse effects on green sturgeon and their designated critical habitat. Potential water quality impacts from increased sediment and turbidity or contaminant spills will be avoided or minimized through implementation of approved BMPs, compliance with water quality standards, and implementation of an approved spill prevention and response plan.

4.5.4.3. PROJECT IMPACTS

Project effects on green sturgeon would be similar to those described for steelhead although green sturgeon may be at higher risk of exposure to construction-related impacts because of their potential year-round occurrence (i.e., potential use of the study area as foraging or rearing habitat). Green sturgeon would also be considered more sensitive to the loss of natural substrates because of their dependence on benthic food organisms. Permanent habitat loss and shading effects will be compensated to avoid any net loss of habitat or net increase in shading. The project area will continue to function as foraging habitat by providing adequate area for adult and juvenile sturgeon. Green sturgeon use deeper water habitats so would not be as affected by the reduction of shallow, nearshore habitat. Noise impacts from pile driving would also occur during the installation of the new pier.

The proposed project is expected to have short- and long-term effects on the designated critical habitat for southern DPS North American green sturgeon. Potential project effects include short-term water quality degradation from localized increases in turbidity and suspended sediment and from the installation of piles for the new pier and the path to Radio Beach.

4.5.4.4. COMPENSATORY MITIGATION

No additional compensatory mitigation is proposed for green sturgeon beyond the compensatory mitigation for shallow bay (Section 4.1.3.4).

4.5.4.5. CUMULATIVE EFFECTS

The cumulative effects analysis for steelhead applies equally to green sturgeon.

4.6. Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires federal agencies to consult with the National Oceanic and Atmospheric Administration (NOAA) Fisheries on activities that may adversely affect essential fish habitat (EFH). The purpose of the Act is to conserve and manage the fishery resources of the United States and promote protection of EFH. The MSA requires that EFH be identified and described in federal fishery management plans. The Fishery Management Plans include designation of EFH and requires federal action agencies to consult with NMFS on any activity that they fund, permit, or carry out that may result in adverse effects to EFH. NMFS is required to provide EFH conservation and enhancement recommendations to the federal action agencies.

EFH is defined as the aquatic habitat necessary for spawning, breeding, feeding, or growth. Important components of EFH are substrate; water quality; water quantity, depth, and velocity; channel gradient and stability; food; cover and habitat complexity; space; access and passage; and habitat connectivity. Habitats of Particular Concern (HAPCs) are those areas of special importance within EFH that may require additional protection from adverse effects.

4.6.1. Survey Results

The project action area is within the region designated as EFH for Pacific salmon, Pacific groundfish and coastal pelagic species. San Francisco Bay is designated as a coastal estuary HAPC and eelgrass is designated as seagrass HAPC for Pacific groundfish species.

4.6.2. Avoidance and Minimization Efforts

Potential water quality effects from increased sediment and turbidity or contaminant spills will be avoided or minimized through implementation of the avoidance and minimization measures described in Section 4.1.1.2 and Section 4.5.1.2.

4.6.3. Project Impacts

The proposed action is expected to have localized short- and long-term effects on EFH and HAPCs.

Table 4-9. Summary of Impacts on Essential Fish Habitat

Community Type	Total Study Area (acres)	Permanent Impact Area (acres)	Temporary Impact Area (acres)
Eelgrass	Limited (to be determined in subsequent design)	Limited (to be determined in subsequent design)	In proximity to construction areas
Shallow Bay	6.5	0.24 (Fill) 0.37 (shading)	In proximity to construction areas
Deep Bay	12.6	N/A	In proximity to construction areas

Potential effects include short-term water quality degradation from localized increases in turbidity and suspended sediment and potential discharges of and exposure to contaminants in the action area during in-water and near-water construction activities. The addition of pilings for the pier and the pathway to Radio Beach will result in less area for foraging. Additionally, shading from the new pier and the overwater pathway to Radio Beach will permanently change habitat in that area. Revetment walls, a concrete terrace wall and riprap for the shoreline protection of the EBMUD outfall will also permanently change nearshore habitat.

Construction of the proposed project would minimize impacts to EFH by implementing controls to prevent pollution and increased turbidity during construction. The phasing of the project construction is expected to further temporally fragment any temporary impacts that occur and reduce the magnitude of such impacts to EFH.

4.6.4. Compensatory Mitigation

As described above, compensatory mitigation will be provided for permanent fill and shading impacts to shallow bay habitat and for eelgrass if eelgrass is ultimately affected by the project. No additional compensatory mitigation is proposed for potential effects to EFH.

4.6.5. Cumulative Effects

Cumulative impacts on EFH could result from construction of other projects in San Francisco Bay.

As discussed above, the East Span project would result in temporary and permanent effects to open water habitat including eelgrass, includes minimization efforts during construction, and is implementing a long-term comprehensive compensatory mitigation program to offset both temporary and permanent effects to EFH, including eelgrass. The redevelopment of the Oakland Army Base would also result in fill of EFH if New Berth 21 is ultimately implemented in which case compensatory mitigation would also be required to offset fill of Bay habitat. Operations and maintenance dredging and dredge spoil disposal also result in disturbance of EFH in various locations in San Francisco Bay including nearby in the Port of Oakland.

Construction of the proposed project would have direct impacts to EFH and would add to the cumulative loss of EFH since the project would impact up to 0.284 acres of the Bay due to fill and up to 0.37 acres of new shading. Therefore, the project could have a cumulative adverse effect on EFH, but compensatory mitigation would avoid net loss of EFH or net increase of shading and thus the project would not contribute considerably to the loss of degradation of EFH within the San Francisco Bay.

4.7. Marine Mammals

The Marine Mammal Protection Act (MMPA) establishes a federal responsibility to conserve marine mammals, with management vested in the Department of Commerce [National Marine Fisheries Service] for cetaceans and pinnipeds other than walrus. The Department of the Interior [US Fish and Wildlife Service] is responsible for all other marine mammals, including sea otter, walrus, polar bear, dugong and manatee. The Act generally assigns identical responsibilities to the Secretaries of the two departments.

The MMPA is the main regulatory vehicle that protects marine mammal species and their habitats in an effort to main sustainable populations. In doing so, the statute outlines prohibitions, required permits, criminal and civil penalties, and international aspects in addressing marine mammals. The act requires consultation on any action that may adversely affect marine mammals and provides a mechanism for an “incidental” take of species not listed under the federal Endangered Species Act.

Marine mammals such as harbor seals (*Phoca vitulina*), California sea lions (*Zalophus californicus californianus*), harbor porpoise (*Phocoena phocoena*), occur in the study area and in nearby parts of San Francisco Bay. Gray whale (*Eschrichtius robustus*) may also infrequently occur in the Bay as well.

4.7.1. Survey Results

Marine mammals could occur within bay habitat in and adjacent to the project area. Seals and sea lions are the most likely marine mammals to be encountered. Harbor porpoise may also be encountered. Grey whales are unlikely to be encountered, but the possibly cannot be excluded. Harbor seals, sea lions, and harbor porpoise could forage within the nearshore marine habitat where in-water construction would occur. Grey whales would only be found in deeper waters offshore.

Seals and sea lions are not known to haul out at the project area and the background human disturbance and degraded nature of these habitats are expected to further reduce the likelihood that they would utilize terrestrial portions within the project area adjacent to the Bay. The nearest haulout locations to the project are on the southwest side of Yerba Buena Island, approximately 2 miles from the project and not on a direct line from the proposed pile-driving locations.

4.7.2. Avoidance and Minimization Efforts

Potential water quality effects from increased sediment and turbidity or contaminant spills will be avoided or minimized through implementation of the avoidance and minimization measures described in Section 4.1.1.2 and Section 4.5.1.2, including pile driving noise attenuation measures.

Marine Mammal Impact Avoidance and Minimization Measures for Pile Driving

- The project proponent or its contractor will ensure the following noise reduction measures are implemented during construction activities involving pile driving.
- Comply with equipment noise standards of the U.S. Environmental Protection Agency and ensure that all construction equipment has noise control devices no less effective than those provided on the original equipment.
- Conduct briefings between construction supervisors and crews, marine mammal monitoring team, acoustical monitoring team prior to the start of all pile-driving activity, and when new personnel join the work, that explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures.
- For all in-water permanent pile-driving, establish marine mammal safety zones of 500 meters (1,640 feet) for pinnipeds and 150 meters (492 feet) for cetaceans around each of the pile-driving sites before pile driving commences. These radii represent received levels of 180 dB re μPu_{rms} for harbor porpoises and/or gray whales, and 190 dB re μPu_{rms} for California sea lions and/or harbor seals, respectively.

- If marine mammals are visually sighted within the safety zone(s) prior to start of pile-driving, the Resident Engineer (or other authorized individual) is required to delay pile-driving of the segment until the harbor porpoises and/or gray whales have moved beyond the 180 dB re μPu_{rms} safety zone, or seals and/or sea lions have moved beyond the 190 dB re μPu_{rms} safety zone. Verification may be conducted either through sighting by a qualified observer or by waiting until enough time has elapsed without a sighting (at least 15 minutes for pinnipeds and 30 minutes for cetaceans) to assume the animal has moved beyond the safety zone.
- If marine mammals are sighted within the safety zone(s) after pile-driving has begun, have a qualified marine mammal observer record the species, numbers and behaviors of the animal(s) and report to NMFS within 48 hours of the sighting.
- The contractor shall "soft-start" impact and vibratory pile driving operations.

Marine Mammal Monitoring and Reporting for Pile Driving

The project proponent or its contractor shall ensure the following monitoring and reporting measures are implemented:

- A minimum of three biologically-trained, on-site individual(s), approved in advance by the NMFS, shall be required to monitor the area for marine mammals before, during, and after pile driving activities from boats.
- NMFS must be informed immediately of any changes or deletions to any portions of the monitoring plan in accordance with the Initial Harassment Authorization (IHA) to be obtained for the project.
- Visual Monitoring
    - For all in-water permanent pile-driving one three-person observer team must visually monitor each pile-driving site. When multiple sites are in operation, more than one observer team must be utilized from boats.
    - Pre-Activity Monitoring: At least 30 minutes prior to the start of all in- water permanent pile-driving segments, marine mammal monitor(s) must conduct observations on the number, type(s), location(s), and behaviors of marine mammals in the designated safety zones and buffer zones, as well as other areas near pile driving sites. If the time between pile-segment driving is less than 30 minutes, a new 30-minute survey is unnecessary provided marine mammal monitors continue observations during the interruption. If pile driving ceases for 30 minutes or more and a marine mammal is sighted within the designated safety zone(s) prior to the commencement of pile-driving, the observer(s) must notify the Resident Engineer (or other authorized individual) immediately (see condition.

- Monitoring during Activity: During all in-water permanent pile-driving marine mammal monitor(s) shall conduct and record observations on marine mammals in the vicinity of the pile driving sites and pay particular attention to designated safety zones.
- Post-Activity Monitoring: For a minimum of 30 minutes after in-water permanent pile-driving stops, marine mammal monitor(s) shall conduct observations of the project area and record information on the number, type(s), location(s), and behavior of marine mammals and pay attention to designated safety zones.
- Monitoring on Yerba Buena Island Haul-out: The holder of this authorization shall coordinate with the Richmond Bridge harbor seal survey team to collect observational data from Yerba Buena Island during in-water pile-driving activity.
- Monitoring under Low Light Condition: In late afternoon and/or early evening when light condition is low, marine mammal monitor(s) shall use infrared (IR) scopes to conduct observation of the project area.
- Data on all observations must be recorded and shall include the following information:

  (i) date and time that pile driving or removal starts and ends;

  (ii) location of sighting;

  (iii) species;

  (iv) number of individuals;

  (v) number of calves present;

  (vi) duration of sighting;

  (vii) behavior of marine animals sighted;

  (viii) direction of travel;

  (ix) distance from pile driving/removal;

  (x) environmental information associated with sighting event including Beaufort sea state, wave height, tide state, water currents, wind direction, visibility, glare, percentage of glare, percentage of cloud cover;

  (xi) when in relation to pile driving or removal activities did the sighting occur (before, "soft-start", during, or after the pile driving or removal); and

  (xii) other human activity in the area.

- Reporting
    - If in-water pile driving or removal is conducted, the project proponent or their designee must consult once a week by telephone or e-mail with NMFS providing a status report on the appropriate reporting items, unless other arrangements for monitoring reports are agreed to in writing.
    - A report on all activities must be submitted to NMFS within 90 days after completion of the activities. This report must contain the following information:

      (1) Dates and types of activities; and

      (2) The results of the visual monitoring program, including all items noted above.

4.7.3. Project Impacts

Marine mammals could be affected by in-water construction. Pile driving activities pose the greatest potential to marine mammals. The level of potential sound levels associated with pile driving are discussed above in the analysis of impacts to steelhead. These sound levels could result in harassment, injury, and potential mortality to marine mammals depending on proximity to pile driving activities. The avoidance and minimization measures above would avert potential mortality, and would minimize the potential for injury and harassment.

Table 4-10. Summary of Impacts on Marine Mammals

Marine Mammals	Habitat in Study Area (acres)	Permanent Impact	Temporary Impact
Harbor Seal, California sea lion, harbor porpoise, gray whale	19.1	0.24 (fill) 0.37 (shading)	In proximity to construction areas, particularly due to in-water pile driving.

Apart from in-water pile driving effects, the proposed action is also expected to have localized short- and long-term effects on habitat that could be used by marine mammals. Potential effects include short-term water quality degradation from localized increases in turbidity and suspended sediment and potential discharges of and exposure to contaminants in the action area during construction activities. Habitat modifications will occur for marine mammal species. The addition of pilings for the pier and the path to Radio Beach will result in less area for foraging. Additionally, shading from the new pier and path to Radio Beach will permanently change habitat in that area. Revetment walls, a concrete terrace wall and riprap for the EBMUD outfall will also permanently change nearshore habitat.

4.7.4. Compensatory Mitigation

As discussed above, the project would compensate for permanent fill and shading impacts to Bay habitats. No additional compensatory mitigation is proposed for permanent effects to mammals covered under the MMPA.

4.7.5. Cumulative Effects

Cumulative impacts could potentially result from infrastructure projects in the immediate vicinity of the Project, operational and maintenance dredging, development projects that encroach on bay habitat, restoration projects, in combination with project effects.

The recent installation of the eastern span of the new Bay Bridge and the removal of the old Bay Bridge is the primary project that affects the Bay and its margins nearest the Gateway Park Project. The projects effects on bay habitat were summarized in Section 4.1.3.5 above. Pile-driving and removal activities could also result in direct harm to marine mammals.

The East Span project also included a substantial mitigation program concerning impacts to bay habitat including avoidance and minimization practices during construction (including attenuation requirements during pile driving and explosive demolition) and removal of the prior east span, on-site restoration of 3 acres of sand flats and eelgrass beds, off-site eelgrass restoration, funding of an off-site mitigation program to restore shallow water submerged land and wetland habitat (including support for restoration actions at Skaggs Island; habitat restoration at Eastshore State Park, and funding for eelgrass restoration programs (SFOBB BCDC permit).

The redevelopment of the Oakland Army Base, which is adjacent to the Gateway Park project, would result in the net loss of approximately 27 acres of open and covered water due to the New Berth 21 element of the redevelopment plan, which would also provide habitat for steelhead. Mitigation adopted by the City of Oakland includes compliance with Corps, RWQCB, USFWS/NMFS, and CDFW requirements for all bay fill (City of Oakland 2002).

Operations and maintenance dredging and disposal at various locations throughout the Bay would temporarily impair water quality and habitat for marine mammals.

While other development projects are planned throughout the region, many of these projects occur within already developed portions of land and would not affect the Bay. Where development projects are proposed in areas of bay, they would be required by federal (USACE) and state (RWQCB, BCDC) permitting requirements to result in no net loss of bay habitats and no net increase in shading. In addition, there are numerous efforts throughout San Francisco Bay

to restore bay habitats including open water habitat that would benefit marine mammals. Examples include the Hamilton Wetland Restoration Project and the Sears Point Project in San Pablo Bay and the South Bay Salt Pond Restoration Project in southern San Francisco Bay, among others.

In combination with cumulative projects described above, the project would contribute to cumulative impacts on bay (estuarine) habitat due to the project's permanent, direct impacts on up to 0.24 acres shallow bay (estuarine) habitat and up to 0.37 acres of shading of shallow bay. The fill impacts would be compensated through purchase of credits at a 1:1 ratio at an approved mitigation bank and the shading impact would be compensated through funding of other projects that involve removal of existing unused overwater structures currently shading the Bay. With the avoidance and minimization and compensatory mitigation measures described above, the project would not contribute considerably to cumulative impacts on marine mammals.

4.8. Migratory and Non-Migratory Birds

Migratory birds may forage in the project area. Non-migratory birds may nest at the eastern end of Bay Bridge, near the project area. These birds include barn owl, black phoebe, house finch, killdeer, mourning dove, European starling, house sparrow, and rock pigeon. The sandy beach and foredune areas provide potential foraging habitat for shorebirds including California least terns, western snowy plovers, and northern harrier as discussed above as well as killdeer (*Charadrius vociferous*), Western sandpipers (*Calidris mauri*), long-billed curlews (*Numenius americanus*), willets (*Tringa semipalmata*) and raptors such as the white-tailed kite (*Elanus leucurus*).

Migratory birds have certain protections under the Migratory Bird Treaty Act. Non-migratory birds have certain protections under the California Fish and Game Code. Listed state and federal species have protections under the federal and state endangered species acts, respectively.

4.8.1. Survey Results

No bird surveys were conducted but a reconnaissance survey of the site was conducted to identify habitats that may be used by migratory birds.

4.8.2. Avoidance and Minimization Efforts

The project proponent will ensure implementation of the following avoidance and minimization measures to protect migratory and non-migratory bird species.

Avoid Construction During the Migratory Bird Nesting Season (January 31 through September 15) or Conduct Preconstruction Surveys for Nesting Birds

The project proponent or their construction contractor will either schedule construction activities near potential nesting areas to occur September 16 to January 30 to avoid construction during the nesting season (generally, February 1 through September 15 for most birds) or will conduct nesting season surveys and provide construction buffers around active nests as discussed below. Vegetation removal in proximity to nesting areas in particular should occur between October 1 and January 30 wherever feasible. Beginning construction prior to the nesting season will establish a level of noise disturbance that will dissuade noise-sensitive raptors and other birds from attempting to nest within or near the study area.

If construction activities (including vegetation removal) cannot be avoided during the nesting season, the project proponent will retain a qualified wildlife biologist with knowledge of the relevant species to conduct nesting surveys before the start of construction. Surveys will be conducted for migratory birds, including raptors. Surveys will include a search of all trees and shrubs, and tidal salt marsh areas that provide suitable nesting habitat, in the project area. In addition, a 500 foot area around the project area will be surveyed for nesting raptors. Surveys should occur prior to construction including during the height of the nesting season (March 1 to June 1) with one survey occurring in each of two consecutive months within this peak period and the final survey occurring within 1 week of the start of construction. If no active nests are detected during these surveys, no additional measures are required. The biological monitor will check structures in the project area daily for caches of dead prey left by barn owls and remove any caches of dead prey found and block access to cache locations with exclusion measures.

Install a No Disturbance Buffer around Detected Active Nests

If an active nest is found during the preconstruction surveys for nesting birds, the biological monitor will coordinate with the contractor to establish a no-disturbance buffer around the site to avoid disturbance or destruction of the nest site until the end of the breeding season (September 15 or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project area (this date varies by species). The extent of these buffers will be determined by the biologist in coordination with CDFW and will depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species.

4.8.3. Project Impacts

The project will result in temporary disturbance of several areas where nesting may occur including the northern foredunes and tidal salt marsh areas at Radio Beach. Ground nesting may also occur in the ruderal areas south of I-80. Migratory and non-migratory birds may nest in construction areas and may forage in both terrestrial and marine areas of the project. Nesting and foraging activities may be disrupted due to construction activity.

A summary of impacts on habitat used by migratory and non-migratory birds is presented below.

Table 4-11. Summary of Impacts on Habitats Potentially Used by Migratory and Non-Migratory Birds

Community Type	Total Study Area (acres)	Permanent Impact Area (acres)	Temporary Impact Area (acres)
Open Water	19.1	0.24 (fill) 0.37 (shading)	Immediately adjacent to permanent area
Eelgrass Beds	Limited amount (TBD during subsequent design)	Limited amount (TBD during subsequent design)	Limited amount (TBD during subsequent design)
Sandy Beach	1.91	0.08	0.10
Northern Foredunes	1.1	0.18	0.04
Tidal Salt Marsh	2.19	0.006	0.007
Seasonal Wetland	0.01	0.01	N/A
Ruderal Areas	14.2	14.2	N/A

During construction, with the implementation of the avoidance and minimization measures described in Section 4.8.2, the Proposed Project would not have an adverse effect on nesting migratory or non-migratory bird species.

The project would result in the loss of some foraging areas including ruderal areas of low value for forage as well as seasonal wetland, tidal salt marsh, northern foredunes, and shallow bay.

4.8.4. Compensatory Mitigation

Compensatory mitigation for the loss of wetlands, northern foredunes and shallow bay will ensure no net loss of these terrestrial and marine habitats that are used by migratory and non-migratory bird species. No additional compensatory mitigation for migratory and non-migratory birds is proposed.

4.8.5. Cumulative Impacts

The East Span project would affect migratory and non-migratory birds in several ways. The project would result in the displacement of a nesting cormorant colony and a peregrine falcon nest due to removal of the East Span structure. Nesting habitat for cormorants was expected to be constructed on the new bridge and USFWS indicated that peregrine falcons would likely nest on the new bridge as well. The project would also result in disruption of nesting activities of several terrestrial bird species due to vegetation and tree removal on Yerba Buena Island. Construction measures are being employed to avoid and minimize nesting disruption. East Span project affects to habitats (that may be used by migratory and non-migratory birds) was discussed earlier in this chapter and permanent affects to sensitive habitat types would be compensated through restoration actions and funding of restoration actions (SFOBB FEIS 2001).

Oakland Army Base Redevelopment could result in removal of ornamental trees such as sycamore and date palm, among others. Some of these trees may be used by breeding birds as nesting habitat. Project mitigation for the redevelopment requires timing of tree removal to avoid the nesting season or conducting of nesting surveys and use of buffer zones. Redevelopment would also result in the loss of foraging area if New Berth 21 is advanced, however, the EIR for the project identifies that the fill area does not appear to be an important foraging area for birds. Several birds (red-winged blackbirds and mourning doves) were observed nesting in the small urban wetlands that would be filled by the redevelopment project as well, but the project would compensate for their loss (City of Oakland 2002).

In general, numerous development projects are planned throughout the region and may displace migratory and non-migratory bird nesting. However, the requirements of the MBTA and the California Department of Fish and Game Code would apply equally to all such projects to require avoidance of disturbance of active nests.

The proposed project will avoid disturbance of active nests through the avoidance and minimization measures described above and thus will not contribute to any cumulative nest disruption. Compensatory mitigation is provided for sensitive environments that provide foraging and/or nesting habitat (like wetlands, northern foredunes, and eelgrass/shallow bay) such that there would be net loss of such areas. The loss of ruderal areas will reduce the area of potential foraging and nesting for certain birds but ruderal areas are a common landscape type and their loss for this project would not have a population effect on bird species that would be considered cumulatively considerable.

Chapter 5. Results: Permits and Technical Studies for Special Laws or Conditions

This chapter includes a description of the applicable federal and state regulatory requirements. The permits and approvals potentially required for the proposed project are listed in **Table 5-1**.

Table 5-1. Permits and Approvals Potentially Required for the Proposed Project

Permit/Approval	Approving Agency
Endangered Species Act Section 7: Consultation and Incidental Take Statement	USFWS and NMFS
Incidental Harassment Authority under the Marine Mammal Protection Act	NMFS
Magnuson-Stevens Fishery Conservation and Management Act consultation concerning Essential Fish Habitat	NMFS
Section 404 Permit for filling or dredging waters of the United States	USACE
Section 10 Rivers and Harbors Act of 1899 - permit for structures in navigable water	USACE
Major permit for shoreline improvements and structures in water	San Francisco Bay Conservation and Development Commission (BCDC)
Section 401 Water Quality Certification, Construction NPDES	San Francisco Regional Water Quality Control Board
Porter-Cologne Water Quality Control Act (compliance as part of Section 401 Water Quality Control Act)	California Regional Water Quality Control Board
California Endangered Species Act (CESA)	CDFW
California Fish and Game 2081 Incidental Take Permit (longfin smelt)	CDFW
McAteer-Petris Act	BCDC
California Department of Transportation – NPDES Statewide Stormwater Permit	Caltrans
California State Water Resources Control Board - Construction General Permit	Caltrans

5.1. Federal Endangered Species Act

The federal Endangered Species Act (ESA) is administered by U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). In general, NMFS is responsible for protection of ESA-listed marine species and anadromous fishes, whereas other listed species are under USFWS jurisdiction. Endangered refers to species, subspecies, or distinct population segments that are in danger of extinction through all or a significant portion of their range;

threatened refers to species, subspecies, or distinct population segments that are likely to become endangered in the near future. Provisions of Sections 7 and 9 of ESA are relevant to the proposed project and are summarized below.

Section 9 of ESA prohibits the take of any fish or wildlife species listed under ESA as endangered. Take of threatened species is also prohibited under Section 9, unless otherwise authorized by federal regulations. Take, as defined by ESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Harm is defined as "any act that kills or injures the species, including significant habitat modification." In addition, Section 9 prohibits removing, digging up, cutting, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction. Section 9 does not prohibit take of federally listed plants on sites not under federal jurisdiction.

Take of listed species is authorized through the Section 7 consultation process for actions by federal agencies. Federal agency actions include activities that are on federal land, conducted by a federal agency, funded by a federal agency, or authorized by a federal agency (including issuance of federal permits and licenses).

Under Section 7, the federal agency conducting, funding, or permitting an action (the federal lead agency) must consult USFWS or NMFS, as appropriate, to ensure that the proposed action will not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed action "may affect" a listed species or designated critical habitat, the lead agency is required to prepare a biological assessment (BA) evaluating the nature and severity of the expected effect. In response, USFWS and/or NMFS issues a biological opinion (BO), with a determination that the proposed action either:

- may jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding) or
- will not jeopardize the continued existence of any listed species (no jeopardy finding) or result in adverse modification of critical habitat (no adverse modification finding).

The BO issued by USFWS and/or NMFS may stipulate discretionary "reasonable and prudent" conservation measures. If the proposed action would not jeopardize a listed species, USFWS and/or NMFS will issue an incidental take statement to authorize the proposed activity.

Based on the impact characterized in Chapter 4, it has been determined that the project will affect California clapper rail and salt marsh harvest mouse habitat, but project activities are not expected to directly "take" individuals of either species. Therefore, the project proponent will submit a biological assessment to the United States Fish and Wildlife Service (USFWS) and obtain a BO for these species.

Based on the impacts characterized in Chapter 4, it has been determined that the project will affect Central California Coast steelhead, North American green sturgeon, Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, and longfin smelt.[7] Project activities will also affect designated critical habitat for the green sturgeon. The project proponent will submit a biological assessment to the National Marine Fisheries Service (NMFS) and obtain a BO for these species.

5.2. California Endangered Species Act

The California Endangered Species Act (CESA) prohibits the take of endangered and threatened species; however, habitat destruction is not included in the state's definition of take. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. The California Department of Fish and Wildlife (CDFW) administers the act and authorizes take through Section 2081 agreements (except for species designated as fully protected). CDFW can adopt a federal biological opinion as a state biological opinion under California Fish and Game Code, Section 2095. In addition, CDFW can write a consistency determination for species that are both federally and state listed if CDFW determines that the avoidance, minimization, and compensation measures will ensure no take of species.

Based on the impacts characterized in Chapter 4, it has been determined that the project may result in take (as defined under CESA) of Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, and longfin smelt individuals. Therefore, the project proponent will acquire an Incidental Take Permit (ITP) from California Department of Fish and Wildlife for these species under Section 2081 of the Fish and Game Code.

Based on the impacts characterized in Chapter 4 and the avoidance and minimization measures, it has been determined that the project will not result in take (as defined under CESA) of California black rail and salt marsh harvest mouse.

[7] Longfin smelt are a candidate species under the Federal ESA. They are included in the Section 7 consultation in the event that they are formally listed.

5.3. Wetlands and Other Waters Coordination Summary

ICF conducted a survey of the project site to map wetlands, drainages, or other water features in the study area that could be considered waters of the United States by the U.S. Army Corps of Engineers (USACE). Details regarding the methods used in the surveys are presented in Chapter 2, *Study Methods*, and the results are presented in Chapter 3, *Results: Environmental Setting*. The delineation reports are included in **Appendix D**. The wetland delineation report was submitted to the USACE in March 2015; and the jurisdictional determination has not been received to date.

The project proponent will apply for the following permits for impacts to wetlands, waters of the U.S., and waters of the state:

- Clean Water Act Section 404 Individual Permit
- 401 Water Quality Certification
- Construction General Permit under the National Pollution Discharge Elimination System (NPDES) from SWQCB

On July 10, 2013, the U.S. Army Corps of Engineers held an Interagency Meeting to discuss this project, and federal agency attendees included a representative from the Environmental Protection Agency and the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB).

Each of these permit requirements is summarized below.

5.3.1. Clean Water Act Section 404 Permit

A Section 404 permit is necessary when a project will result in fill to waters under USACE jurisdiction. A jurisdictional delineation of these resources has been completed and has been submitted to USACE for verification.

Based on the preliminary jurisdictional delineation (see Chapter 4), there will be temporary and permanent impacts to wetland or other water features under all Alternatives. A Section 404 permit will be required for the proposed project. It is anticipated that an individual permit will be required under Section 404 due to the placement of structures in navigable waters.

5.3.2. Section 10 of the Rivers and Harbors Act (33 U.S.C. 401 et seq.).

Section 10 of the Rivers and Harbors Act is administered by USACE. This section requires permits in navigable waters of the U. S. for all structures such as riprap and activities such as dredging. Navigable waters are defined as those subject to the ebb and flow of the tide and

susceptible to use in their natural condition or by reasonable improvements as means to transport interstate or foreign commerce. The USACE grants or denies permits based on the effects on navigation. Most activities covered under this act are also covered under Section 404 of CWA.

The project will potentially include structures placed in San Francisco Bay, a navigable waterway, including shoreline protection and a pier at Key Point and a structure/fill for the path to Radio Beach. A Section 10 authorization will be required for the proposed project and will be obtained through the CWA Section 404 permitting process.

5.3.3. 401 Water Quality Certification

A Section 401 Water Quality Certification is necessary when a project requires a 404 permit from the USACE and under other special circumstances. Because 404 permits will be required for the proposed project, a 401 Water Quality Certification from the San Francisco Bay Regional Water Quality Control Board also will be required.

5.3.4. Porter-Cologne Water Quality Control Act

California Water Code Section 13260 requires "any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." Under the Porter-Cologne Act definition, waters of the state are "any surface water or groundwater, including saline waters, within the boundaries of the state." Although all waters of the United States that are within the borders of California are also waters of the state, the reverse is not true. Therefore, California retains authority to regulate discharges of waste into any waters of the state, regardless of whether the USACE has concurrent jurisdiction under CWA Section 404. If the USACE determines that a wetland is not subject to regulation under Section 404, CWA Section 401 water quality certification is not required. However, the RWQCB may impose waste discharge requirements (WDRs) if fill material is placed into waters of the state.

For this project, all of the waters of the state are also waters of the U.S. Thus, the Section 401 water quality certification will also address the requirements of the Porter-Cologne Water Quality Control Act.

5.3.5. Executive Order 11990: Protection of Wetlands

Executive Order (EO) 11990, signed May 24, 1977, directs all federal agencies to refrain from assisting in or giving financial support to projects that encroach on publicly or privately owned wetlands. It further requires that federal agencies support a policy to minimize the destruction, loss, or degradation of wetlands. Such a project (that encroaches on wetlands) may not be

undertaken unless the agency has determined that (1) there are no practicable alternatives to such construction, (2) the project includes all practicable measures to minimize harm to wetlands that would be affected by the project, and (3) the impact will be minor.

As part of the CWA Section 404 individual permit, a Section 404 (b)(1) alternatives analysis and determination will be prepared in consultation with the USACE, which will identify the least environmentally damaging practical alternative (LEDPA), which will form the basis for USACE CWA Section 4o04 permitting. Thus compliance with the CWA Section 404 requirements will result in compliance with EO 11990.

5.3.6. Construction General Permit

Section 402 of the Clean Water Act regulates both point and non-point discharges to waters of the U.S. including temporary activities during construction.

Most construction activities that disturb 1 acre of land or more are required to obtain coverage under the NPDES General Permit for Construction Activities (Construction General Permit). The State Water Board has issued a statewide Construction General Permit (Order No. 2009-0009-DWQ, NPDES No. CAR000002), adopted September 2, 2009. Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation, that result in soil disturbances of at least 1 acre of total land area.

The Construction General Permit requires project proponents to file a notice of intent (NOI) to discharge stormwater and to prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and a description of proposed construction activities, along with a demonstration of compliance with relevant local ordinances and regulations, and an overview of the best management practices (BMPs) that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Permittees are further required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

The project will be required to comply with the Construction General Permit during construction.

5.4. McAteer-Petris Act

The BCDC is a state agency and was created by the McAteer-Petris Act to regulate development in and around San Francisco Bay. After its creation, BCDC was designated as the Federal Coastal Zone Management Agency for San Francisco Bay in accordance with the Federal Coastal Zone Management Act (CZMA). The purpose of the CZMA is similar to that of the

McAteer-Petris Act, to regulate development in coastal areas and to protect their unique resources. Under the McAteer-Petris Act, BCDC has jurisdiction over the entire Bay and a shoreline band of 30 meters (100 feet) shoreward of the mean high tide line. As defined by BCDC, Bay fill is any solid, pile-supported, floating, cantilevered or suspended material that is placed bayward of the Mean High Tide Line (MHTL) which is approximately 2.77 feet at the Oakland Touchdown (Gateway Park) Area. Unlike the Army Corps, the analysis of fill in BCDC's jurisdiction includes fill placed in special aquatic sites such as wetlands, eelgrass beds, and sand flats, all of which occur within the project area.

As part of its statutory mandate under the McAteer-Petris Act, BCDC prepared the San Francisco Bay Plan as its master planning document for the San Francisco Bay. The Plan, adopted in 1969, as amended, outlines policies to guide future uses of the Bay and shoreline.

On July 10, 2013, the U.S. Army Corps of Engineers held an Interagency Meeting to discuss this project, and federal agency attendees included a representative from the Environmental Protection Agency, the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) and the San Francisco Bay Conservation and Development Commission (BCDC). Additional meetings with BCDC were held on August 26 and October 7, 2013, and on February 28 and April 10, 2014.

The project will encroach in San Francisco Bay and within the shoreline band and thus will require a major permit from the BCDC.

5.5. Other Federal and State Regulations

5.5.1. Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Act (MSA) governs the conservation and management of ocean fisheries (U.S. Department of Commerce, et al. 1996). The purpose of the Act is to take immediate action to conserve and manage the fishery resource off the U.S. coasts and U.S. anadromous species and promote the protection of Essential Fish Habitat (EFH).

EFH is the aquatic habitat (water and substrate) necessary for fish to spawn, breed, feed, or grow to maturity that will allow a level of production needed to support a long-term, sustainable commercial fishery and contribute to a healthy ecosystem. EFH is described for groundfish, coastal pelagic, and Pacific salmon fisheries. Consultation with NMFS is required for all projects with the potential to affect EFH for any MSA species.

The Magnuson-Stevens Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 94-265), requires that:

- Federal agencies undertaking, permitting, or funding activity that may adversely affect EFH are required to consult with NMFS.
- NMFS provide conservation recommendations for any federal or state activity that may adversely affect EFH.
- Federal agencies, within 30 days of receiving conservation recommendations from NMFS, provide a detailed response in writing to NMFS regarding the conservation recommendations (the response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH, or reasons for not following the recommendations).

The project would affect EFH for Pacific salmon, Pacific groundfish and coastal pelagic species falls due to in-water work during construction for the Key Point Pier, shoreline protection at Key point, and the path to Radio Beach. Thus, the project proponent would prepare an assessment of EFH effects and consult with NMFS under the MSFCMA concerning EFH at the same time as the Section 7 consultation process.

5.5.2. Marine Mammal Protection Act

The MMPA (Title 16, USC, 1361-1421h), adopted in 1972, makes it unlawful to take or import any marine mammals and/or their products. An incidental harassment permit may be issued by NMFS to cover activities for up to 1 year and with negligible effects on the species. The MMPA includes two levels of harassment. Level A harassment is defined as any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal in the wild. Level B harassment is defined as harassment having potential to disturb marine mammals by causing disruption of behavioral patterns including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

The project would temporarily affect marine mammals during Key Point pier construction and construction of the path to Radio Beach which may affect harbor seals and sea lions, particularly due to pile driving. Permanent affects to marine mammals are not expected to occur. Thus, the project proponent would consult with NMFS under the MMPA at the same time as the Section 7 consultation process and would obtain an incidental harassment permit for proposed pile driving.

5.5.3. Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) (16 USC 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703, 50 CFR 21, 50 CFR 10). Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of MBTA. Examples of permitted actions that do not violate MBTA are the possession of a hunting license to pursue specific gamebirds, legitimate research activities, display in zoological gardens, banding, and other similar activities. USFWS is responsible for overseeing compliance with MBTA, and the U.S. Department of Agriculture's Animal Damage Control Officer makes recommendations on related animal protection issues.

Executive Order 13186 (January 10, 2001) directs each federal agency taking actions having or likely to have a negative impact on migratory bird populations to work with USFWS to develop a memorandum of understanding (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities:

- Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions
- Restore and enhance habitat of migratory birds, as practicable
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable

The executive order is designed to assist federal agencies in their efforts to comply with MBTA, and does not constitute any legal authorization to take migratory birds.

As described in Chapter 4, the project would include avoidance and minimization measures to avoid disturbance of active migratory bird nesting and thus no MBTA depredation permit is expected.

5.5.4. Executive Order 13112: Prevention and Control of Invasive Species

EO 13112, signed February 3, 1999, directs all federal agencies to prevent and control the introduction of invasive species in a cost-effective and environmentally sound manner. The EO established the National Invasive Species Council (NICS), which is composed of federal agencies and departments, and a supporting Invasive Species Advisory Committee (ISAC) composed of state, local, and private entities. In 2008, the NISC released an updated national

invasive species management plan (National Invasive Species Council 2008) that recommends objectives and measures to implement the EO and prevent the introduction and spread of invasive species. The EO requires consideration of invasive species in National Environmental Policy Act (NEPA) analyses, including their identification and distribution, their potential impacts, and measures to prevent or eradicate them.

Invasive plant species were documented in the study area (**Table 3-3**). The proposed construction activities have the potential to further spread invasive species in and beyond the study area. The spread of invasive plant species would result in potential long-term degradation of the seasonal wetland and would be in conflict with Executive Order 13112 (Prevention and Control of Invasive Species). Implementation of the proposed avoidance and minimization efforts listed in Chapter 4 would minimize spread of invasive plant species.

5.5.5. California Fish and Game Code

Several sections of the California Fish and Game Code (CFGC) apply to the proposed project and are described below: 3503, 3503.5, 3511, 3700, 3511 and 3513. Implementation of the proposed avoidance and minimization efforts listed in Chapter 4 would reduce effects to protected species.

5.5.5.1. SECTIONS 3503 AND 3503.5: BIRDS AND RAPTORS

CFGC 3503 prohibits the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and destruction of raptor nests. Trees and shrubs in and adjacent to the study area provide suitable nesting habitat for birds and raptors. The City will avoid violation of CFGC 3503 and 3503.5 by implementing measures identified in Chapter 4 for nesting birds.

5.5.5.2. SECTION 3511: FULLY PROTECTED BIRDS

The CFGC provides protection from take for a variety of species, referred to as fully protected species. CFGC 3511 lists fully protected birds and prohibits take of these species. The code defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Except for take related to scientific research, all take of fully protected species is prohibited.

Fully protected birds with potential to occur at the project site include California brown pelican, California black rail, California clapper rail, California least term, and white-tailed kite. No take of these species is expected with implementation of the avoidance and minimization measures in Chapter 4.

5.5.5.3. SECTION 3513: MIGRATORY BIRDS

CFGC 3513 prohibits the take or possession of any migratory non-game bird as designated in the MBTA or any part of such migratory non-game bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA. The City will avoid violation of CFGC 3513 by implementing measures identified in Chapter 4 for migratory birds.

5.5.5.4. SECTION 3700: FULLY PROTECTED MAMMALS

The CFGC provides protection from take for a variety of species, referred to as fully protected species. CFGC 3700 lists fully protected mammals and prohibits take of these species. The code defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Except for take related to scientific research, all take of fully protected species is prohibited.

The only fully protected mammal species is the salt marsh harvest mouse. No take of individual salt marsh harvest mouse is expected with implementation of the avoidance and minimization measures in Chapter 4.

5.5.6. California Native Plant Protection Act

The CNPPA of 1977 prohibits importation of rare and endangered plants into California, "take" of rare and endangered plants, and sale of rare and endangered plants. The CESA defers to the CNPPA, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to California Environmental Quality Act (CEQA). In this case, plants listed as rare under the California Native Plant Protection Act are not protected under CESA but rather under CEQA. No state-listed plants have been found in the project area.

Chapter 6. References

Adams, P. B., C. B. Grimes, J. E. Hightower, S. T. Lindley, and M. L. Moser. 2002. *Status Review for North American Green Sturgeon,* Acipenser medirostris. National Marine Fisheries Service Southwest Fisheries Science Center, U.S. Geological Survey North Carolina Cooperative Fish and Wildlife Research Unit, and National Marine Fisheries Service Northwest Fisheries Science Center.

Ayres et al. 1999. Spread of exotic cordgrassea and hybrids (*Spartina* sp.) in the tidal marshes of San Francisco Bay, California, USA.

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, eds. 2012. *The Jepson Manual: Vascular Plants of California*, second edition. Berkeley, CA: University of California Press.

Baxter, R., K. Hieb, S. DeLeon, K. Fleming, and J. Orsi. 1999. Report on the 1980–1995 fish, shrimp, and crab sampling in the San Francisco Estuary, California. California Department of Fish and Game. Interagency Ecological Program for the Sacramento-San Joaquin Estuary. Technical Report 63.

Bjornn, T. C., and D. W. Reiser. 1991. Habitat Requirements of Salmonids in Streams. Pages 83–138 in W. R. Meehan (ed.), *Influence of Forest and Rangeland Management on Salmonids Fishes and Their Habitats*. (Special Publication 19.) American Fisheries Society. Bethesda, MD.

[SFOBB FEIS 2001] California Department of Transportation (Caltrans). 2001. Final Environmental Impact Statement/Statutory Exemption/Section 4(f) Statement, San Francisco-Oakland Bay Bridge East Spans Seimsic Safety Project. May. Available: http://www.dot.ca.gov/dist4/sfobb/sfobbfeis.htm

Caltrans. 2009. The Caltrans Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish.

[CDFW] California Department of Fish and Wildlife. 2014a. California Natural Diversity Database, RareFind 5, Version 5.1.0. October 1, 2013. Oakland West Quad. Sacramento CA.

CDFW. 2014b. Chinook salmon escapement – all runs. Central Valley: Sacramento and San Joaquin river systems. Date compiled: April 22, 2014. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=84381&inline=1. Accessed: May 12, 2014.

[CDFA] California Department of Food and Agriculture. 2007. Pest Ratings of Noxious Weed Species and Noxious Weed Seed. Sacramento, CA: State of California, Department of Food and Agriculture, Division of Plant Health and Pest Prevention Services. January.

[Cal-IPC] California Invasive Plant Council 2006. California Invasive Plant Inventory. Berkeley, CA. Available: http://www.cal-ipc.org/ip/inventory/pdf/Inventory2006.pdf.

[CNPS] California Native Plant Society. 2014. *Inventory of Rare and Endangered Plants* (online edition, v7-). Available: <http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>. Accessed: October 14, 2013.

[Caltrans] California Department of Transportation. 2009. Technical guidance manual for the assessment of the hydroacoustic effects of pile driving on fish. Sacramento, CA.

City of Oakland. 2002. Draft Environmental Impact Report. Oakland Army Base Area Redevelopment Plan. State Clearinghouse Number 20002082058. Prepared by g. borchard & Associates for the City of Oakland.

Coastal Conservancy. 2010. California clapper rail surveys for the San Francisco Esturay invasive spartina project. protocol. Appendix 1. Clapper rail survey ptrotocols. Available: <http://www.spartina.org/project_documents/clapper_rails/2010_CLRA_Rpt_G-Compiled_Appendices.pdf>. Accessed August 10, 2014.

Coastal Conservancy 2015. Creosote Piling Removal and Pacific Herring Restoration Project. Available: http://www.sfestuary.org/wp-content/uploads/2015/09/24-Habitat-Restoration-Fish.pdf. Accessed December 13, 2015.

Cohen, D. A. 1895. The California clapper rail. Oologist 12(11): 171-173.

DeGroot, D. S. 1927. The California clapper rail: its nesting habits, enemies and habitat. Condor 29 (6) 259-270.

Delisle, J. M., and J. A. Savidge. 1996. Reproductive success of grasshopper sparrows in relation to edge. Prairie Naturalist 28:107–14.

Dixon, J. 1908. A new harvest mouse from the salt marshes of San Francisco Bay, California. Proc. Biol. Soc. Washington, 21:197-198.

Environmental Laboratory. 1987. *U.S. Army Corps of Engineers Wetlands Delineation Manual.* (Technical Report Y-87-1.) Vicksburg, MS: U.S. Army Waterways Experiment Station.

Federal Highway Administration and Caltrans. 2001. San Francisco-Oakland Bay Bridge east span seismic safety project. Final environmental impact statement/statutory exemption and final section 4(f) evaluation. April.

Fisheries Hydroacoustic Working Group. 2008. Agreement in principle for interim criteria for injury to fish from pile driving activities. Memorandum. June 12, 2008. Available: <http://www.dot.ca.gov/hq/env/bio/files/fhwgcriteria_agree.pdf>. Accessed: September 25, 2012.

Fisler, G. F. 1965. Adaption and speciation in harvest mice of the marshes of San Francisco Bay. Univ. Dalif. Publ. Zool. 77:1-108.

Gardali and Evens. 2008. San Francisco Common Yellowthorat (*Geothlypis trichas sinuosa*). California Bird Species of Special Concern- Species Accounts. Studies of Western Birds 1:346-350.

Gill, R. E., Jr. 1979. Status and distribution of the California clapper rail (*Rallus longirostris obsoletus*). Calif. Fish and Game 65:36-49.

[Goals Project] Monroe, M., P. R. Olofson, J. N. Collins, R. M. Grossinger, J. Haltiner, and C. Wilcox. 1999. Goals Project. A report of habitat recommendations prepared by the San Francisco Bay Area Eetlands Ecosystem Goals Project. Available: <http://www.sfei.org/node/2123>. Accessed: May 12, 2014.

Grinnell, J. 1915. A distributional list of the birds of Calfiornia. Pac. Coast Avifauna 11.

Grinnell, J. and A. H. Miller 1944. The Distribution of the Birds of California. Pac. Coast Avifauna 27.

Guzy, M. J., and Ritchison, G. 1999. Common Yellowthroat (*Geothlypis trichas*), in The Birds of North America (A. Poole and F. Gill, eds.), no. 448. Birds N. Am., Philadelphia.

[ICF] ICF International. 2014. *Preliminary Delineation of Waters of the U.S. for the Gateway Park Project, Alameda County, California*. Draft. September. (ICF 00101.13) Oakland, CA. Prepared for the California Department of Transportation District 4, Oakland, CA.

IUCN. 2014. The **IUCN** Red List of Threatened Species. 2014.2. Available: <http://www.iucnredlist.org/>. Accessed: August 10, 2014.

Keldsen, T. J. 1997. Potential impacts of climate change on California clapper rail habitat of South San Francisco Bay. MS thesis, Colorado State University.

Kynard, B., E. Parker, and T. Parker. 2005. Behavior of early life intervals of Klamath River green sturgeon, *Acipenser medirostris*, with a note on body color. Environmental Biology of Fishes (2005) 72: 85-97.

Merkel and Associates, Inc., 2013. Eelgrass Distribution and Status within San Francisco Bay, July 2013 Regional Eelgrass Monitoring Results. Prepared for: NMFS Habitat Conservation Division.

Merz, J. E., P. S. Bergman, J. F. Melgo, and S. Hamilton. 2013. Longfin smelt: spatial dynamics and ontogeny in the San Francisco Estuary, California. California Fish and Game 99 (3): 122-148; 2013. Available: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=75568&inline=1>. Accessed: April 30, 2014.

Moyle, P. B. 2002. *Inland Fishes of California.* 2nd edition. Berkeley, CA: University of California Press.

Myrick, C. A., and J. J. Cech., Jr. 2001. Temperature Effects on Chinook Salmon and Steelhead: A Review Focusing on California's Central Valley Populations. Bay-Delta Modeling Forum. Available: <http://cwemf.org/Pubs/TempReview.pdf>.

National Audubon Society. 2011. Least tern

[NISC] National Invasive Species Council. 2008. 2008–2012 National Invasive Species Management Plan. August. Available: http://www.invasivespecies.gov/home_documents/2008-2012%20National%20Invasive%20Species%20Management%20Plan.pdf. Accessed: September 30, 2014.

[NMFS] National Marine Fisheries Service. 2000. Biological Opinion on the Impact of Central Valley Project (CVP) and State Water Project (SWP) Operations on the Federally Threatened Central Valley Steelhead. National Oceanic and Atmospheric Administration.

NMFS. 2013. Green sturgeon (*Acipenser medirostris*). Available: <http://www.nmfs.noaa.gov/pr/species/fish/greensturgeon.htm>. Last updated: March 22, 2013. Accessed: May 12, 2014.

Raleigh, R. F., T. Hickman, R. C. Solomon, and P. C. Nelson. 1984. *Habitat Suitability Information: Rainbow Trout.* FWS/OBS-82/10.60 64 pp. Washington DC: U.S. Fish and Wildlife Service.

Reynolds, F. L., T. Mills, R. Benthin, and A. Low. 1993. Central Valley anadromous fisheries and associated riparian and wetlands areas protection and restoration action plan. Draft. California Department of Fish and Game, Inland Fisheries Division. Sacramento, CA.

San Francisco Bay Area Wetlands Ecosystem Goals Project. 1999. Baylands Ecosystem Habitat Goals- A Report of Habitat Recommendations. Available: <http://baeccc.org/pdf/sfbaygoals031799.pdf>.

San Francisco Bay Subtidal Habitat Goals Project. 2014. Soft substrate habitat distribution and stressors. Available: http://sfbaysubtidal.org/map_portal/SoftSubstrate.html. Accessed: August 19, 2014.

[SFOBB] San Francisco Oakland Bay Bridge FEIS. 2001 Federal Highway Administration and Caltrans. 2001. San Francisco-Oakland Bay Bridge east span seismic safety project. Final environmental impact statement/statutory exemption and final section 4(f) evaluation. April.

Shellhammer, H. R. Duke, and M. C. Orland. 2006. Use Of Brackish Marshes In The South San Francisco Bay By Salt Marsh Harvest Mice. Los Gatos, CA.

Shuford, W. D. 1993. The Marin County breeding bird atlas, a distributional and natural history of coastal California birds (California avifauna series) Bushtit Books. Available: <https://openlibrary.org/search?language=& publisher_facet=Bushtit+Books>. Accessed: August 15, 2014.

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Spautz et al. 2005. California Black Rail (*Laterallus jamaicensis coturniculus*) distribution and abundance in relation to habitat and landscape features in San Francisco Bay estuary. In. C.J. Ralph and T.D. Rich [eds], Bird conservation implementation and integration in the Americas: Proceedings of the Third International Partners in Flight Conference 2002 March 20-24; Asilomar, California, Vol. 1. General Technical Report PSW-GTR-191. U.S. Department of Agriculture Forest Service, Pacific Southwest Research Station, Albany, CA.

Spautz and Yvonne 2008. Alameda Song Sparrow (*Melospiza melodia pusillula*). California Bird Species of Special Concern- Species Accounts. Studies of Western Birds 1:419-424.

Stevens, D. E. 1989. When do winter-run Chinook salmon smolts migrate through the Sacramento-San Joaquin Delta? Memorandum: June 19, 1989. California Department of Fish and Game. Stockton, CA.

Takekawa et al. 2006. The Tubbs Setback Restoration Project: 2006 Final Report. U.S. Geological Survey. Vallejo, CA.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, and National Marine Fisheries Service. 1996. Magnuson-Stevens Fishery Conservation and Management Act.

[USFWS] U.S. Fish and Wildlife Service. 2000. California Clapper Rail Draft Survey Protocol.

USFWS. 2002. Shorebirds Waders of Shores, Wetlands and Grasslands.

USFWS. 2006. California Least Tern, 5- year Review, Summary and Evaluation. Available: http://www.fws.gov/cno/es/California%20least%20tern%205-year%20review.FINAL.pdf. Accessed December 13, 2015.

USFWS. 2011. Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program (HAD-CA, File #: Section 7 with Ventura USFWS, Document #: S38192) (1-8-02-F-68). Ventura, CA.

USFWS. 2013. Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California. August. Available: <http://www.fws.gov/sacramento/es/Recovery-Planning/Tidal-Marsh/Documents/TMRP_Volume1_RP.pdf>. Accessed: September 30, 2014.

USFWS. 2014. Natural Resources of Concern. January 14, 2014. Species list from Sacramento Fish and Wildlife Office, Sacramento, CA.

Walton, B. J. 1978. The status of the salt marsh song sparrows of the San Francisco Bay system, 1974-1976. M.S. thesis, Dept. Biol. Sci., San Jose State Univ., San Jose, CA.

Williams, L. 1929. Notes on the feeding habits and behavior of the Calfiornia clapper rail. Condor 31(2): 52-56.

Appendix A California Native Plant Society Inventory of Special- Status Plants with Potential to Occur within the Project Area

Appendix A California Native Plant Society Inventory of Special- Status Plants with Potential to Occur within the Project Area

Common Name (Scientific Name)	Status	Preferred Habitat	Habitat Present/ Absent
Bent-flowered fiddleneck (*Amsinckia lunaris*)	List 1B.2	• Coastal bluff scrub • Cismontane woodland • Valley and foothill grassland	Absent
Alkali milk-vetch (*Astragalus tener* var. *tener*)	List 1B.2	• Playas • Valley and foothill grassland • Vernal pools	Absent
San Joaquin spearscale (*Atriplex joaquiniana*)	List 1B.2	• Chenopod scrub • Meadows and seeps • Playas; alkaline soils • Valley and foothill grassland	Absent
Round-leaved filaree (*California macrophylla*)	List 1B.1	• Cismontane woodland • Valley and foothill grassland	Absent
*Point Reyes bird's-beak** (*Chloropyron maritimum* ssp. *Palustre*)	List 1B.2	• Marshes and swamps (coastal salt)	Present
*San Francisco Bay spineflower** (*Chorizanthe cuspidata* var. *cuspidate*)	List 1B.2	• Coastal bluff scrub (sandy) • Coastal dunes • Coastal prairie • Coastal scrub	Present
Blue coast gilia (*Gilia capitata* ssp. *Chamissonis)*	List 1B.1	• Coastal dunes • Coastal scrub	Present
Santa Cruz tarplant (*Holocarpha macradenia*)	List 1B.1	• Coastal prairie • Coastal scrub • Valley and foothill grassland	Absent
Kellogg's horkelia (*Horkelia cuneata* var. *sericea*)	List 1B.1	• Sandy or gravelly openings • Closed-cone coniferous forest • Chaparral (maritime) • Coastal dunes • Coastal scrub	Absent
Choris' popcorn-flower (*Plagiobothrys chorisianus var. chorisianus*)	List 1B.2	• Chaparral • Coastal prairie • Coastal scrub	Absent
Adobe sanicle (*Sanicula maritima*)	List 1B.1	• Chaparral • Coastal prairie • Meadows and seeps • Valley and foothill grassland • Clay and serpentine soils	Absent
Aaline clover (*Trifolium hydrophilum*)	List 1B.2	• Marshes and swamps • Valley and foothill grassland (mesic, alkaline) • Vernal pools	Absent

Appendix B California Department of Fish and Wildlife, California Natural Diversity Database

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Oakland West (3712273))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Accipiter cooperii Cooper's hawk	G5 S3	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	30 30	102 S:1	0	0	0	0	0	1	0	1	1	0	0
Ambystoma californiense California tiger salamander	G2G3 S2S3	Threatened Threatened	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	20 20	1094 S:1	0	0	0	0	1	0	1	0	0	0	1
Amsinckia lunaris bent-flowered fiddleneck	G2? S2?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive		64 S:1	0	0	0	0	0	1	1	0	1	0	0
Antrozous pallidus pallid bat	G5 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	210 210	402 S:1	0	0	0	0	0	1	1	0	1	0	0
Astragalus tener var. tener alkali milk-vetch	G2T2 S2	None None	Rare Plant Rank - 1B.2	20 30	65 S:2	0	0	0	0	2	0	2	0	0	1	1
Atriplex joaquinana San Joaquin spearscale	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive		109 S:1	0	0	0	0	1	0	1	0	0	1	0
California macrophylla round-leaved filaree	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive		155 S:1	0	0	0	0	1	0	1	0	0	0	1
Carex comosa bristly sedge	G5 S2	None None	Rare Plant Rank - 2B.1	0 0	29 S:1	0	0	0	0	1	0	1	0	0	1	0
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	G4?T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	5 5	61 S:2	0	0	0	0	2	0	2	0	0	2	0
Chorizanthe cuspidata var. cuspidata San Francisco Bay spineflower	G2T1 S1	None None	Rare Plant Rank - 1B.2	20 20	20 S:1	0	0	0	0	1	0	1	0	0	0	1
Chorizanthe robusta var. robusta robust spineflower	G2T1 S1	Endangered None	Rare Plant Rank - 1B.1 BLM_S-Sensitive	30 30	22 S:1	0	0	0	0	1	0	1	0	0	1	0
Cicindela hirticollis gravida sandy beach tiger beetle	G5T2 S1	None None		10 10	34 S:1	0	0	0	0	1	0	1	0	0	0	1

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Circus cyaneus northern harrier	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	5 5	43 S:1	0	0	0	0	0	1	0	1	1	0	0
Corynorhinus townsendii Townsend's big-eared bat	G3G4 S2S3	None Candidate Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	710 710	396 S:1	0	0	0	0	0	1	1	0	1	0	0
Elanus leucurus white-tailed kite	G5 S3	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	5 5	158 S:1	0	1	0	0	0	0	1	0	1	0	0
Eucyclogobius newberryi tidewater goby	G3 S2S3	Endangered None	AFS_EN-Endangered CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	5 10	117 S:2	0	0	0	0	1	1	2	0	1	0	1
Geothlypis trichas sinuosa saltmarsh common yellowthroat	G5T2 S2	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	7 7	111 S:1	0	0	1	0	0	0	1	0	1	0	0
Gilia capitata ssp. chamissonis blue coast gilia	G5T2 S2	None None	Rare Plant Rank - 1B.1	100 100	29 S:1	0	0	0	1	0	0	0	1	1	0	0
Hemizonia congesta ssp. congesta white seaside tarplant	G5T2T3 S2S3	None None	Rare Plant Rank - 1B.2		33 S:1	0	0	0	0	0	1	1	0	1	0	0
Heteranthera dubia water star-grass	G5 S1	None None	Rare Plant Rank - 2B.2		9 S:1	0	0	0	0	0	1	1	0	1	0	0
Holocarpha macradenia Santa Cruz tarplant	G1 S1	Threatened Endangered	Rare Plant Rank - 1B.1	100 100	37 S:2	0	0	0	0	2	0	2	0	0	0	2
Horkelia cuneata var. sericea Kellogg's horkelia	G4T2 S2?	None None	Rare Plant Rank - 1B.1 USFS_S-Sensitive	20 20	38 S:2	0	0	0	0	2	0	2	0	0	2	0
Lasiurus cinereus hoary bat	G5 S4?	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority	325 325	235 S:2	0	0	0	0	0	2	2	0	2	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Laterallus jamaicensis coturniculus California black rail	G4T1 S1	None Threatened	ABC_WLBCC-Watch List of Birds of Conservation Concern BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_NT-Near Threatened USFWS_BCC-Birds of Conservation Concern	6 6	241 S:1	0	0	1	0	0	0	0	1	1	0	0
Layia carnosa beach layia	G2 S2	Endangered Endangered	Rare Plant Rank - 1B.1	40 40	22 S:1	0	0	0	0	1	0	1	0	0	0	1
Leptosiphon rosaceus rose leptosiphon	G1 S1	None None	Rare Plant Rank - 1B.1		25 S:1	0	0	0	0	1	0	1	0	0	1	0
Melospiza melodia pusillula Alameda song sparrow	G5T2? S2?	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	5 20	38 S:5	0	2	0	0	0	3	3	2	5	0	0
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	G3 S3.2	None None			53 S:1	0	0	0	0	0	1	1	0	1	0	0
Nyctinomops macrotis big free-tailed bat	G5 S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_MH-Medium-High Priority	175 175	32 S:1	0	0	0	0	0	1	1	0	1	0	0
Phalacrocorax auritus double-crested cormorant	G5 S3	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	30 30	37 S:1	0	0	0	0	0	1	1	0	1	0	0
Plagiobothrys chorisianus var. chorisianus Choris' popcornflower	G3T2Q S2.2	None None	Rare Plant Rank - 1B.2	20 20	12 S:1	0	0	0	0	1	0	1	0	0	0	1
Polygonum marinense Marin knotweed	G2Q S2	None None	Rare Plant Rank - 3.1		32 S:1	0	0	0	0	0	1	1	0	1	0	0
Rallus longirostris obsoletus California clapper rail	G5T1 S1	Endangered Endangered	ABC_WLBCC-Watch List of Birds of Conservation Concern CDFW_FP-Fully Protected	0 1	92 S:2	0	1	1	0	0	0	0	2	2	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Reithrodontomys raviventris salt-marsh harvest mouse	G1G2 S1S2	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	3 3	137 S:1	0	0	0	0	0	1	1	0	1	0	0
Sanicula maritima adobe sanicle	G2 S2.2	None Rare	Rare Plant Rank - 1B.1 USFS_S-Sensitive		16 S:1	0	0	0	0	1	0	1	0	0	0	1
Scapanus latimanus parvus Alameda Island mole	G5T1Q S1	None None	CDFW_SSC-Species of Special Concern	10 30	8 S:7	0	0	0	0	0	7	7	0	7	0	0
Spirinchus thaleichthys longfin smelt	G5 S1	Candidate Threatened	CDFW_SSC-Species of Special Concern	0 0	45 S:2	0	0	0	0	0	2	0	2	2	0	0
Sternula antillarum browni California least tern	G4T2T3Q S2S3	Endangered Endangered	ABC_WLBCC-Watch List of Birds of Conservation Concern CDFW_FP-Fully Protected	10 10	67 S:1	0	1	0	0	0	0	0	1	1	0	0
Trachusa gummifera San Francisco Bay Area leaf-cutter bee	G1 S1	None None		200 200	2 S:1	0	0	0	0	0	1	1	0	1	0	0
Trifolium hydrophilum saline clover	G2 S2	None None	Rare Plant Rank - 1B.2		49 S:3	0	0	0	0	3	0	3	0	0	0	3
Tryonia imitator mimic tryonia (=California brackishwater snail)	G2G3 S2S3	None None	IUCN_DD-Data Deficient	0 0	39 S:1	0	0	0	0	1	0	1	0	0	0	1

Appendix C U.S. Fish and Wildlife Service, Federal Endangered and Threatened Species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 140613040926

Current as of: June 13, 2014

Quad Lists

Listed Species

Fish

Acipenser medirostris
- green sturgeon (T) (NMFS)

Eucyclogobius newberryi
- tidewater goby (E)

Hypomesus transpacificus
- delta smelt (T)

Oncorhynchus kisutch
- coho salmon - central CA coast (E) (NMFS)

Oncorhynchus mykiss
- Central California Coastal steelhead (T) (NMFS)
- Central Valley steelhead (T) (NMFS)
- Critical habitat, Central California coastal steelhead (X) (NMFS)

Oncorhynchus tshawytscha
- Central Valley spring-run chinook salmon (T) (NMFS)
- Critical habitat, winter-run chinook salmon (X) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Rana draytonii
- California red-legged frog (T)

Reptiles

Masticophis lateralis euryxanthus
- Alameda whipsnake [=striped racer] (T)

Birds

Charadrius alexandrinus nivosus
- western snowy plover (T)

Pelecanus occidentalis californicus
- California brown pelican (E)

Rallus longirostris obsoletus
- California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
- California least tern (E)

Mammals

Reithrodontomys raviventris
- salt marsh harvest mouse (E)

Plants

Holocarpha macradenia
- Santa Cruz tarplant (T)

Layia carnosa
- beach layia (E)

Suaeda californica
- California sea blite (E)

Quads Containing Listed, Proposed or Candidate Species:

OAKLAND WEST (466D)

County Lists

No county species lists requested.

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.
See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then

that agency must engage in a formal consultation with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be September 11, 2014.

Appendix D Preliminary Delineation of Waters of the U.S.

Preliminary Delineation of Waters of the U.S. for the Gateway Park Project, Alameda County, California

Prepared for:

Caltrans District 4
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Oakland, CA 94612
Contact: Chris States
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Prepared by:

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San Francisco, CA 94107
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September 2014

ICF International. 2014. *Preliminary Delineation of Waters of the U.S. for the Gateway Park Project, Alameda County, California*. Draft. September. (ICF 00101.13) Oakland, CA. Prepared for the California Department of Transportation District 4, Oakland, CA.

Executive Summary

This report presents the results of a delineation of waters of the United States, including wetlands, conducted for the Gateway Park Project (Project). The ±156-acre delineation study area (study area) is located south of the Oakland touchdown located of the new East Span of the Bay Bridge in Oakland, Alameda County. The delineation was conducted to assist the California Department of Transportation District 4 (Caltrans) in determining the location and extent of wetlands and other waters of the United States that would be regulated by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

ICF International (ICF) staff Jillian Burns and Torrey Edell delineated the study area on June 6 and 7, 2013, using the routine on-site method outlined in the Corps *Wetlands Delineation Manual* (Environmental Laboratory 1987) and, where applicable, criteria specified in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement) (U.S. Army Corps of Engineers 2008).

In summary, a total of 2.2 acres of potentially jurisdictional wetlands and 19.55 acres of other waters of the United States were delineated in the study area. **Table ES-1** summarizes the habitat types and acreages that were delineated as jurisdictional waters of the United States and the regulatory status of each type.

Table ES-1. Summary of Acreages of Waters of the United States Delineated in the Study Area

Habitat Type	Jurisdictional Status	Acreage Delineated in the Study Area
Tidal salt marsh	Wetland	2.19
Seasonal wetland	Wetland	0.01
Total wetlands		**2.2**
Open Water	Other waters of the U.S.	19.1
V-Ditch	Other waters of the U.S.	0.45
Total other waters		**19.55**
Total waters of the U.S.		**21.75**

A description of waters of the United States, including wetlands, identified in the delineation study area is provided in Chapter 3, *Results*, of this report and their locations are shown in **Attachment A**. Jurisdictional acreages presented in this report should be considered preliminary because they are subject to verification by the San Francisco District of the Corps.

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Attachment B Routine Wetland Delineation Data Forms
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Acronyms and Abbreviations

Arid West Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region
Bay Bridge	San Francisco Oakland Bay Bridge
Corps	U.S. Army Corps of Engineers
Corps	U.S. Army Corps of Engineers
Crescent	Emeryville Crescent
GIS	geographic information system
I-580	Interstate 580
I-80	Interstate 80
I-880	Interstate 880
ICF	ICF International
ICF	ICF International
MHWM	mean high water mark
OHWM	ordinary high water mark
Project	Gateway Park Project
Trimble GPS receiver	Trimble GeoXT global positioning system receiver

Chapter 1

Introduction and Description of General Site Conditions

Introduction

This report presents the results of a delineation of waters of the United States, including wetlands, conducted for the Gateway Park Project (Project) in Oakland, Alameda County. The Project is the creation of a new park at the east touchdown of the San Francisco Oakland Bay Bridge (Bay Bridge) (**Figures 1 and 2**).

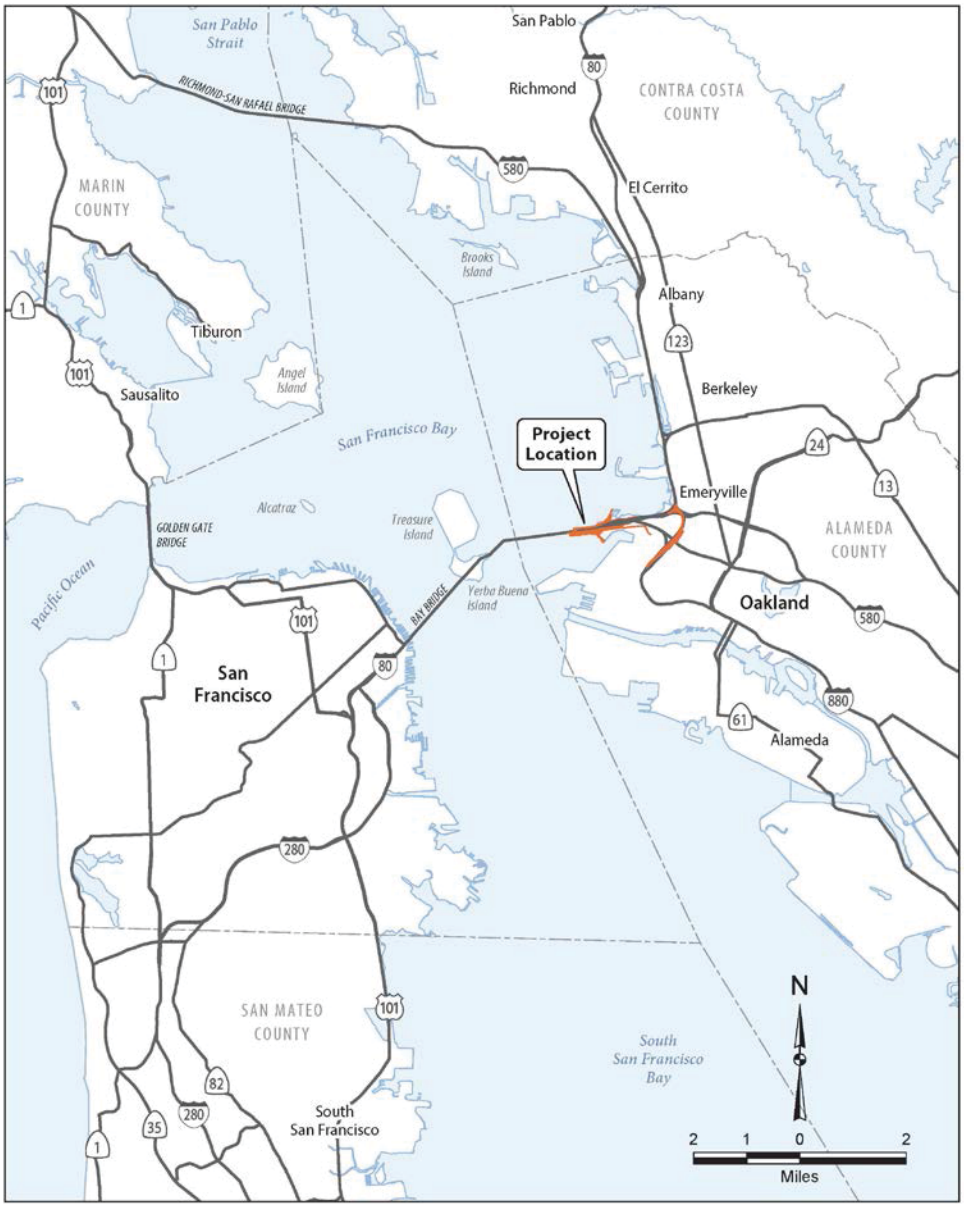


Figure 1
Project Location



Figure 2
Project Area

Project Purpose

The purpose of the Project is to provide a gateway to both the new East Span of the Bay Bridge and the City of Oakland, safe access to the new bicycle/pedestrian path on the new East Span and to other regional trails, and access to the shoreline and recreation opportunities.

The Project includes the following four park areas, each with different park features: Bridge Yard, Key Point, Port Playground, and Radio Beach (**Figure 3**). The Project would be developed in three phases between 2015–2030, as funding becomes available.

All areas containing potentially jurisdictional waters of the U.S. within the delineation study area that are proposed to be impacted during implementation of the Project were assessed. *This delineation report was prepared by Torrey Edell, botanist with ICF International (ICF).* This report is intended to comply with the San Francisco guidelines and the South Pacific Division map standards for wetland delineations and jurisdictional determinations.

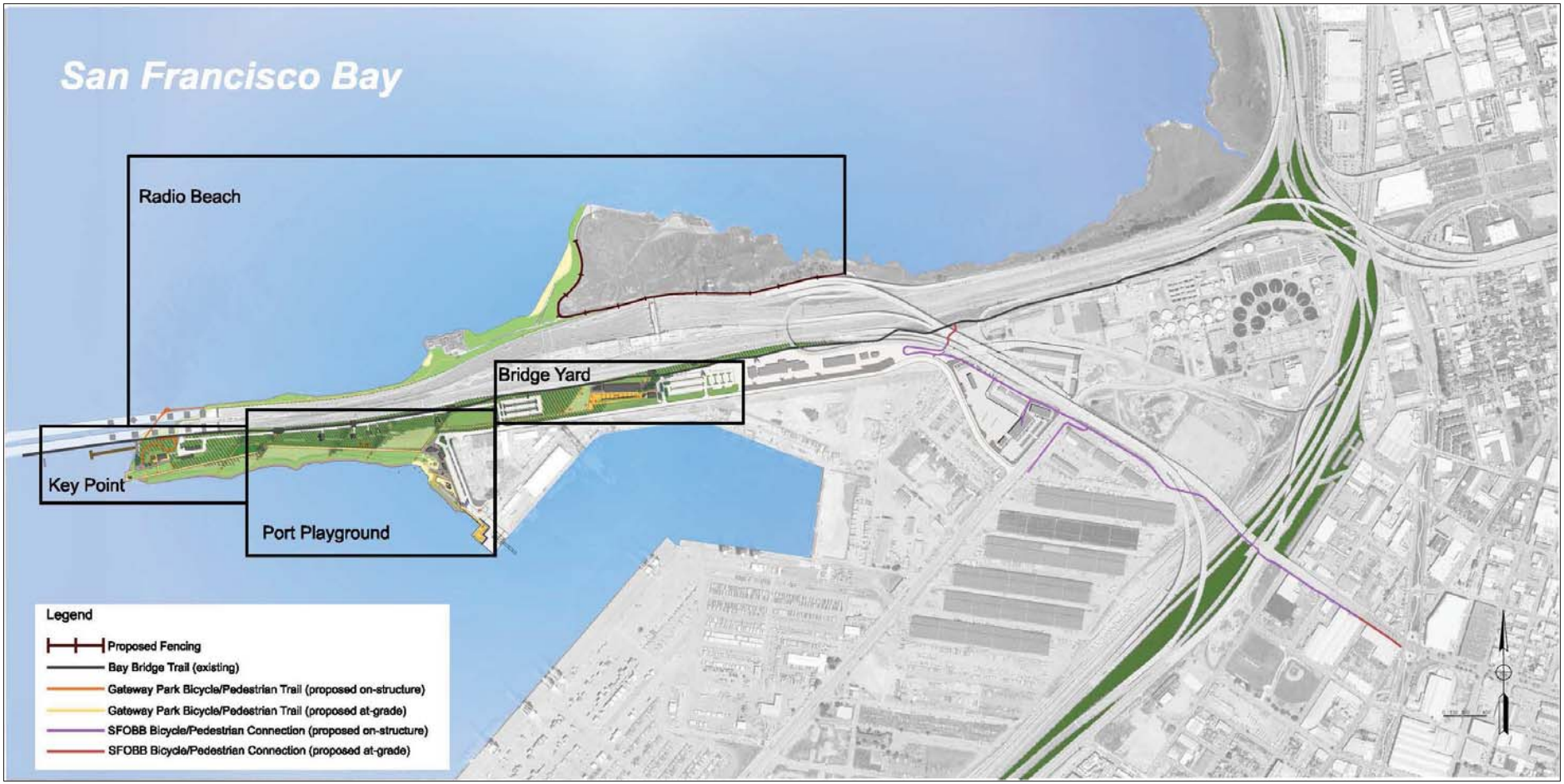


Figure 3
Park Areas

Organization of Report

This report consists of four chapters:

- Chapter 1, "Introduction and Description of General Site Conditions," presents a brief introduction of the project and study area and includes a summary of hydrology, vegetation, and soil conditions observed in the study area.
- Chapter 2, "Delineation Methods," includes terms used in this report and a description of the delineation study area and field delineation methods.
- Chapter 3, "Results," presents the results of the wetland delineation.
- Chapter 4, "References," includes printed references and personal communications cited in the text.

Following Chapter 4, this report also includes three attachments:

- Attachment A, "Preliminary Delineation Maps," depicts the wetlands and other waters of the U.S. delineated in the study area.
- Attachment B, "Routine Wetland Delineation Data Forms," includes the vegetation, soil, and hydrology data collected from the delineation study area.
- Attachment C, "Representative Photographs," includes photographs of wetland types identified in the delineation study area.

Project Location

The ±156-acre delineation study area is located along the East Bay waterfront near the touchdown of the new East Span of the Bay Bridge (latitude 37.822702, longitude -122.321478) to Wood Street in West Oakland (latitude 37.816787, longitude -122.289441) (**Figures 1 and 2**). The Project is located in the West Oakland 7.5 minute U.S. Geological Survey quadrangle.

Driving Directions

To reach the northern extent of the delineation study area from San Francisco, take the Interstate 80 (I-80) east toward Bay Bridge/Oakland. Take the Powell Street exit toward Emeryville and turn left onto Powell Street. Make a U-turn at Captain Drive and take a slight right to merge onto I-80 West. Drive for approximately 1.3 miles and take the West Grand Avenue/Maritime Street exit. After 0.2 mile turn right and drive approximately 0.5 mile to reach the existing Radio Beach access road. The study area is located on the southwest side of the access road.

To reach the eastern extent of the delineation study area from Radio Beach, head east and turn right onto the ramp to Maritime Street. Keep right at the fork, following signs for Maritime Street/Harbor Terminals/7th Street and merge onto Maritime Street. After approximately 0.1 mile turn right onto Burma Road. The study area surrounds Burma Road on both the northern and southern sides of the road.

Description of General Site Conditions

This section presents an overview of the Project's geographic setting, as well as the hydrologic, vegetation, and soil conditions in the delineation study area.

General Setting

The delineation study area is located within the Central Coast geographic region (Baldwin et al. 2012), which is defined by tidal wetlands and lower stream reaches on coastal plains. The Central Coast region is bound by the Diablo Range, which makes up a portion of the surrounding San Francisco Bay Area geographical region. Both regions are characterized by a diversity of terrains, ecological habitats, and vegetation types.

The delineation study area is situated in a highly disturbed floodplain/tidal salt marsh area. Currently, the site serves mostly as a Caltrans maintenance yard and staging area for the construction of the new Bay Bridge east span, which was completed in 2013. It contains a number of small, temporary and permanent buildings. It is bordered by San Francisco Bay on its north, west, and south sides. The eastern approach to the Bay Bridge sits on a man-made spit that extends out into the San Francisco Bay. The site is generally flat, rising approximately 1.5 to 3 meters (5 to 10 feet) above sea level. The area is a formal tidal flat that was filled prior to the construction of the original Bay Bridge in the 1930's. The source of the fill is not known, but it was likely a combination of dredged soil and imported fill, including some rubble and other debris. Due to the fill, settlement of the underlying Young Bay Mud has likely occurred, creating mud that is stronger than its nearby marine counterpart (Federal Highway Administration and Caltrans 2001). With the exception of V-ditch and altered areas adjacent to the Radio Beach paved access road, slopes are nearly level in most areas. The V-ditch and Radio Beach access road slopes are approximately 2:1 (horizontal:vertical).

There are several highways surrounding the delineation study area including: I-80 which extends across the Bay Bridge into San Francisco, Interstate 580 (I-580) which connects from I-80 to Sacramento, and Interstate 880 (I-880) which connects southwards along the East Bay to San Jose and Santa Clara County. To the southeast of the Gateway Park area is the Port of Oakland, which has been in operation since 1927 and is currently the fourth largest container port in the country, with 10 container terminals and two intermodal rail facilities.

Influenced by the Pacific Ocean, the climate in the delineation study area varies little year round; foggy summers and light rainfall are typical. Precipitation falls as rain during the late fall, winter, and early spring months.

Hydrology

For the purposes of this report, the delineation study area is located entirely in the San Francisco Bay watershed hydrologic unit. The hydrologic unit corresponds to the natural division between watershed boundaries and is based on the U.S. Environmental Protection Agency's hydrologic unit maps (U.S. Environmental Protection Agency 2001).

The study area is influenced by tidal action. Tidal salt marsh is located on the edge of the San Francisco Bay and receives water from daily tidal fluctuations and storm events. To a lesser extent, these areas receive some water from precipitation and urban runoff.

The Radio Beach tidal salt marsh is connected to the Emeryville Crescent (Crescent), which is a 1.6 kilometer (1 mile) stretch of shoreline in Emeryville that support a large tidal marsh, via a narrow strip of marsh habitat adjacent to I-80 (**Figure 2**). The Emeryville Crescent and Radio Beach marsh appear to have increased in size over time as the majority of the marsh is not visible on historical aerial images from 1949 (Google Earth 2013). It is assumed these marshes developed as a result of the impoundment of San Francisco Bay with the construction of the Bay Bridge between 1933 and 1936 and associated filling of the Bay, as well as natural filling since that time. An asphalt access road currently bisects Radio Beach into two sections, leaving a smaller impounded portion between the sand dunes and the paved road (**Attachment A**). It is assumed that these areas were historically connected prior to the placement of fill.

The remaining landscape in the study area has been largely developed and, as such, there are no natural drainages in the study area. The large V-ditch near the center of the study area is utilized as a stormwater outfall from the toll plaza. It is a key component in the transfer system for treated water after it leaves the bio-retention basin.

Vegetation

The delineation study area supports two upland vegetation types:

- ruderal
- developed

Four types of wetlands and other waters of the U.S. are found in the delineation study area:

- tidal salt marsh
- seasonal wetland
- open water
- V-ditch

Soils

The USDA Natural Resources Conservation Service (2013) has mapped the soils within the delineation study area as urban land. The primary component is 95 percent urban land, and the inclusion is 5 percent unnamed soils in marshes. The marsh soil component is found on basin floors/toeslopes and is hydric, while the urban land component is non-hydric.

Precipitation and Growing Season

The climate in the delineation study area is characterized by warm, dry summers and cool, moist winters. National Weather Service cooperative weather station number CA 6336 (Oakland Museum) is the closest weather station to the delineation study area, located approximately 4.5 miles to the northwest. Average annual precipitation at this weather station is 21.8 inches, with most occurring from November to March (Western Regional Climate Center 2014).

The delineation field survey was conducted in early June 2013, and the precipitation to date for the season (i.e., precipitation year June, 1 2012–May 30, 2013) was approximately 42 percent of the average in the vicinity of Oakland Museum weather station.

The growing season at the Oakland Museum weather station is year-round with average air temperatures between 51.8 and 67 degrees Fahrenheit t (Western Regional Climate Center 2014).

Chapter 2
Delineation Methods

The methods used to delineate waters of the United States, including wetlands, in the delineation study area are described below.

Review of Existing Information

The following information was reviewed before the field delineation was conducted:

- USGS West Oakland 7.5-minute quadrangle maps
- 1 inch = 160 foot scale aerial photographs of the study area
- Soil survey information
- National Wetland Inventory maps

Field Delineation Methods for Potentially Jurisdictional Wetlands

ICF staff Jillian Burns and Torrey Edell delineated the study area on June 6 and 7, 2013, using the routine on-site method outlined in the U.S. Army Corps of Engineers (Corps) *Wetlands Delineation Manual* (Environmental Laboratory 1987) and, where applicable, criteria specified in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement) (U.S. Army Corps of Engineers 2008).

Potentially jurisdictional wetlands were grouped into wetland types based on vegetation composition (e.g., seasonal, tidal). Data was obtained from representative wetland types, with a minimum of 5 percent hydrophytic plant cover, and adjacent upland areas to develop a rationale for delineating the jurisdictional wetland-upland boundary. Vegetation, soil, and hydrology characteristics were evaluated and recorded on Arid West Supplement data forms (**Attachment B**). A Trimble GeoXT global positioning system receiver (Trimble receiver), typically accurate to less than 1 meter horizontally, was used to record the location of data points and wetlands. Arid West Supplement data forms were completed at 15 data collection sites (data points).

The wetland indicator status of each plant species was based on the *National Wetland Plant List for the Arid West* (Lichvar et al. 2014). Common and scientific plant names were taken from *The Jepson Manual,* second edition (Baldwin et al. 2012).

Field Delineation Methods for Other Waters of the United States

Other waters of the United States were delineated based on the mean high water line (MHWL) and the ordinary high water mark (OHWM). The MHWL, the average of all the high water heights observed in the National Tidal Datum Epoch (NOAA 2013), defines the jurisdictional boundary of tidally influenced areas along the shore of land immediately bordering navigable waters, whereas the OHWM defines the jurisdictional boundary in non-tidally influenced areas. Field indicators for the OHWM boundary were identified using *the Field Guide to the Identification of the Ordinary High Water Mark* for the Arid West (Lichvar and McColley 2008). Field indicators of the OHWM included a defined wrack line, changes in vegetation, muddy point bars, accumulation of seashore material (e.g. shells, smooth rocks, beach glass, sea life), saturated ground/standing water. Aerial photography and USGS topographic maps were also used to verify field observations. The OHWM was identified when delineating the concrete V-ditch that carries water through the center of the study area. During the field surveys, the location of the OHWM was mapped with a Trimble receiver. However, where physical access to the boundary was poor, the features were mapped directly onto a recent 1 inch=160 foot color aerial photograph. Features depicted on aerial photographs were digitized into a geographic information system (GIS) data layer. This mapping was added to the data layer collected with the Trimble receiver to generate the delineation map at a scale of 1 inch=200 feet in GIS (**Attachment A**).

The MHWL was mapped in GIS based on tidal datum elevations using the flooding/shoreline analysis from CH2M Hill, who calculated the approximate MHWL limit at an elevation of 5.75 feet NAVD in the study area (CH2M Hill 2013).

Chapter 3
Results

A description of the wetlands and other waters of the United States mapped in the delineation study area are provided below, and their locations are shown in **Attachment A**. *All jurisdictional area boundaries presented in this report are preliminary and subject to verification by the San Francisco District of the Corps.* Photographs of representative wetlands and other waters of the U.S. are provided in **Attachment C**.

Jurisdictional Wetlands

A total of 2.2 acres of potentially jurisdictional wetlands were delineated in the study area. **Table 1** provides the individual areas (in acres) of each jurisdictional habitat type in the delineation study area. Vegetation, soil, and hydrologic data collected at representative data points are discussed for each wetland type below.

Table 1. Summary of Acreages of Wetlands Delineated in the Study Area

Habitat Type	Jurisdictional Status	Acreage Delineated in the Study Area
Tidal salt marsh	Wetland	2.19
Seasonal wetland	Wetland	0.01
Total		**2.2**

Seasonal Wetland

A total of 0.01 acre of seasonal wetland was delineated in the study area. The seasonal wetland is located on the south side of I-80 in a shallow topographic depression on the southern margin of Burma Road. The wetland is supported primarily by rainfall and surface water runoff from adjacent uplands and paved surfaces. The wetland contains a storm drain in the center, the outlet of which is unknown. Vegetative cover in the seasonal wetland was patchy.

Although the wetland is isolated from tidal influence, it is assumed that high soil salinities are supporting sporadic patches of some species typically found in a salt marsh community. The seasonal wetland community met the hydrophytic vegetation criterion based on a dominance of seaside barley (*Hordeum marinum*) (FAC), cut-leaf plantain (*Plantago coronopus*) (FACW), pickleweed (*Salicornia pacifica*) (OBL), and perennial rye grass (*Festuca perennis*) (FAC). Wetland hydrology was documented by inundation visible on aerial imagery (B7) and drainage patterns (B10). Compacted soils prevented data collection at the depth necessary to determine if hydric soils are present. However, since a small amount of redox concentrations were observed within the upper 6 inches of the soil, and hydrophytic vegetation and wetland hydrology are present, it is assumed redox concentrations would continue to greater depths. Therefore hydric soils are assumed to be present. Representative data points S1 and S2 (**Attachments A and B**) pertain to the wetland-upland boundary.

The seasonal wetland is assumed to be non-jurisdictional.; although the storm drain likely outlets into the Bay, it drains only uplands.

Tidal Salt Marsh

A total of 2.19 acres of tidal salt marsh were delineated in the study area. The tidal salt marsh community is located on the north side of I-80 at Radio Beach. As described in the hydrology section, the tidal marsh areas flanking the Radio Beach access road are separated by a paved road but are assumed to have been historically connected. Other small patches of hydrophytic vegetation are scattered throughout the 3-Tower Point area[1] (**Attachment A**). A partially paved and partially unpaved dirt road extends through the center of the area, allowing access to the narrow strip of sandy beach to the northwest and to the 3-Tower Point to the west. The road, as well as other fill scattered throughout the Radio Beach area, precludes vegetation.

The tidal salt marsh community met the hydrophytic vegetation criterion based on a dominance of pickleweed (OBL), gumplant (*Grindelia stricta* var. *anguistifolia*) (FACW), saltgrass (*Distichlis spicata*) (FAC), low bulrush (*Isolepis cernua*) (OBL), and jaumea (*Jaumea carnosa*) (OBL). Wetland hydrology was documented either by high water table (A2), saturation (A3), or presence of reduced iron (C4). Hydric soil was documented either by sandy redox (A5), hydrogen sulfide (A2), or depleted matrix (F3). Representative data points that pertain to the tidal salt marsh-upland boundary at the 3-Tower Point include T1a to T4a and T4b, and the data points at Radio Beach include R1a and R1b to R4aa (**Attachments A and B**). It is assumed that tidal marsh habitat at Radio Beach and the 3-Tower Point is jurisdictional because of a significant nexus with the Pacific Ocean.

Fill (asphalt, cement, rock, and trash) is scattered throughout the Radio Beach tidal salt marsh. In some areas, the fill has created berms and isolated sections of tidal marsh. In other areas, it has been invaded by iceplant (*Carpobrotus chilensis*) and crocosmea (*Crocosmia X crocosmiiflora*). It was not possible to dig a hole to reach the original soil due to the impenetrability of the fill material. Based upon drainage patterns, historical connectivity, and the presence of hydrophytic vegetation in surrounding areas without pure fill, areas with fill in the Radio Beach tidal salt marsh are considered an atypical situation and assumed to be jurisdictional.

Other Waters of the United States

Aquatic areas mapped as other waters were less than 5 percent vegetated, and therefore qualify as other waters (U.S. Army Corps of Engineers 2008). A total of 19.55 acres of potentially jurisdictional other waters of the United States were delineated in the study area (**Table 2**).

Table 2. Summary of Acreages of Other Waters of the United States Delineated in the Study Area

Habitat Type	Jurisdictional Status	Acreage Delineated in the Study Area
V-Ditch	Other waters of the U.S.	0.45
Open Water	Other waters of the U.S.	19.1
Total other waters of the U.S.		**19.55**

[1] The 3-Tower Point area is the western portion of Radio Beach where three radio towers are located, as shown in Attachment A.

Open Water

A total of 19.1 acre of open water is present in the study area. The majority of the open water habitat in the study area comprises San Francisco Bay to the northern and southern limits of the project area. Open water habitat also includes the immediate rocky shoreline and other areas below the MHWL (5.75 feet as mapped by CH2M Hill). Tidal ponds are present within the tidal salt marsh habitat at Radio Beach and the 3-Tower Point (**Attachment A**). These areas were ringed with hydrophytic vegetation and receive daily inundation from tides. Based on their landscape position and significant nexus to navigable water, it is assumed these ponds would qualify as other waters of the United States and be subject to regulation by the Corps.

The unvegetated areas within the seasonal wetland were also classified as open water. As described above this area is believed to be non-jurisdictional and not subject to regulation by the Corps.

At Radio Beach, a partially paved and partially unpaved dirt road extends through the center of the shoreline area, allowing access to the narrow strip of sandy beach to the west. At the time of the delineation, this area contained standing water (**Attachment C**, Photograph 10). A storm drain is also located in the center of the road. Daily high tides above the MHWL flood this area (as it is above the MHWL as calculated and mapped by CH2M Hill), so it was not included as open water habitat.

V-Ditch

A total of 0.45 acre (2,065 feet long and 10 feet wide) of concrete lined V-Ditch below the OHWM was mapped in the delineation study area (**Attachment A**). The V-ditch receives water from a bio-retention basin, which is dominated by Bermuda grass (*Cynodon dactylon*) and used to collect, treat and transfer stormwater runoff from the toll plaza, and outfalls directly into San Francisco Bay. The V-ditch sidewalls contain small culverts with lids which can be opened or closed to adjust flow levels. At the time of the delineation, sandbags were placed approximately one third of the way downstream from the beginning of the V-ditch, creating a dam. The sidewall culverts upstream of this dam were closed. Since the sandbag dam is artificially raising water levels downstream, the OHWM was delineated as the visual water line upstream of the dam. The V-ditch may be converted to a pipe as part of the Project. Since the V-ditch is concrete lined, constructed completely in uplands to convey upland runoff, and does not maintain a relatively permanent flow to San Francisco Bay, it is assumed this feature would not qualify as other waters of the United States and not be subject to regulation by the Corps.

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Chapter 4
References

Baldwin, B., D. Goldman, D. Keil, R. Patterson, T. Rosatti, and D. Wilken, editors. 2012. *The Jepson Manual: Vascular Plants of California,* Second Edition. University of California Press, Berkeley, CA.

CH2M Hill 2013. *Alameda Water Level Datum*. Tidal Datum Analysis. Oakland, CA.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual.* (Technical Report Y-87-1.) Vicksburg, MS: U.S. Army Waterways Experiment Station.

Federal Highway Administration and Caltrans. 2001. San Francisco-Oakland Bay Bridge east span seismic safety project. Final environmental impact statement/statutory exemption and final section 4(f) evaluation. April.

Google Earth 2013. *East Span of the San Francisco Bay Bridge.* 37.824790°N and -122.311688°E. Accessed: August 2013

Lichvar and McColley 2008. *AField Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States*. Prepared for U.S. Army Corps of Engineers Wetland Regulatory Assistance Program. Available: http://www.spk.usace.army.mil/Portals/12/documents/regulatory/pdf/Ordinary_High_Watermark_Manual_Aug_2008.pdf. Accessed: August 2013

Lichavar, R.W. et al. 2014. *The National Wetland Plant List*: Update of Wetland Ratings. Phytoneuron 2014-41: 1-42. Prepared for the National Wetlands Inventory.

NOAA 2013. *Tidal Datums*. Silver Spring, MD. Avaliable: http://tidesandcurrents.noaa.gov/datum_options.html. Accessed: August 2014

U.S. Army Corps of Engineers, San Francisco District. 2008. *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Arid West Region (Version 2.0)*. J. S. Wakeley, R. W. Lichvar, and C.V. Noble (eds.). (ERDC/EL TR-08-28.) Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Department of Agriculture Natural Resources Conservation Service. 2013. Web Soil Survey. Soil Survey Staff. U.S. Department of Agriculture. Available: <http://websoilsurvey.nrcs.usda.gov/. Accessed: August 2013

U.S. Environmental Protection Agency. 2001. Surf your watershed. Available: <http://cfpub.epa.gov/surf/locate/index.cfm . Accessed: August 2013.

Western Regional Climate Center. 2014. Oakland Museum, California (046336). Period of Record Monthly Climate Summary. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?caokmu+sfo. Accessed: August 2013.

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Attachment A
Preliminary Delineation Maps


Project Area
San Francisco Bay
Radio Beach
3-Tower Point
R3b
R3a
R4a
R1b
R1a
R2b
R2a
T3b
T3a
T1a
T2b
T2a
T4a
T4b
Project Area
Fencing only
DP
Mean High Water Line
(5.75 feet NAVD88)
Other Waters (19.548)
Open Water (19.099 acres)
V-Ditch (0.449 acres)
Wetlands (2.202 acres)
Seasonal Wetland (0.013 acres)
Tidal Saltmarsh (2.189 acres)
N
0 100 200
Feet
Note: No proposed alterations to highways or railways.
Preliminary Wetland Delineation
Gateway Park Project
Page 1 of 2


Project Area
3-Tower Point
T3b
T3a
T1a
T2b
T2a
T4a
T4b
New East Span of Bay Bridge
Old Bay Bridge
S1
S2
San Francisco Bay
N
0 100 200
Feet
Project Area
Fencing only
DP
Mean High Water Line (5.75 feet NAVD88)
Other Waters (19.548)
Open Water (19.099 acres)
V-Ditch (0.449 acres)
Wetlands (2.202 acres)
Seasonal Wetland (0.013 acres)
Tidal Saltmarsh (2.189 acres)
Note: No proposed alterations to highways or railways.
Preliminary Wetland Delineation
Gateway Park Project
Page 2 of 2

Attachment B
Routine Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 7, 2013
Applicant/Owner: State: CA Sampling Point: T1a
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Salicornia pacifica*	90	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	90 =Total Cover		
% Bare Ground in Herb Stratum 10	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	x1 =	0
FACW species	x2 =	0
FAC species	x3 =	0
FACU species	x4 =	0
UPL species	x5 =	0
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

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SOIL

Sampling Point: T1a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1 to 12	5Y 4/1	95	7.5YR 5/6	5	RM	PL	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1) (**Nonriverine**)
- X Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0 to 12

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 7, 2013
Applicant/Owner: State: CA Sampling Point: T2a
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area within a Wetland?	Yes X No
Hydric Soil Present?	Yes X No		
Wetland Hydrology Present?	Yes X No		

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center. Significant amounts of fill have been placed throughtout the entire site.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Grindelia stricta*	15	No	NL
2. *Salicornia pacifica*	40	Yes	OBL
3. *Jaumea carnosa*	55	Yes	OBL
4.			
5.			
6.			
7.			
8.			
	110 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	110 =Total Cover		
% Bare Ground in Herb Stratum	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species x1 =	0
FACW species x2 =	0
FAC species x3 =	0
FACU species x4 =	0
UPL species x5 =	0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

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SOIL

Sampling Point: T2a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1 to 16	7.5Y 3/1	90	7.5 YR 4/6	10	RM	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- X Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0 to 12

Wetland Hydrology Present? Yes ___ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

US Army Corps of Engineers

Arid West - Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 7, 2014
Applicant/Owner: State: CA Sampling Point: T2b
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center. Significant amounts of fill have been placed throughtout the entire site.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Carpobrotus chilensis*	90	Yes	FACU
2. *Grindelia stricta var. angustifolia*	10	No	NL
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	100 =Total Cover		
% Bare Ground in Herb Stratum	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	x1 =	0
FACW species	x2 =	0
FAC species	x3 =	0
FACU species 90	x4 =	360
UPL species 10	x5 =	50
Column Totals: 100 (A)		410 (B)

Prevalence Index = B/A = 4.1

Hydrophytic Vegetation Indicators:
Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks:

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SOIL

Sampling Point: T2b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1 to 20	5Y 7/1	100	N/A					

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): _____

Water Table Present? Yes ____ No ____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 7, 2013
Applicant/Owner: State: CA Sampling Point: T3a
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center. Significant amounts of fill have been placed throughtout the entire site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Grindelia stricta var anguistifolia*	5	No	NL
2. *Salicornia pacifica*	85	Yes	OBL
3.			
4.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	95	=Total Cover	
% Bare Ground in Herb Stratum 5	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species x1 =	0
FACW species x2 =	0
FAC species x3 =	0
FACU species x4 =	0
UPL species x5 =	0
Column Totals: (A)	0 (B)
Prevalence Index = B/A =	#DIV/0!

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

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SOIL

Sampling Point: T3a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	5Y 4/2	95	5YR 5/6	5	RM	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 7, 2014
Applicant/Owner: State: CA Sampling Point: T3b
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Convex Slope (%): 20
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center. Significant amounts of fill have been placed throughtout the entire site.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Carpobrotus chilensis*	100	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	100 =Total Cover		
% Bare Ground in Herb Stratum	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	x1 =	0
FACW species	x2 =	0
FAC species	x3 =	0
FACU species 100	x4 =	400
UPL species	x5 =	0
Column Totals: 100 (A)		400 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:
_____ Dominance Test is >50%
_____ Prevalence Index is ≤3.0[1]
_____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks:

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SOIL

Sampling Point: T3b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 to 20	5Y 6/1	100	N/A					

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): _____

Water Table Present? Yes ____ No ____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

US Army Corps of Engineers

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 7, 2013
Applicant/Owner: State: CA Sampling Point: T4a
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area within a Wetland?	Yes X No
Hydric Soil Present?	Yes X No		
Wetland Hydrology Present?	Yes X No		

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center. Significant amounts of fill have been placed throughtout the entire site.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Salicornia pacifica*	50	Yes	OBL
2. *Distichlis spicata*	50	Yes	FAC
3. *Atriplex pacifia*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
	105 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	105 =Total Cover		
% Bare Ground in Herb Stratum	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species x1 =	0
FACW species x2 =	0
FAC species x3 =	0
FACU species x4 =	0
UPL species x5 =	0
Column Totals: (A)	0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

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SOIL

Sampling Point: T4a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
6 to 20	5YR 4/2	80	7.5YR 5/6	20	RM	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No 0-16 Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

US Army Corps of Engineers — Arid West - Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 7, 2014
Applicant/Owner: State: CA Sampling Point: T4b
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes X	No	

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center. Significant amounts of fill have been placed throughtout the entire site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acacia longifolia*	90	Yes	NL
2.			
3.			
4.			
	90 =Total Cover		

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		

Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
	100 =Total Cover		

% Bare Ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 0 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: #DIV/0! (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:	
OBL species	x1 =	0
FACW species	x2 =	0
FAC species	x3 =	0
FACU species	x4 =	0
UPL species	x5 =	0
Column Totals: (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks:

US Army Corps of Engineers Arid West - Version 2.0

SOIL

Sampling Point: T4b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 to 20	5Y 4/2	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No 0-20 Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 6, 2014
Applicant/Owner: State: CA Sampling Point: R1a
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area within a Wetland?	Yes X No
Hydric Soil Present?	Yes X No		
Wetland Hydrology Present?	Yes X No		

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: ____)			
1. *Salicornia pacifica*	20	Yes	OBL
2. *Polypogon monspeliensis*	5	No	FACW
3. *Jaumea carnosa*	11	No	OBL
4. *Grindelia stricta var. anguistifolia*	60	Yes	FAC
5. *Limonium californicum*	1	No	FACW
6. *Schoenoplectus americanus*	2	No	OBL
7.			
8.			
	=Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	108 =Total Cover		
% Bare Ground in Herb Stratum	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	x1 =	0
FACW species	x2 =	0
FAC species	x3 =	0
FACU species	x4 =	0
UPL species	x5 =	0
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

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SOIL

Sampling Point: R1a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1 to 20	5Y 3/1	70	5YR 4/2	30	RM	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 18 in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 2 in

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

US Army Corps of Engineers — Arid West - Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 6, 2013
Applicant/Owner: State: CA Sampling Point: R1b
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): None Slope (%): 30
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Carpobrotus chilensis*	30	Yes	FACU
2. *Anagalis arvensis*	2	No	NL
3. *Jaumea carnosa*	10	Yes	OBL
4. *Grindelia stricta*	3	No	FAC
5. *Bromus diandrus*	10	Yes	NL
6. *Schoenoplectus americanus*	3	No	OBL
7. *Distichlis spicata*	5	Yes	FAC
8.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	63 =Total Cover		
% Bare Ground in Herb Stratum 37	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	13 x1 =	13
FACW species	x2 =	0
FAC species	8 x3 =	24
FACU species	30 x4 =	120
UPL species	12 x5 =	60
Column Totals:	63 (A)	217 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:
_ Dominance Test is >50%
_ Prevalence Index is ≤3.0[1]
_ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
_ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks:

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SOIL

Sampling Point: R1b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1 to 20	2.5Y 6/2	100	N/A				Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): _____

Water Table Present? Yes ____ No ____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

US Army Corps of Engineers

Arid West - Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 6, 2013
Applicant/Owner: State: CA Sampling Point: R2a
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): None Slope (%):
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Salicornia pacifica*	40	Yes	OBL
2. *Distichlis spicata*	30	Yes	FAC
3. *Grindelia strica var. anguistifolia*	5	No	FACW
4. *Schoenoplectus americanus*	2	No	OBL
5.			
6.			
7.			
8.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	77 =Total Cover		
% Bare Ground in Herb Stratum 23	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species x1 =	0
FACW species x2 =	0
FAC species x3 =	0
FACU species x4 =	0
UPL species x5 =	0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

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SOIL

Sampling Point: R2a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	5YR 5/1	40	7.5YR 5/6	60	RM	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 14

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 10

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

US Army Corps of Engineers — Arid West - Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 6, 2013
Applicant/Owner: State: CA Sampling Point: R2b
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Convex Slope (%): 45
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Crocosmia X crocosmiiflora*	20	Yes	FACU
2. *Carpobrotus chilensis*	40	Yes	FACU
3. *Grindelia strica*	5	No	NL
4. *Melilotus indicus*	10	Yes	FACU
5. *Schoenoplectus americanus*	5	No	OBL
6.			
7.			
8.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	80 =Total Cover		
% Bare Ground in Herb Stratum 20	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	5 x1 =	5
FACW species	x2 =	0
FAC species	x3 =	0
FACU species	70 x4 =	280
UPL species	5 x5 =	25
Column Totals:	80 (A)	310 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:
Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks:

US Army Corps of Engineers Arid West - Version 2.0

SOIL

Sampling Point: R2b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	5YR 7/1	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

US Army Corps of Engineers

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 6, 2013
Applicant/Owner: State: CA Sampling Point: R3a
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area within a Wetland?	Yes X No
Hydric Soil Present?	Yes X No		
Wetland Hydrology Present?	Yes X No		

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: ____)			
1. *Salicornia pacifica*	5	No	OBL
2. *Polypogon monspeliensis*	2	No	FACW
3. *Jaumea carnosa*	40	Yes	OBL
4. *Isolepis cernua*	45	Yes	OBL
5. *Limonium californicum*	1	No	FACW
6. *Distichlis spicata*	15	Yes	FAC
7.			
8.			
	=Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	108 =Total Cover		
% Bare Ground in Herb Stratum	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	0
FACW species		x2 =	0
FAC species		x3 =	0
FACU species		x4 =	0
UPL species		x5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

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SOIL

Sampling Point: R3a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1 to 16	5Y 3/1	70	5YR 4/2	40	RM	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 12 in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 6 in

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 6, 2013
Applicant/Owner: State: CA Sampling Point: R3b
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Convex Slope (%): 30
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Carpobrotus chilensis*	40	Yes	FACU
2. *Crocosmia X crocosmiiflora*	10	Yes	FACU
3. *Grindelia stricta*	10	No	NL
4. *Melilotus indica*	5	No	NL
5.			
6.			
7.			
8.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	65 =Total Cover		
% Bare Ground in Herb Stratum 35	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species x1 =	0
FACW species x2 =	0
FAC species x3 =	0
FACU species x4 =	0
UPL species x5 =	0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks:

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SOIL

Sampling Point: R3b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1 to 20	5Y 5/1	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): _____

Water Table Present? Yes ____ No ____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

US Army Corps of Engineers — Arid West - Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 6, 2013
Applicant/Owner: State: CA Sampling Point: R4a
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 30
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Jaumea carnosa*	80	Yes	OBL
2. *Distichlis spicata*	30	Yes	FAC
3. *Salicornia pacifica*	5	No	OBL
4. *Limonium californicum*	4	No	NL
5. *Cuscuta sp.*	1	No	NL
6.			
7.			
8.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	120 =Total Cover		
% Bare Ground in Herb Stratum 35	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	0
FACW species		x2 =	0
FAC species		x3 =	0
FACU species		x4 =	0
UPL species		x5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

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SOIL

Sampling Point: R4a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1 to 10	5YR 3/2	85	5YR 4/6	15	RM	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 6, 2014
Applicant/Owner: State: CA Sampling Point: S1
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area within a Wetland?	Yes X No
Hydric Soil Present?	Yes X No		
Wetland Hydrology Present?	Yes X No		

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Hordeum marinum*	60	Yes	FAC
2. *Plantago coronopus*	20	Yes	FACW
3. *Salicornia pacifica*	10	No	OBL
4. *Festuca perennis*	5	No	FAC
5.			
6.			
7.			
8.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	95 =Total Cover		
% Bare Ground in Herb Stratum 35	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	x1 =	0
FACW species	x2 =	0
FAC species	x3 =	0
FACU species	x4 =	0
UPL species	x5 =	0
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

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SOIL

Sampling Point: S1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 3/2	99	7.5YR 5/6	1	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gateway Park City/County: Oakland, Alameda County Sampling Date: June 6, 2013
Applicant/Owner: State: CA Sampling Point: S2
Investigator(s): Torrey Edell Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRR): Mediterranean California (LRR C) Lat: Long: Datum:
Soil Map Unit Name: Urban Land (95%) and Unnamed Soils in Marshes (5%) NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation X, Soil X, or Hydrology X naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: The entire site is highly distrubed. The 3-T point is currently used as a parking lot and a paved run runs through the center.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Avena sp.*	70	Yes	UPL
2. *Bromus diandrus*	15	No	NI
3. *Foeniculum vulgare*	10	No	NI
4. *Erodium sp.*	5	No	FACU
5.			
6.			
7.			
8.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	100 =Total Cover		
% Bare Ground in Herb Stratum	% Cover of Biotic Crust		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species x1 =	0
FACW species x2 =	0
FAC species x3 =	0
FACU species x4 =	0
UPL species x5 =	0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

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SOIL

Sampling Point: S2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 4/2	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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Attachment C
Representative Photographs

Photo Locations





Photograph 1. Large area of open water within impounded Radio Beach tidal marsh to the left (west) and fill in foreground. View is looking north from Radio Beach access road, between the paved portion and sandy dunes (data points R1a and R1b).



Photograph 2. Radio Beach access road, fill and non-native plants. View is looking south from same location at Photograph 1.



Photograph 3. Radio Beach tidal salt marsh (data points R2a and R2b). View is looking west.



Photograph 4. Patchy tidal salt marsh vegetation approaching 3-Tower Point. View is looking west.



Photograph 5. Manmade bio-retention basin. View is looking west.



Photograph 6. Manmade bio-retention basin. View is looking south.



Photograph 7. V-Ditch carrying water. View is looking east.



Photograph 8. V-Ditch outfall at San Francisco Bay. View is looking east.

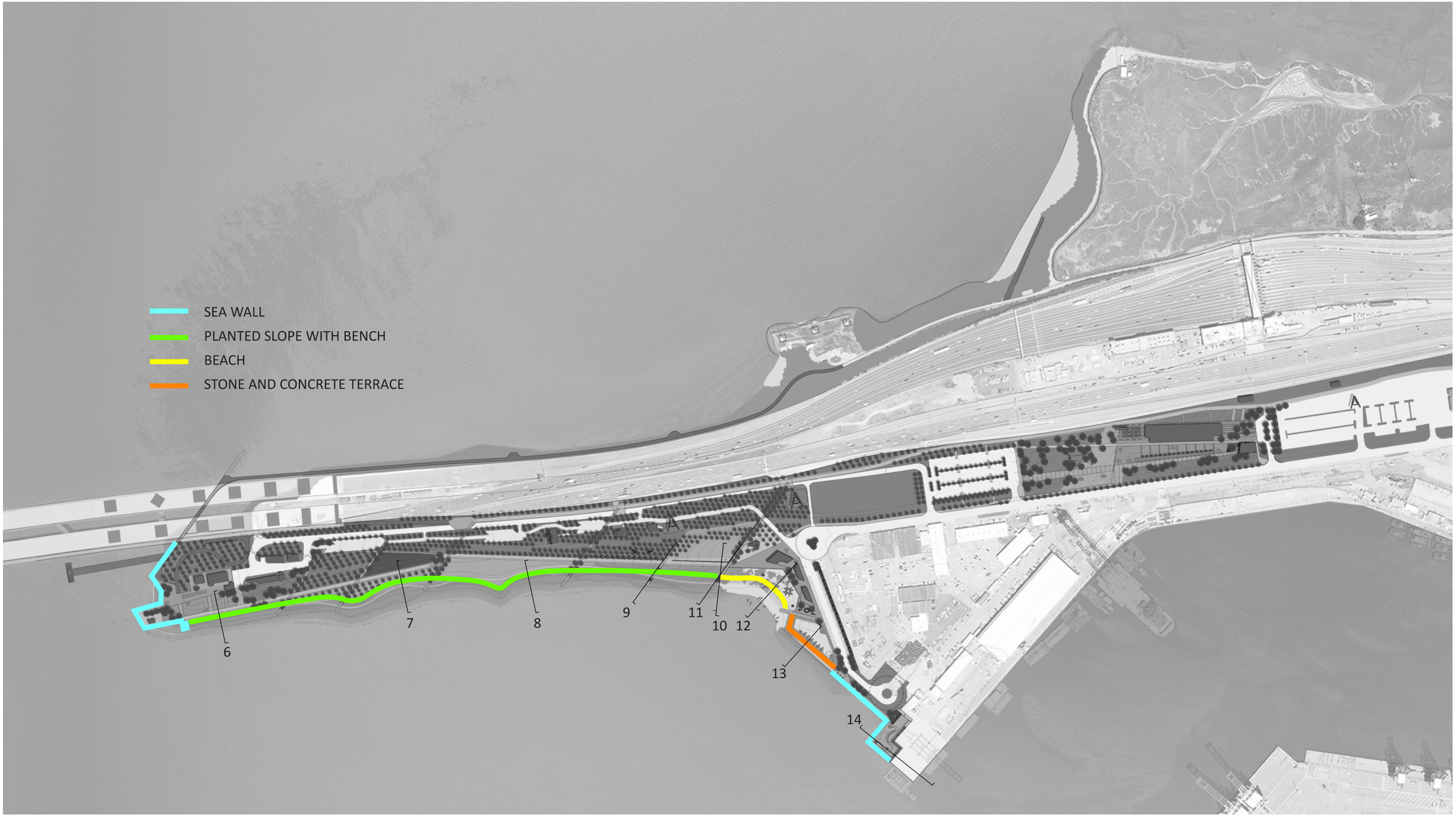


Photograph 9. Typical shoreline on south side of I-80. View is looking east.



Photograph 10. Typical shoreline on north side of I-80, with flooded area to the right (east). View is looking northeast.

Appendix E Proposed Shoreline Protection



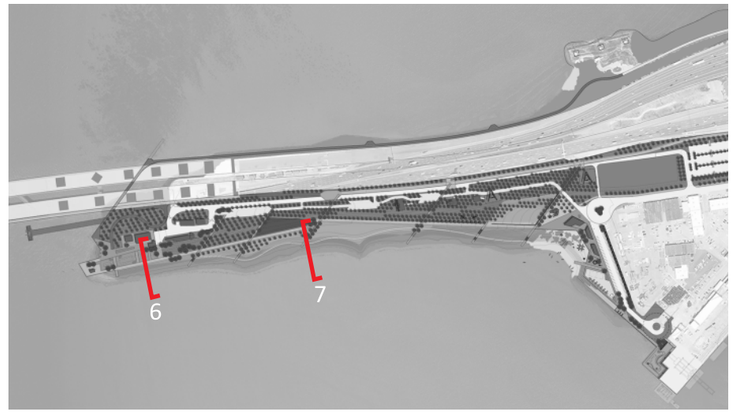
gateway park

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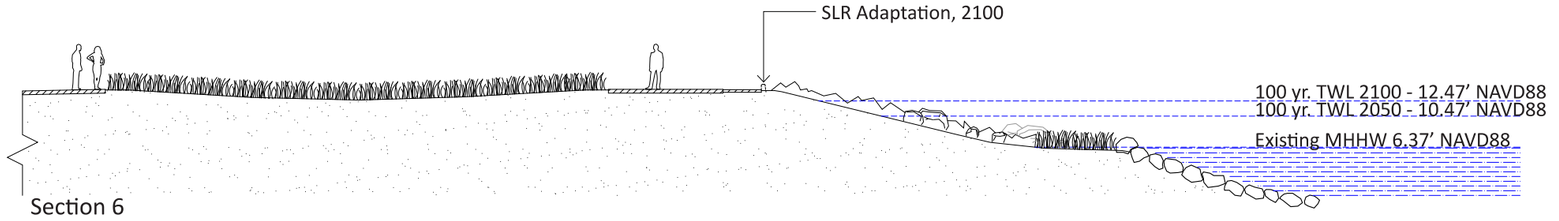
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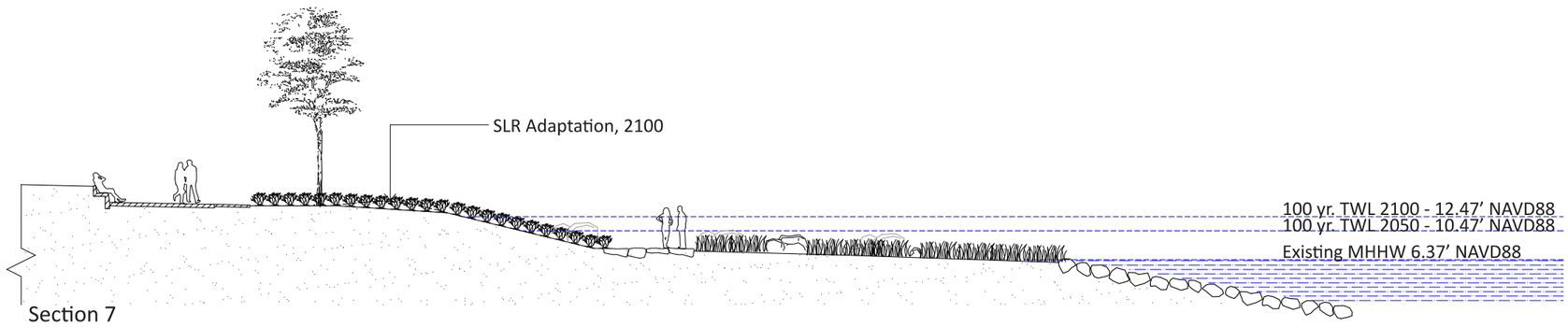
www.baybridgegatewaypark.org

- Wet slope - change over time
- Rock and intertidal plants
- Tidepools

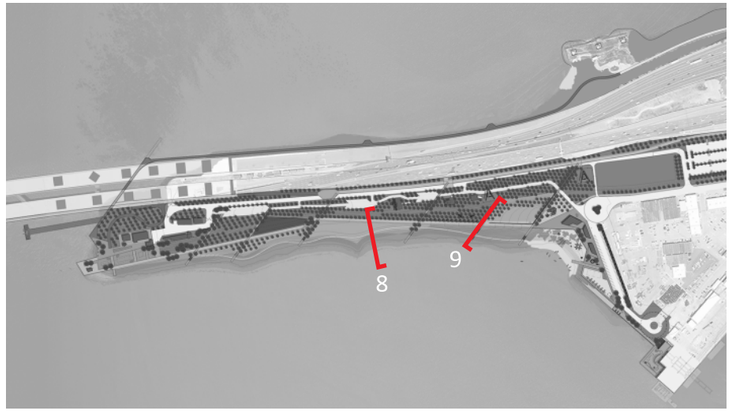






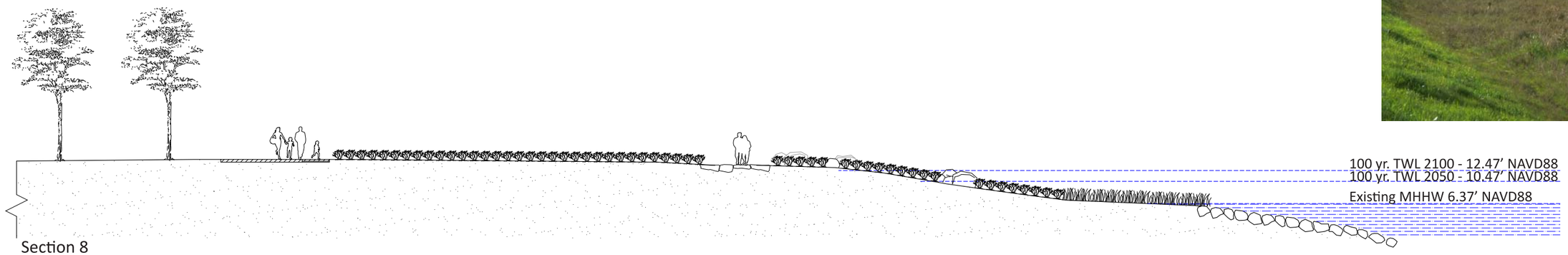






- Boulder / Rock / Gravel / Sand

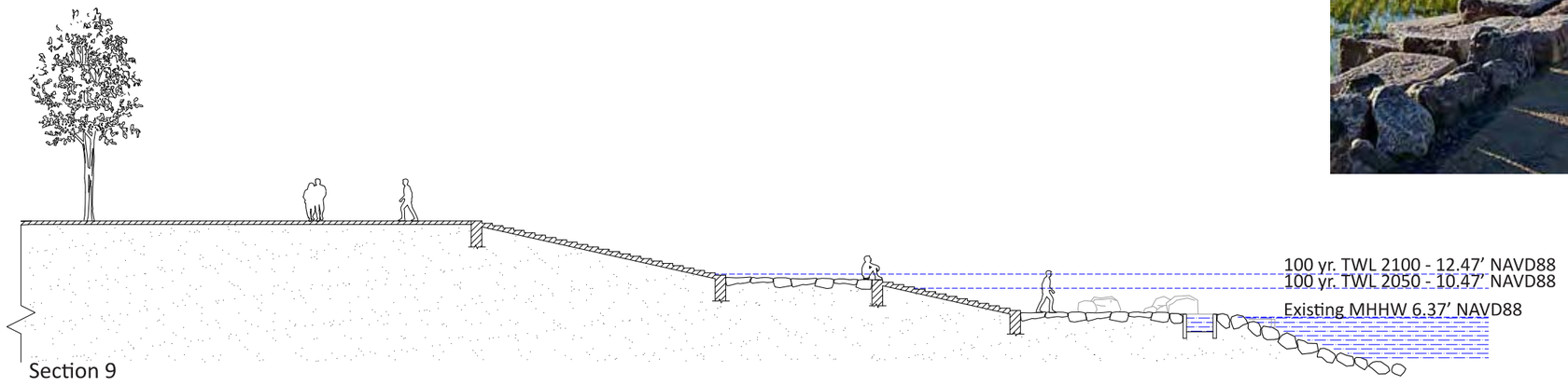




Section 8

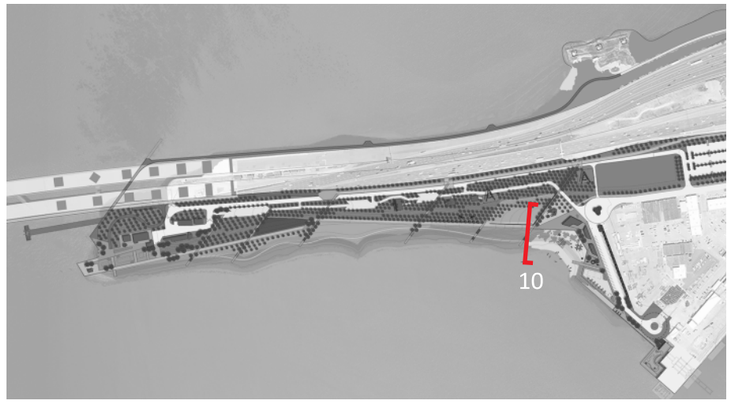






Section 9

- Boulder / Rock / Gravel / Sand

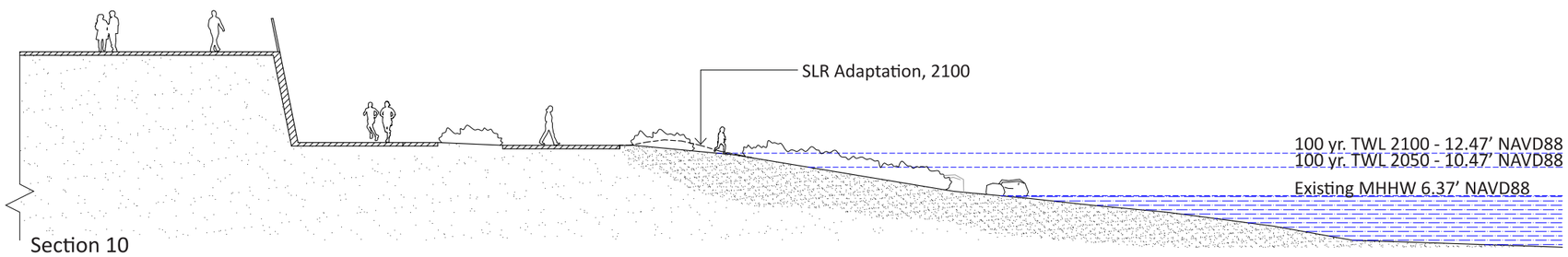


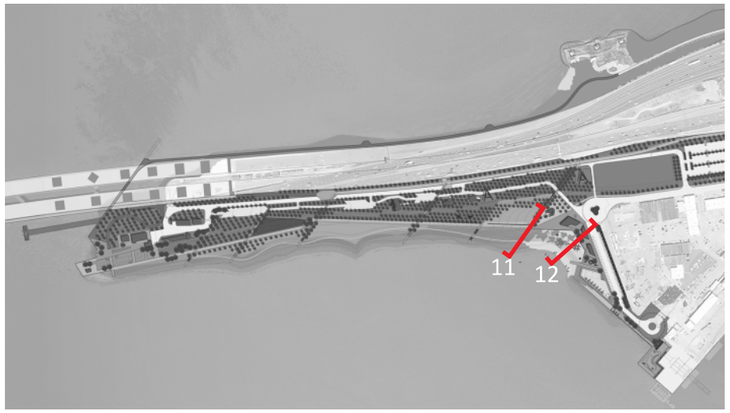


Existing



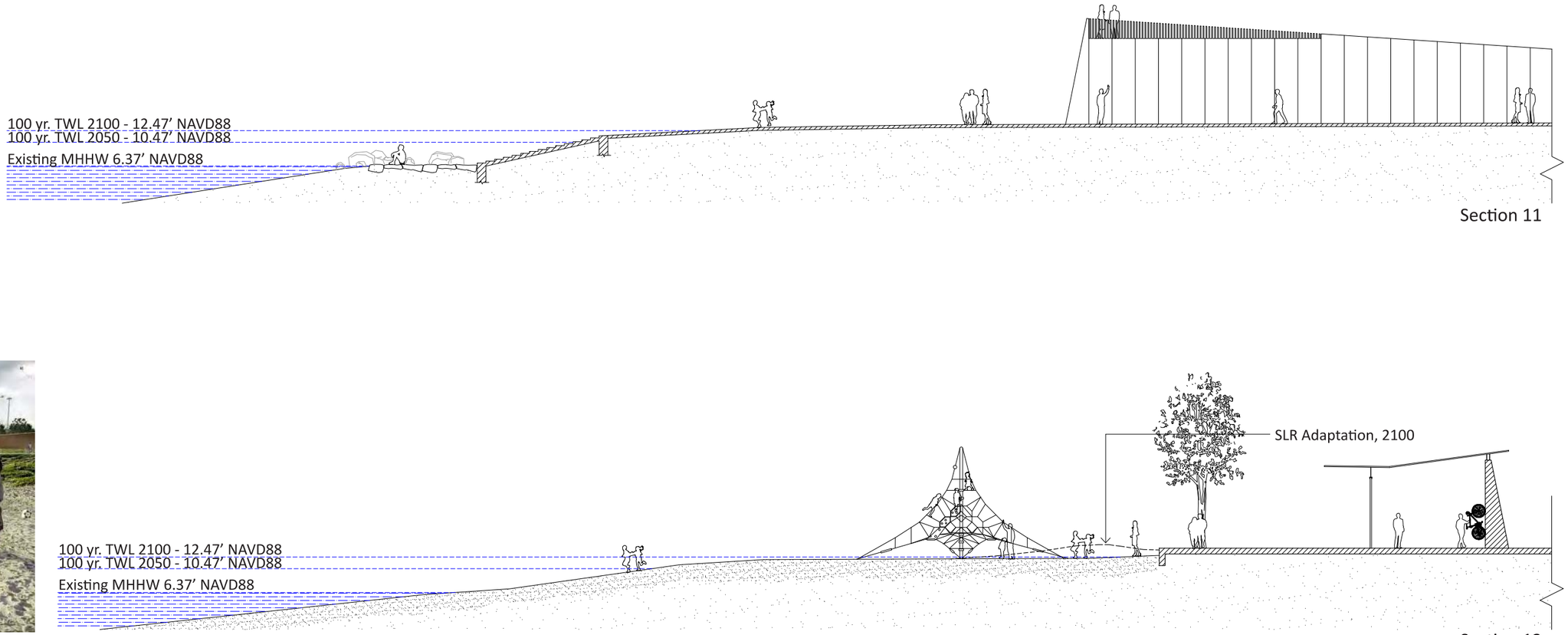
Proposed









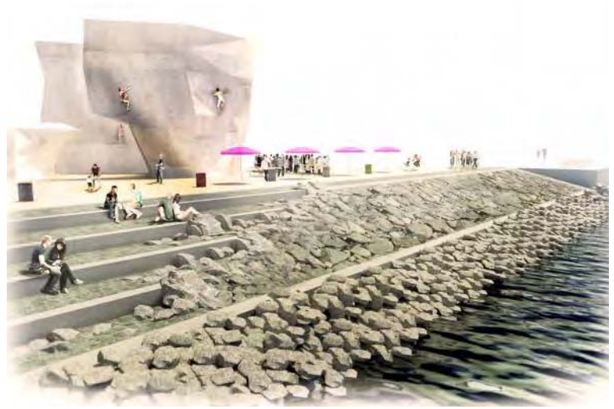


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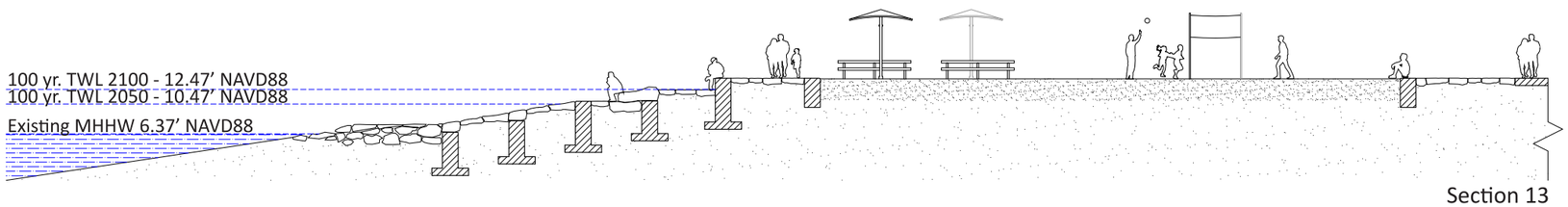


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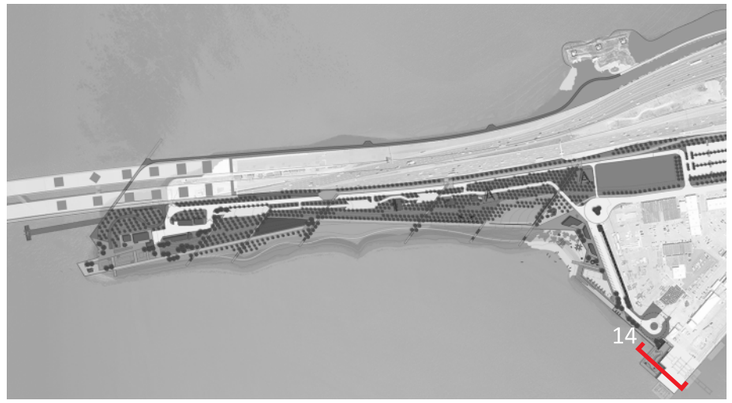

13

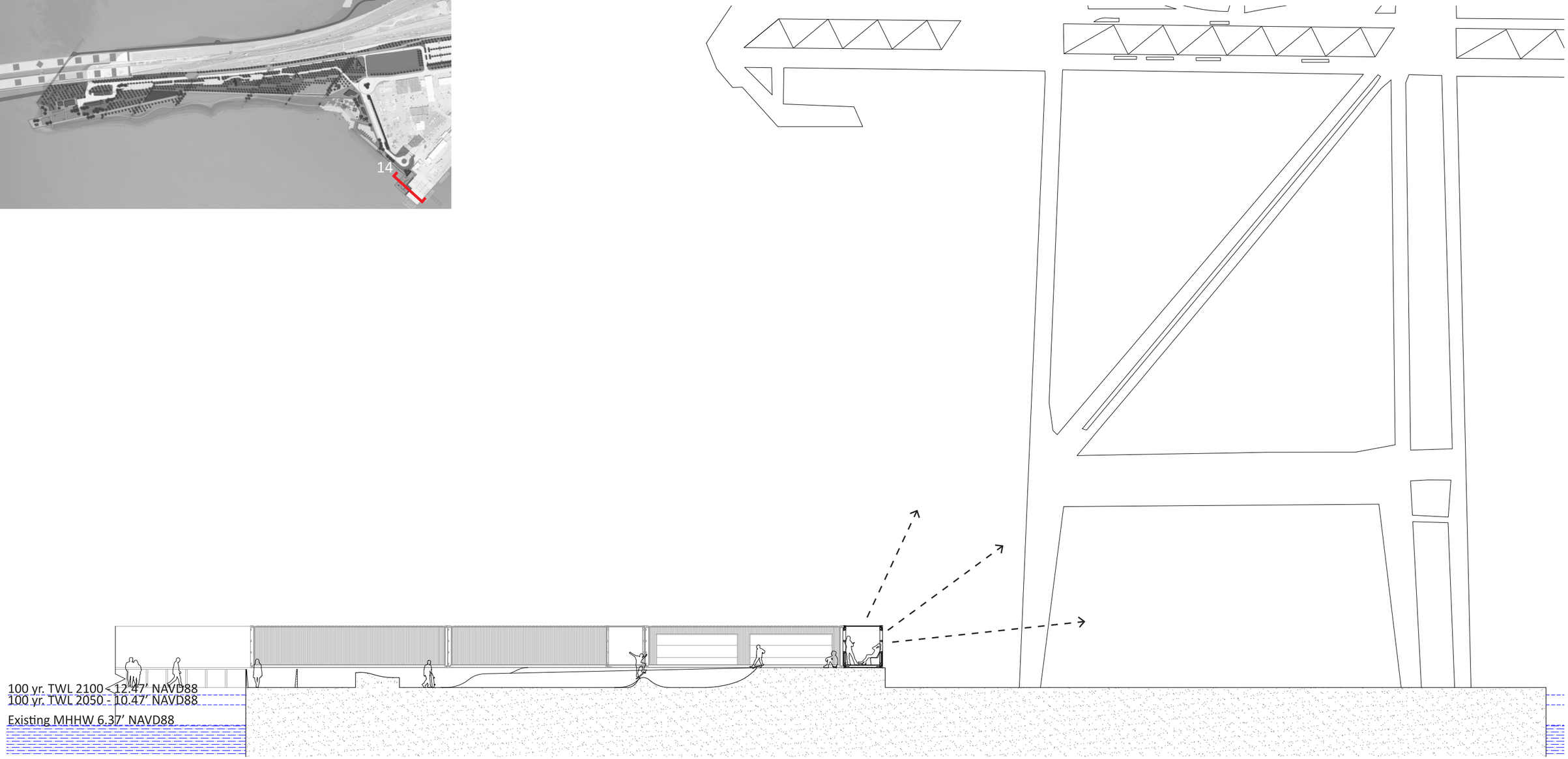





100 yr. TWL 2100 - 12.47' NAVD88
100 yr. TWL 2050 - 10.47' NAVD88
Existing MHHW 6.37' NAVD88

Section 13


14


100 yr. TWL 2100 - 12.47' NAVD88
100 yr. TWL 2050 - 10.47' NAVD88
Existing MHHW 6.37' NAVD88

Section 14

Appendix G

Noise Analysis Technical Memo

Memorandum

Date:	October 8, 2015
To:	Eva Lillie and Brian Krcelic TYLIN International 1111 Broadway, Suite 2150 Oakland, CA 94607
From:	Rich Walter, ICF International Diana Roberts, ICF International
Subject:	**Gateway Park Project—Noise Analysis**

Introduction

The Gateway Park project will create a new park (Park) at the east touchdown of the San Francisco Oakland Bay Bridge (Bay Bridge) in Oakland, California (**Figure 1**). The idea for a park at this location was conceived in the 1990s during the planning for: 1) Replacement of the new East Span of the Bay Bridge, 2) Reuse of the Oakland Army Base, and 3) Demolition and Reconstruction of Interstate 880 (Cypress/Interstate 880 freeway project), which has been built.

A park at this location would provide a gateway to both the new East Span of the Bay Bridge and the City of Oakland. The Park includes approximately 45 acres along the waterfront near the touchdown of the new East Span of the Bay Bridge. Outside the park boundaries, the proposed project could also include installing landscaping and parking near the I-880 freeway. Refer to **Figure 2**.

The primary purpose of the proposed project is to provide a distinctive entryway park to the East Bay that connects to the new bicycle/pedestrian path on the new East Span of the Bay Bridge. The project purpose also is to provide safe multimodal access to the shoreline and to provide passive and active recreation opportunities. The project purpose also includes providing interpretive features for natural resources and transportation history and a venue for community events and art installations. It will be designed to meet mitigation commitments for a number of transportation projects including the new East Span of the Bay Bridge.

The Park is proposed by the Gateway Park Working Group, which includes the following nine local, regional and state agencies: Bay Area Toll Authority (BATA), California Department of Transportation (Caltrans), San Francisco Bay Conservation and Development Commission (BCDC), California Transportation Commission (CTC), East Bay Regional Park District (EBRPD), City of Oakland, Port of Oakland, East Bay Municipal Utility District (EBMUD), and Association of Bay Area Governments (ABAG's) Bay Trail Project.

Project Location

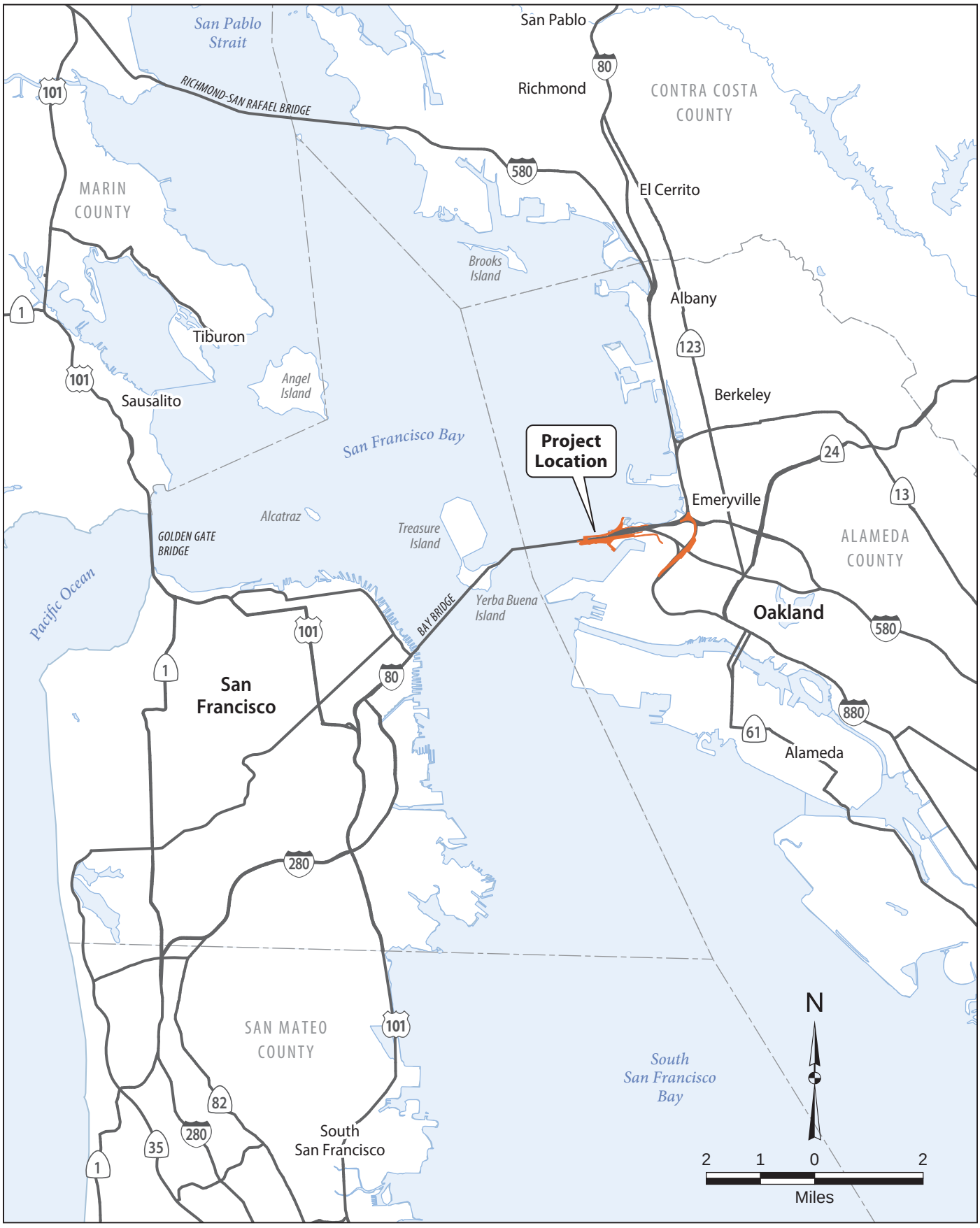


Figure 1

Project Area



Figure 2

The Bay Area Toll Authority (BATA) is the lead agency under the California Environmental Quality Act (CEQA). The environmental document is a CEQA environmental impact report (EIR).

This memorandum was prepared by ICF staff Dave Buehler, senior acoustical analyst, and Cory Matsui, noise specialist. This memorandum includes the following sections.

- Project Description
- Project Construction
- Noise Terminology
- Applicable Regulations and Requirements
- Land Use and Noise Environment
- Construction Noise Impacts and Abatement
- Traffic Noise Impacts
- References Cited

This memorandum only addresses the potential impact of construction and operational noise on people. The potential impact of pile driving on fish and marine mammals in San Francisco Bay is addressed separately in the Natural Environment Study (NES).

Project Description

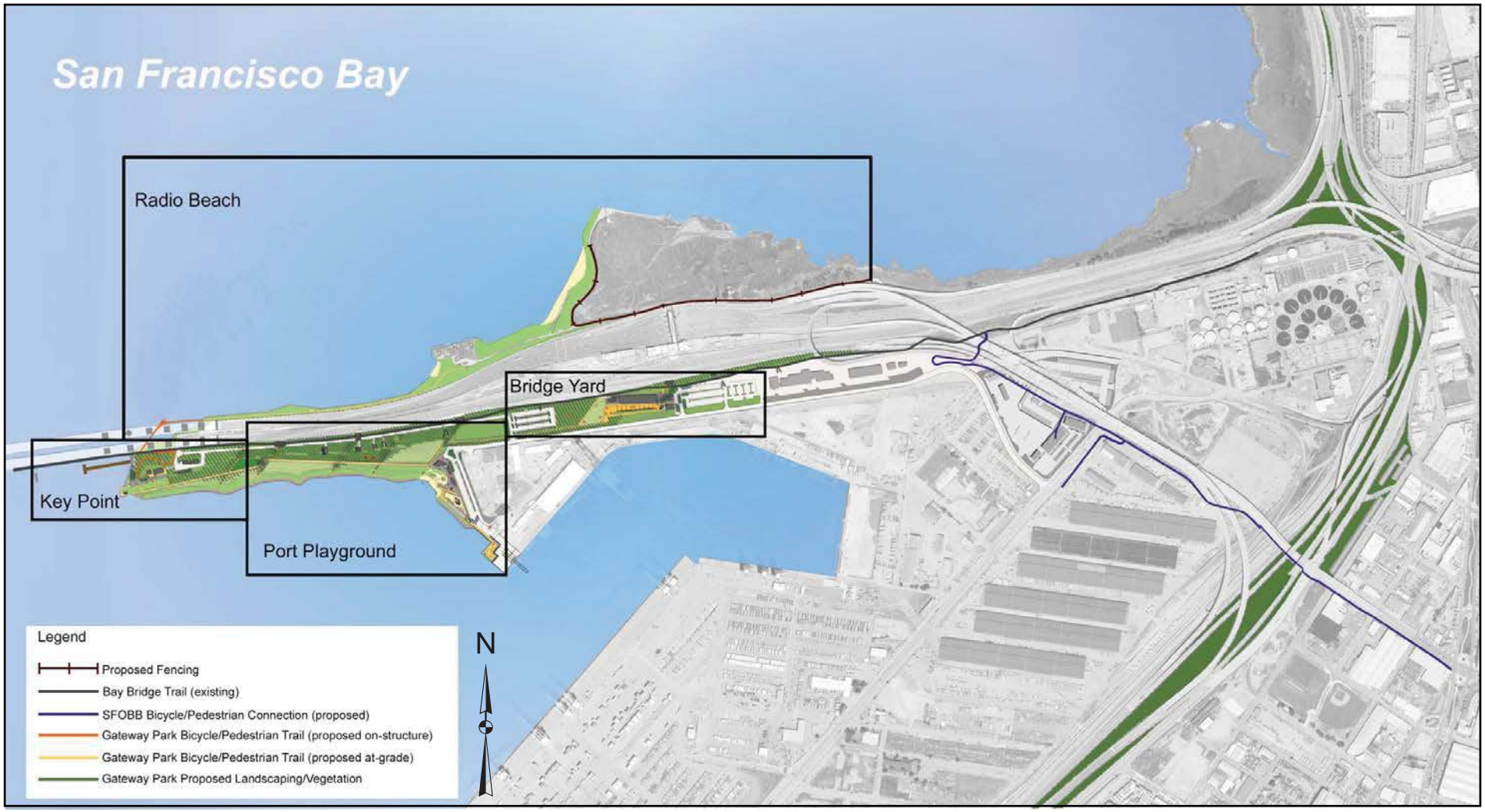
This section describes the proposed project (Park) that was developed to meet the identified objectives and needs through accomplishing the defined purposes, while avoiding and minimizing environmental impacts.

The Park would be located in the City of Oakland, Alameda County, adjacent to Interstate 880 and Interstate 80 at the eastern touchdown of the Bay Bridge (**Figure 1**). The project area includes underutilized industrial land on the south side of I-80, extending from the San Francisco Bay shoreline on the west to the Caltrans maintenance facility near the Bay Bridge toll plaza on the east. The project area also includes the Radio Beach area on the north side of I-80 and land beneath and adjacent to I-880 and the I-880/I-80/I-580 interchange. Refer to **Figure 2**.

The purpose of the project is to: Provide a gateway to both the new East Span of the Bay Bridge and the City of Oakland. Provide safe access to the new bicycle/pedestrian path on the new East Span and to other regional trails. Provide access to the shoreline and recreation opportunities. Showcase the natural, maritime, industrial and transportation history of the East Bay area.

The approximately 45-acre Park has been divided into the following four park areas: Bridge Yard, Key Point, Port Playground, and Radio Beach (**Figure 3**). The Park would be developed in

Park Areas



Source: TYLIN, 2015

Figure 3

the following three phases, as funding becomes available, with anticipated buildout in 2030 (also refer to Section 1.3.6).

Phase 1 (Approximately 2 Years) – Bridge Yard

Phase 2 (Approximately 2 Years) – Key Point

Phase 3 (Approximately 3 Years) – Port Playground and Radio Beach

Following is a description of the primary features in each of the park areas, other park features, and project phasing. **Table 1** provides a summary of the park areas and primary features.

Table 1. Summary of Park Areas and Primary Features

Park Area and Primary Features		Description	Approximate Size
1	**Bridge Yard**	A destination recreation and event center in the core park area south of I-80.	10 acres
A	Arrival Plaza	Plaza on east side of Bridge Yard Building could include vehicular drop-off area, bicycle parking area, and benches.	50,100 sf
B	Historic Display Plaza	Plaza on west side of Bridge Yard Building could include train rails with historic train car, picnic tables and shade canopy.	12,880 sf
C	Outdoor Yard Event Space	West and south of Bridge Yard Building for exhibits/performances (200 people) or larger concerts, conferences or outdoor movies (500–1,700 people).	281,400 sf
D	Bridge Yard Building[1] Improvements	Minor internal improvements and use (e.g., meetings, events) of renovated building.	24,300 sf
E	Indoor/Outdoor Auditorium	Embedded into the landscape, southeast of the Bridge Yard Building.	3,400 sf
2	**Key Point**	Passive recreation area south of I-80 at the west end of the park near the Bay Bridge.	6 acres
A	Building Renovation	Renovate historic Key Building and Mole Substation visitor services	Key Building 1,450 sf Mole Substation 4,000 sf
B	Path to Bay Bridge Trail	Path for bicyclists/pedestrians to connect the Key Point area to Bay Bridge Trail.	770 feet long and 17 feet wide
C	Pier	New pier extending into Bay, along old Bay Bridge alignment.	300 feet long and 30 feet wide
3	**Port Playground**	Active and passive recreation area south of I-80 along the southern shoreline.	11 acres

Park Area and Primary Features		Description	Approximate Size
A	Visitor Center	Main visitor center (3,500 sf) with lobby, gift shop, ranger station, café; lockers/ restrooms (1,500 sf); and kayak building (1,475 sf) for storage of 30 kayaks and 40 bikes. Three separate low-profile structures connected by covered, open-air walkways.	6,475 sf buildings 41,530 sf
B	Play Areas	Main playground (24,740 sf); beach terrace with volleyball court, picnic tables and fire pits (26,500 sf), skate park (19,070 sf), and climbing structures.	
C	Kayak Beach	Sandy beach area, kayak launch facilities, and cement ramp.	31,240 sf beach area 200' long x 19' wide ramp
D	Boardwalk	Cement walkway with observation areas, benches, picnic areas.	10,990 sf
E	Meadow View Point	Natural grassy area providing elevated view (approximately 19 feet above ground level) overlooking Bay.	1.75 acres (76,860 sf)
F	Meadow and Bluff Walk	Large natural open space with pathways extending to Key Point.	5 acres
G	Active View Feature	Active view features (e.g., elevated zip line, ropes course, observation tower or similar).	--
4	**Radio Beach**	Passive recreation area north of I-80.	5 acres
A	Path to Radio Beach	Path for bicyclists/pedestrians to access Radio Beach from the Key Point area.	4,000–4,200 feet long
B	Restoration	Planting and habitat enhancement in Radio Beach Area	4 acres
C	Fencing	Permanent fencing to protect existing environmentally sensitive area.	1,670 feet long

[1] The Bridge Yard Building, formerly called the Interurban Electric Railway Bridge Yard Shop (IERBYS) and the Sawtooth Building, is being rehabilitated by Caltrans as part of a separate project. Caltrans is removing their old equipment and seismically retrofitting for human use.

In addition to the primary features described above, the Park would include a windbreak/tree buffer, landscaping, lighting, and parking. The approximately 14-acre Windbreak/Tree Buffer would extend along the south side of I-80 in the Port Playground and Key Point areas and would include approximately 1,500 trees on 14 acres along the south side of I-80. In addition to the Windbreak/Tree Buffer, there would be landscaping (trees and shrubs) planted in various locations near buildings throughout the Park areas south of I-80. Additionally, landscaping could be planted under the freeways east of the Park (I-880 and the I-880/80/580 maze) to improve aesthetics and air quality for park visitors and West Oakland residents. Park hours would be dawn to dusk, but a minimal amount of lighting would be provided for security at dusk and for special events that could be held at the Bridge Yard. Lighting would be a combination of low level foot lighting along paths,

exterior lighting on buildings directed downward, and 20-foot steel light standards in Bridge Yard area and in parking lots. Public parking would be provided with approximately 255–755 parking spaces in different areas of the park: west of Bridge Yard building, dispersed in three areas of the windbreak, at Radio Beach, and optionally at Wood Street.

Operations and Maintenance

It is estimated that with all Park areas developed, there would be approximately 15–30 employees based on the following assumptions.

- 4 to 10 employees at the visitor serving uses in the Key Point area,
- 6 to 13 employees at the visitor serving uses in the Port Playground area, and
- 5 to 7 employees for other operations and maintenance needs elsewhere in the Park.

It is estimated that with all Park areas developed, there could be 500,000 visitors annually (1,370 daily average) based on moderate use and as many as 2,000,000 annually (5,479 daily average) based on heavy use.[1]

Project Construction

Excavation and Grading

The park area on the south side of I-80 would be elevated approximately 2 to 10 feet for protection from anticipated future sea level rise. To accommodate proposed development, grading would occur in some of the park areas to develop park features.

Construction Hours and Duration

The Project would be developed in three phases over 15 years with anticipated buildout in 2030. The majority of construction activities would be limited to between the hours of 8:00 am and 6:00 pm, Monday through Saturday. There would be no construction on Sundays or national holidays. The path to the Bay Bridge Trail in the Key Point area may require a limited amount of nighttime work.

Vehicle Access

During all three development phases, construction vehicles would use the following roadways primarily: Burma Road, Maritime Street, West Grand Avenue, and I-80 and I-880. Additionally, if the

[1] Minimum based on the HRA Gateway Findings Report 130522 provided by TYLIN (Eva Lillie, TYLIN, in May 27, 2014, email to Kate Giberson, ICF), and maximum based on information provided by Perkins+Will (Brian Chambers, Urban Designer II, in June 6, 2014 email to Kate Giberson, ICF, and Brian Krcelic, TYLIN).

Wood Street parking lot is expanded and landscaping is installed under the freeways during Phase 3, vehicles would also use Frontage Road, Wood Street, Peralta Street, and 20th Street.

Construction Equipment

Construction equipment and vehicles could include backhoes, loaders, tractors, cranes, forklifts, pile drivers, concrete trucks and concrete pumps, paving equipment, compactors/rollers, and trucks for hauling away demolition material and delivering materials to the project site.

Construction power tools could include jackhammers, air compressors, generators, concrete saws, power drills, welding equipment, sandblasting equipment, painting equipment, power and impact wrenches, and similar equipment.

Piles for the pier and elevated bike path to Radio Beach could be driven piles (precast concrete or steel) or cast-in-drilled-hole concrete piles, or a combination depending on the specific site conditions along the structure.

Staging

All construction staging areas would be on disturbed areas within the project site, at least 25 feet from the water's edge with protective hale bales in place.

Noise Terminology

The following are brief definitions of noise terminology used in this memorandum.

- **Sound:** a vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise:** sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Ambient noise:** the composite of noise from all sources near and far in a given environment, exclusive of particular noise sources to be measured.
- **Decibel (dB):** a unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude; the reference pressure is 20 micro-Pascals.
- **A-weighted decibel (dBA):** an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear. **Table 2** describes typical A-weighted noise levels for various noise sources.
- **Equivalent sound level (L_{eq}):** the average of sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level that in a stated period contains the same acoustical energy as the time-varying sound that actually occurs during the same period. The Federal

Highway Administration (FHWA) and Caltrans use the one-hour L_{eq} sound level to determine traffic noise impacts.

- **Maximum sound levels (L_{max}):** the maximum sound level measured during a measurement period.

Table 2. Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet flyover at 1,000 feet		
	— 100 —	
Gas lawnmower at 3 feet		
	— 90 —	
Diesel truck at 50 feet, at 50 miles per hour		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher in the next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: California Department of Transportation 2013.

Sound from multiple sources operating in the same area, such as a multiple pieces of construction equipment, would result in a combined sound level that is greater than any individual source. The individual sound levels for different noise sources cannot be added directly to give the sound level for the combined noise sources. Rather, the combined noise level produced by multiple noise sources is calculated using logarithmic summation. For example, if one bulldozer produces a noise level of 80 dBA, then two bulldozers operating side by side would generate a combined noise level of 83 dBA (only 3 dBA louder than the single bulldozer).

Human sound perception, in general, is such that a change in sound level of 3 dB is just noticeable; a change of 5 dB is clearly noticeable; and a change of 10 dB is perceived as doubling or halving the sound level. A doubling of actual sound energy is required to result in a 3 dB (i.e., barely noticeable) increase in noise; in practice, for example, this means that the volume of traffic on a roadway typically needs to double to result in a noticeable increase in noise.

When distance is the only factor considered, sound levels from isolated point sources of noise typically decrease by about 6 dB for every doubling of distance from the noise source. When the noise source is a continuous line, such as vehicle traffic on a highway, sound levels decrease by about 3 dB for every doubling of distance.

Applicable Regulations and Requirements

City of Oakland Municipal Planning Code

Construction of the Park would occur adjacent to land uses in the City of Oakland. As such, noise standards from the City of Oakland's Municipal Planning Code are discussed here.

Construction Noise Standards

Noise standards applicable to temporary construction or demolition work are contained in the Oakland Planning Code Section 17.120.050. For construction noise, the planning code specifies short-term operational standards, which apply to residential and commercial and industrial land uses affected by activities lasting less than 10 days, and long-term operational standards, which apply to activities lasting more than 10 days. Because Project construction would occur for more than 10 days and the Project is primarily located in an industrial and commercial area, the Long-Term Operation commercial, industrial noise standards in **Table 3** would apply. The portion of the Park that will potentially be used to treat stormwater is located adjacent to residential areas. The residential noise standards in **Table 3** would apply to construction occurring for this part of the Park.

Table 3. City of Oakland Planning Code Maximum Allowable Receiving Noise Level Standards

	Daily 7 a.m. to 7 p.m. (dBA)	Weekends 9 a.m. to 8 p.m. (dBA)
Short-Term Operation[1]		
Residential	80	65
Commercial, Industrial	85	70
Long-Term Operation[2]		
Residential	65	55
Commercial, Industrial	70	60

Source: City of Oakland Planning Code.
[1] Short-Term Operational applies activities that occur for less than 10 days
[2] Long-Term Operational applies activities that occur for more than 10 days

Vibration Standards

Under *17.120.060 – Vibration* of the Oakland Planning Code, ground vibration caused by temporary construction or demolition work is exempt from vibration standards.

Land Uses and Noise Environment

Noise sensitive land uses are land uses where people reside or locations where the presence of unwanted noise could adversely affect the use of the land. Noise sensitive land uses typically include residences, schools, hospitals, and churches. Recreational areas where quiet is an important part of the environment can also be considered sensitive to noise.

Land uses surrounding the four primary project features are mostly industrial use. These land uses consist of a Caltrans maintenance facility and uses related to the Port of Oakland. There are no residences, schools, hospitals, or churches in or adjacent to those features. The nearest residence to the Bridge Yard, Key Point, Port Playground, or Radio Beach is over one mile away. There is limited recreational use of the undeveloped Radio Beach facility as well as bicycle and pedestrian use of the trail from Emeryville to the East Span bike path; these recreational uses occur in areas adjacent to I-80 where freeway noise is dominant.

To the east of the primary Park features, an additional area would be part of the Project area and would potentially be used to treat stormwater. This area would be landscaped with vegetation, but there are no active uses planned at this time. This additional Project area is located under the MacArthur Maze and extends southwards along I-880 to 11th Street in West Oakland. There are a number of sensitive land uses adjacent to this part of the Project area, including numerous single-family and multi-family residences, Raimondi Park, 14th Street Pocket Park, and Willow Park.

The existing noise environment in the area of the Park features is dominated by vehicular traffic traveling on I-80 and the Bay Bridge. Noise from surface roadways contributes a lesser role to the existing noise environment. To quantify existing ambient noise levels in the Project vicinity, short-term (15-minute) ambient noise measurements were conducted on April 11, 2013, and April 26, 2013, at various locations around the Project area. The short-term noise measurement locations are shown in **Figure 4**, and the results are summarized in **Table 4**. The daytime ambient noise measurements in **Table 4** indicate the ambient noise level in the vicinity of the Project area range from 60 to 69 dBA.

Locations of Ambient Noise Measurements



N

0.25 0 0.25

Mile

Note: No proposed alterations to highways or railways.

Project Area

Fencing only

ST1 Location of short term (15-minute) ambient noise measurement

Figure 4

Table 4. Existing Ambient Noise Levels at Selected Locations around the Project Site

Site Location	Site Description	Starting Date/Time	Measured Noise Level (dBA)			Noise Source
			Leq	Lmax	Lmin	
ST1	Burma Road in front of Caltrans office.	4/11/2013 at 11:24 am	60.4	80.2	50.1	Vehicle traffic on I-80 and Burma Road.
ST2	Near water shore on south side of access road on EBRPD property.	4/11/2013 at 2:47 pm	63.4	70.6	60.5	Water waves; vehicle traffic on I-80.
ST3	On Radio Beach	4/11/2013 at 3:34 pm	60.3	64.0	57.4	Water waves; vehicle traffic on I-80.
ST4	At Caltrans Maintenance Building	4/26/2013 at 12:01 pm	64.7	75.9	58.7	Vehicle traffic on I-80; truck backup alarm from construction vehicles on I-80.
ST5	Behind EBMUD facility on bike trail	4/26/2013 at 10:50 pm	67.2	77.9	59.2	Vehicle traffic on I-80; Equipment operation (hammer and loader) at EBMUD facility.
ST6	At southeast corner of EBMUD facility next to rail tracks	4/26/2013 at 11:25 pm	63.0	74.1	58.3	Vehicle traffic on elevated interchange structures; train horn.
ST7	On Beach Street, next to rail tracks and under elevated interchange.	4/26/2013 at 12:43 pm	69.3	77.5	66.3	Vehicle traffic on elevated interchange structures and Beach Street.
ST8	On Wood Street north of 24th Street	4/11/2013 at 4:05 pm	64.3	76.5	57.5	Vehicle traffic on elevated interchange structures and Wood Street.

Notes:
Refer to Figure 4, Locations of Ambient Noise Measurements.
ST = short-term (15 minutes) ambient noise measurement; dBA = A-Weighted Decibel; Leq = Equivalent Sound Level; Lmax = maximum sound level. Lmin = minimum sound level.

Construction Noise Impacts and Abatement

During construction of the Park, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. **Table 5** summarizes noise levels produced by construction equipment that is expected to be used to construct this Park. L_{max} sound levels at 50 feet are shown along with the typical acoustical use factors. The acoustical use factor is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its noisiest condition) during construction operation and is used to estimate L_{eq} values from L_{max} values. For example, the L_{eq} value for a piece of equipment that operates at full power 50% of the time (acoustical use factor of 50) is 3 dB less than the L_{max} value.

Table 5. Typical Noise Levels by Construction Equipment

Equipment	Acoustical Use Factor (%)	Typical Noise Level (dBA) at 50 feet from Source	
		L_{max}	L_{eq}
Backhoe	40	78	74
Bulldozer	40	85	81
Cement/Mortar Mixers	40	79	75
Compressor	40	78	74
Concrete Saw	20	90	83
Crane	16	81	73
Excavator	40	85	81
Forklift	40	80	76
Generator	50	81	78
Grader	40	85	81
Loader	40	79	75
Paver	50	77	74
Pile Driver	20	101	94
Roller	20	80	73
Scraper	40	85	81
Tractor	40	84	80
Welder	40	74	70

Source: Federal Highway Administration 2006.

Project construction would require pile driving, both on land and in water; e.g., construction of the elevated structure would require pile driving for the supporting columns. **Table 6** presents the number of piles to be driven by Park element.

Table 6. Anticipated Pile Driving During Construction

Park Area and Primary Feature Requiring Pile Driving		Estimated Number of Piles	
		On Land	In Water[1]
1	Bridge Yard	None	None
2	Key Point Pier	0	5
3	Port Playground	None	None
4	Path to Radio Beach	0 or 8–10[2]	8

Note: Refer to Table 1-1 for all Park features and Table 1-5 for Park development phasing.

[1] Sound levels in water from in-water pile driving and potential effects on fish species and marine mammals are addressed separately in the NES.

[2] There would be no piles needed if the path is incorporated into shoreline protection with no columns or piers (rip rap); otherwise 8–10 piles would be needed.

Under a reasonable worst-case construction, it is assumed that the three loudest pieces of equipment would operate concurrently (pile driver, concrete saw, and bulldozer) to construct the primary Park features. The combined L_{eq} level for these three pieces of equipment would be at least 94 dBA at 50 feet. Construction noise would be short-term and would cease upon completion of Park

construction. In addition, there are no sensitive residential land uses or receptors in the vicinity of the primary Park features, so construction noise would not adversely affect sensitive residential land uses.

There is intermittent use of Radio Beach by a small number of recreational users; construction activity at Radio Beach itself would be limited to fencing improvements, parking improvements, and boardwalk construction. Pile driving for the construction of the path to Radio Beach would be more distant from Radio Beach. In addition, bicyclists and pedestrians use the path from Emeryville to the East Span and would traverse adjacent to certain areas of park construction. These recreational users are not considered sensitive noise receptors due to the existing environmental conditions adjacent to I-80 which are dominated by freeway noise and thus construction would not have adverse impacts on these receptors.

Construction associated with the landscaped area that would potentially be used to treat stormwater under/adjacent to I-880 would involve less intensive activity and equipment than the primary Park features. No heavy-duty construction equipment is anticipated for the vegetation planting activities, and no appreciably noise levels would be generated. Due to the intermittent nature of construction, construction noise would be considerably lower than estimated above at the sensitive noise receptors located adjacent to the proposed stormwater and landscaping improvements under/adjacent to I-880, and would not dominate the ambient noise environment, which is dominated by I-880.

In the event that additional construction noise reduction is desired, the following measures may be implemented:

- Change the location of stationary equipment so that it is further away from noise sensitive uses
- Turn off idling equipment when possible
- Reschedule noise-generating construction to less sensitive times of day

In addition notifying adjacent residents in advance of construction work can be an effective means of reducing complaints.

Traffic Noise Impacts

The Project would create a new Park area and destination for recreational activities. The Project transportation impact analysis estimates that the Park area would generate a maximum of 187 weekday p.m. peak hour trips and 394 weekend peak hour trips (Fehr & Peers 2014). Traffic on roadways in the Project vicinity would increase as a result of the Project-generated trips, as Park users use the surrounding roadways to get to and from the Park site. A doubling of traffic volumes on a roadway is typically considered to result in a 3 dB (i.e., barely noticeable) increase in noise. Thus, those roadways in the Project vicinity where traffic increases by a factor of two or more would experience a noticeable change in noise as a result of Project-generated trips. According to the Project transportation impact analysis, traffic on the following two roadways in the Project vicinity would more than double as a result of the Project.

- Burma Road west of Maritime Street during the weekday p.m. peak hour and Saturday peak hour
- Maritime Street between Burma Road/Ukraine Street and West Grand Avenue during the Saturday peak hour

The noise environment at these two roadways would increase by a noticeable amount due to the Project. However, the area around these roadways is largely undeveloped and industrial, with no land uses that are considered sensitive nearby. The nearest sensitive land uses, Raimondi Park and residences south of the Park, are located over a half mile from these roadways. At a distance of one half mile, the Project-related increase in traffic noise would not be noticeable at these land uses, given the large distance and that noise from I-880 is the dominant traffic noise source. Consequently, no adverse traffic noise impacts are anticipated from Project operation.

References Cited

Printed References

California Department of Transportation. 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. September. Available: http://www.dot.ca.gov/hq/env/noise. Accessed: May 16, 2014.

———. 2011. Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects. May. Sacramento, CA. Available: http://www.dot.ca.gov/hq/env/noise. Accessed: May 16, 2014.

Federal Highway Administration. 2006. FHWA Roadway Construction Noise Model User's Guide. Washington D.C.

Fehr & Peers. *Draft Transportation Impact Analysis: San Francisco-Oakland Bay Bridge Regional Bicycle & Pedestrian Connection: Gateway Park Report.* November.

Appendix H
Transportation Impact Analysis

EA 4H970 EFIS 0413000324
4-ALA-80-PM 0.5/3.8

Draft Transportation Impact Analysis

San Francisco-Oakland Bay Bridge Regional Bicycle & Pedestrian Connection:

Gateway Park Report



Prepared for:

T.Y. Lin International

T·Y·LIN INTERNATIONAL

November 2014

FEHR & PEERS

WC12-2992

Draft Transportation Impact Analysis

San Francisco-Oakland Bay Bridge Regional Park (Gateway Park)

EA Number - EA 4H970

EFIS 0413000324

Postmile Data - 04-ALA-80-PM 0.5/3.8

Prepared for:
T.Y. Lin International

November 2014

WC12-2992

FEHR & PEERS

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EXECUTIVE SUMMARY

This report presents the results of the Transportation Impact Analysis (TIA) conducted for a proposed Regional Park in west Oakland adjacent to the East Span of the San Francisco-Oakland Bay Bridge (SFOBB).

PROJECT DESCRIPTION AND ANALYSIS PARAMETERS

The proposed project is the creation of a new park (Park), known as Gateway Park, at the east touchdown of the San Francisco Oakland Bay Bridge in Oakland, California. The Park would provide a gateway to both the East Span of the Bay Bridge and the City of Oakland, connecting to the Bay Trail. The Park includes approximately 45 acres along the waterfront near the touchdown of the East Span of the Bay Bridge. Outside the park boundaries, the proposed project could also include installing landscaping and parking near the I-880 freeway, totaling 170 acres. The Park would provide access to the bicycle/pedestrian path on the East Span of the Bay Bridge (Bay Bridge Trail), as well as access to existing and planned segments of the regional San Francisco Bay Trail. The Park would also include active and passive recreation opportunities, including a venue for community events and art displays.

Project impacts on the study area roadway facilities were determined by measuring the effect project traffic would have on 10 intersections in the vicinity of the site during the weekday evening (4:00 to 6:00 PM) and Saturday afternoon (2:00 to 6:00 PM) peak periods. Conditions were evaluated under Existing, Near-Term and Cumulative conditions without and with the project.

FINDINGS AND RECOMMENDATIONS

Results of the analysis show that in the existing and near-term condition, the Park project could have a significant impact to intersection operations at the 7th Street/Maritime Street intersection based on the City of Oakland standards of significance. In the cumulative condition, the Park project could impact operations of the West Grand Avenue/Frontage Road/I-80 Ramps and West Grand Avenue/Mandela Parkway intersections. Mitigation measures that would reduce the project's impact to a less-than-significant level were identified. Impacts to transit, bicycle, pedestrian and transit were also reviewed. Project impacts to transit were found to be less-than-significant. Potential bicycle and pedestrian safety impacts were identified; mitigation measures that would reduce the project's impact to a less-than-significant level were identified.

1.0 INTRODUCTION

This report presents the results of the Transportation Impact Analysis (TIA) conducted for a new park (Park) at the east touchdown of the San Francisco Oakland Bay Bridge (SFOBB) in Oakland, California. This chapter discusses the TIA purpose, study area, analysis methods, criteria used to identify significant impacts, and report organization.

1.1 STUDY PURPOSE

The purpose of this analysis is to evaluate the potential transportation impacts of the Park project, including impacts to intersection operations, bicycle, pedestrian and transit facilities. As the various elements of the Park are still being refined, further analysis of future specific uses may be required. The proposed project is the creation of a new park (Park), known as Gateway Park, at the east touchdown of the San Francisco Oakland Bay Bridge in Oakland, California, as shown on **Figure 1**. The idea for a Park at this location was conceived in the 1990s during the planning for the replacement of the new East Span of the Bay Bridge and reuse of the Oakland Army Base. The Park would provide a gateway to both the new East Span of the Bay Bridge and the City of Oakland, connecting to the Bay Trail. The Park includes approximately 45 acres along the waterfront near the touchdown of the new East Span of the Bay Bridge. Outside the park boundaries, the proposed project could also include installing landscaping and parking near the I-880 freeway, totaling approximately 170 acres. The Park would also include active and passive recreation opportunities, including a venue for community events and art displays, as shown conceptually on **Figure 2**.

The Park is proposed by the Gateway Park Working Group. The Gateway Park Working Group includes the following local, regional and state agencies: The Bay Area Toll Authority (BATA), the California Department of Transportation (Caltrans), San Francisco Bay Conservation and Development Commission (BCDC), California Transportation Commission (CTC), East Bay Regional Park District (EBRPD), City of Oakland, Port of Oakland, East Bay Municipal Utility District (EBMUD), and Association of Bay Area Governments (ABAG).


LEGEND
Project Site
San Francisco Bay
EMERYVILLE
OAKLAND
PIEDMONT
ALAMEDA
Oakland Outer Harbor
Outer Harbor Entrance Channel
Oakland Middle Harbor
Oakland Inner Harbor
Lake Merritt
Frontage Rd
Powell St
Christie Ave
Shellmound St
Bay St
Hollis St
Horton St
Park Ave
Harlan St
Watts St
Halleck St
Hubbard St
Yerba Buena Ave
Stanford Ave
Doyle St
Peladeau St
Fremont St
Boyer St
Salem St
Essex St
Linden St
Dover St
Lowell St
Arlington Ave
Genoa St
Aileen St
Claremont Ave
Miles Ave
Loudsley Ave
Shafter Ave
Boyd Ave
Lawton Ave
James Ave
Manila Ave
Avon St
Cavour St
Shattuck Ave
College Ave
Taft Ave
Bryant Ave
Thomas Ave
Monroe Ave
Broadway Ter
Clifton St
Acacia Ave
Margarido Dr
Romany Rd
Elrod Ave
Alta Rd
Harbord Dr
Claremont Dr
Monteith St
Piedmont Ave
Pleasant Valley Ave
Moraga Ave
Ronada Ave
Park Way
Blair Ave
Mesa Ave
Highland Ave
Palo Alto Ave
Rose Ave
Linda Ave
Lake Ave
Glen Ave
Monte Vista Ave
Montell St
Oakland Ave
Howe St
Richo Ave
Ricardo Ave
York Dr
Jerome Ave
Manor Dr
Carmel Ave
Hillside Ave
Bonita Ave
Fairview Ave
Hillcrest Rd
Magnolia Ave
Palm Dr
Wildwood Ave
Sylvan Way
Requa Rd
Moss Ave
Cherbwood St
Jean St
Elmwood Ave
Grand Ave
Walker Ave
Vermont St
Rand Ave
Lakeshore Ave
Boulevard Way
Amherst Rd
Arimo Ave
Walavista Ave
Santa Ray Ave
Mandana Blvd
Paramount Rd
Longridge Rd
Sunnyhills Rd
Rosemount Rd
Trestle Glen Rd
Holman Rd
Alma Pl
Balfour Ave
Calmar Ave
Rand Ave
Royal Ave
York St
Warfield Ave
Webster St
Franklin St
Broadway
Valley St
Vandeventer Pl
Perry Pl
Orange St
Vernon St
Adams St
Payne Ave
Euclid Ave
Bellevue Ave
Eldorado Ave
Lenox Ave
Les St
Perkins St
Staten Ave
Elita Ave
Merritt Ave
Wesley Ave
Haddon Rd
Athol Ave
Cleveland St
Capell St
Alma Ave
Brooklyn Ave
Stow Ave
Hanover Ave
Park Blvd
Ivy Dr
Wayne Pl
Newton Ave
Lakeshore Ave
Lakeside Dr
Alice St
Webster St
Franklin St
Harrison St
Jefferson St
Clay St
Oak St
Broadway
Valley St
Vandeventer Pl
Market St
Linden St
Chestnut St
Adeline St
Magnolia St
Peralta St
Poplar Ct
Union St
Center St
Chester St
Henry St
Lewis St
Pine St
Chase St
Goss St
Campbell St
Kirkham St
Mandela Pkwy
Willow St
Wood St
Peralta St
Kirkham St
Poplar St
Adeline St
Chestnut St
Linden St
Filbert St
Myrtle St
Curtis St
West St
Hannah St
Louisa St
Helen St
Ettie St
Harvard St
San Pablo Ave
Brockhurst St
Elm St
Summit St
Webster St
Brook St
Richmond Blvd
Fairmount Ave
Hillcrest Rd
Frisbie St



Source: T.Y. Lin International

Figure 2.

Conceptual Project Components

Graphics for Park Report\WC12-2992_2_ConProComp

1.2 PROJECT STUDY AREA

Project impacts on the study area roadway facilities were determined by measuring the effect project traffic would have on intersections during the weekday evening (4:00 to 6:00 PM) and weekend afternoon (Saturday 2:00 to 6:00 PM) peak periods. Based on the review of the project location, travel routes to and from the project site, and operations of intersections as presented in results of the 2012 Oakland Army Base Project Initial Study/Addendum, the following intersections and roadway segments were identified for inclusion in the analysis, as shown on **Figure 3**:

Intersections

1. Burma Road/Maritime Street (signalized)
2. I-80 Ramps/West Grand Avenue/Maritime Street/Wake Avenue (signalized)
3. West Grand Avenue/Frontage Road/I-80 Ramps (signalized)
4. West Grand Avenue/Campbell Street (side-street stop)
5. 24th Street/Mandela Parkway (side-street stop)
6. West Grand Avenue/Mandela Parkway (signalized)
7. 20th Street/Mandela Parkway (side-street stop)
8. 7th Street/I-880 NB Off-Ramp/Frontage Road (signalized)
9. 7th Street/Maritime Street (signalized)
10. West Grand Avenue/Adeline Street (signalized)

Roadway Segments

1. Maritime Road, south of Grand Avenue
2. Maritime Road, north of 7th Street
3. Grand Avenue, west of Frontage Road
4. Grand Avenue, east of Mandela Parkway
5. 7th Street, east of Maritime Street

A separate analysis of regional roadways segments, including freeway and arterial roadway segments was conducted to comply with requirements of the Alameda County Transportation Commission (ACTC), as presented in Chapter 7.



Figure 3.

Study Intersection Locations

Graphics for Park Report\WC12-2992_3_StudyInts

FEHR & PEERS

1.3 INTERSECTION ANALYSIS SCENARIOS

For this study, analysis was conducted for several scenarios, both without and with the project, including:

Scenario 1: Existing – Existing volumes obtained from recent traffic counts (Fall 2013) and the roadway system configuration as of October 2013.

Scenario 2: Existing with Project – Existing volumes obtained from traffic counts plus traffic estimated for the project. The roadway system is the same as Scenario 1, except for improvements that are proposed with the project.

Scenario 3: Near-term without Project – Existing volumes plus traffic estimates for approved and pending developments, and traffic increases due to regional growth. Volumes were developed through a combination of the forecasts included in the 2012 Oakland Army Base Project environmental assessment and the West Oakland Specific Plan EIR. No roadway system changes were assumed. This scenario reflects condition in the next 5 to 10 years when the project is expected to be completed.

Scenario 4: Near-term with Project – Traffic volumes from Scenario 3 plus traffic estimated for the project. The roadway system is the same as Scenario 1.

Scenario 5: Near-Term with Gateway Path without Project – Traffic volumes from Scenario 3 plus traffic estimated for the proposed Gateway Path project and roadway improvements proposed as part of that project.

Scenario 6: Near-Term with Gateway Path with Project – Traffic volumes from Scenario 5 plus traffic estimated for the project.

Scenario 7: Far-Term (Cumulative) without Project – Projected traffic volumes and the projected roadway system for 2035. Volumes were developed through a combination of the forecasts included in the 2012 Oakland Army Base Project environmental assessment and the West Oakland Specific Plan EIR. This scenario assumes potential traffic increases from the proposed Gateway Path project.

Scenario 8: Far-Term (Cumulative) with Project – Traffic volumes and roadway network from Scenario 7 plus changes from development of the project.

1.4 ANALYSIS METHODS

The operations of roadway facilities are described with the term "level of service" (LOS). LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (i.e., best operating conditions) to LOS F (worst operating conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F. The City of Oakland generally strives to maintain LOS D or better for peak hour intersection operations, although LOS E is allowed at some locations.

Signalized Intersections

Traffic conditions at signalized intersections were evaluated using the method from Chapter 16 of the Transportation Research Board's 2000 *Highway Capacity Manual*. This operations analysis method uses various intersection characteristics (such as traffic volumes, lane geometry, and signal phasing) to estimate the average control delay experienced by motorists traveling through an intersection. Control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. **Table 1** summarizes the relationship between average delay per vehicle and LOS for signalized intersections.

Unsignalized Intersections

Traffic conditions at unsignalized intersections were evaluated using the method from Chapter 17 of the 2000 *Highway Capacity Manual*. With this method, operations are defined by the average control delay per vehicle (measured in seconds) for each movement that must yield the right-of-way. At two-way or side street-controlled intersections, the control delay (and LOS) is calculated for each controlled movement, as well as the left-turn movement from the major street, and the entire intersection. For controlled approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The delays for the entire intersection and for the movement or approach with the highest delay are reported. **Table 2** summarizes the relationship between delay and LOS for unsignalized intersections.

Roadway Segment

Roadway segment service levels were calculated by comparing the daily roadway volumes to the LOS thresholds presented in the HCM, as provided in **Table 3**.

TABLE 1
SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and/or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0
E	Operations with long delays indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80.0

Source: *Highway Capacity Manual (*Transportation Research Board, 2000).

TABLE 2
UNSIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: *Highway Capacity Manual (*Transportation Research Board, 2000).

TABLE 3
DAILY ROADWAY SEGMENT LOS THRESHOLDS

Number of Lanes	Facility Type	LOS A	LOS B	LOS C	LOS D	LOS E
2	Arterial	10,000	11,100	14,000	17,500	20,600
4	Arterial	23,300	25,800	32,600	40,700	47,900
6	Arterial	33,000	37,000	46,600	58,300	68,600
8	Arterial	41,100	45,700	57,600	72,000	84,700

Source: *Highway Capacity Manual (*Transportation Research Board, 2000).

1.5 SIGNIFICANCE CRITERIA

The determination of significance for project impacts is based on applicable policies, regulations, goals, and guidelines defined by the City of Oakland. The impacts of the project were evaluated by comparing the results of the level of service calculations under Existing with Project, Near-term with Project, and Cumulative with Project conditions to the results under Existing, Near-term without Project, and Cumulative without Project conditions, respectively. The detailed impact criteria for this study are presented below.

1.5.1 TRAFFIC LOAD AND CAPACITY THRESHOLDS

1. At a signalized study intersection which is located **outside the Downtown**[1] **area and that does not provide direct access to Downtown**, the project would cause the motor vehicle level of service (LOS) to degrade to worse than LOS D (i.e., LOS E or LOS F) and cause the total intersection average vehicle delay to increase by four (4) or more seconds (criteria applies to intersections 1, 2, 8 and 9);
2. At a signalized study intersection which is located **within the Downtown area or that provides direct access to Downtown**, the project would cause the motor vehicle LOS to degrade to worse than LOS E (i.e., LOS F) and cause the total intersection average vehicle delay to increase by four (4) or more seconds (criteria applies to intersections 3, 6 and 10);
3. At a signalized study intersection **outside the Downtown area and that does not provide direct access to Downtown** where the motor vehicle level of service is LOS E, the project would cause the total intersection average vehicle delay to increase by four (4) or more seconds;

[1] The Downtown area is defined in the Land Use and Transportation Element of the General Plan (page 67) as the area generally bounded by the West Grand Avenue to the north, Lake Merritt and Channel Park to the east, the Oakland Estuary to the south, and I-980/Brush Street to the west. Intersections that provide direct access to downtown are generally defined as principal arterials within two (2) miles of Downtown and minor arterials within one (1) mile of Downtown, provided that the street connects directly to Downtown.

4. At a signalized study intersection **outside the Downtown area and that does not provide direct access to Downtown** where the motor vehicle level of service is LOS E, the project would cause an increase in the average delay for any of the critical movements of six (6) seconds or more;
5. At a signalized study intersection for all areas where the motor vehicle level of service is LOS F, the project would cause (a) the overall volume-to-capacity ("V/C") ratio to increase 0.03 or more or (b) the critical movement V/C ratio to increase 0.05 or more;
6. At an unsignalized study intersection the project would add ten (10) or more vehicles to the critical movement, and after project completion, satisfy the California Manual on Uniform Traffic Control Devices (MUTCD) peak-hour volume traffic signal warrant (intersections 4, 5 and 7);
7. For a roadway segment of the Congestion Management Program (CMP) Network, the project would cause (a) the LOS to degrade from LOS E or better to LOS F or (b) the V/C ratio to increase 0.03 or more for a roadway segment that would operate at LOS F without the project;[2]
8. Cause congestion of regional significance on a roadway segment on the Metropolitan Transportation System (MTS) evaluated per the requirements of the Land Use Analysis Program of the CMP;[3] or
9. Result in substantially increased travel times for AC Transit buses.

1.5.2 TRAFFIC SAFETY THRESHOLDS

10. Directly or indirectly cause or expose roadway users (e.g., motorists, pedestrians, bus riders, bicyclists) to a permanent and substantial transportation hazard due to a new or existing physical design feature or incompatible uses;
11. Directly or indirectly result in a permanent substantial decrease in pedestrian safety;
12. Directly or indirectly result in a permanent substantial decrease in bicyclist safety;
13. Directly or indirectly result in a permanent substantial decrease in bus rider safety; or
14. Generate substantial multi-modal traffic traveling across at-grade railroad crossings that cause or expose roadway users (e.g., motorists, pedestrians, bus riders, bicyclists) to a permanent and substantial transportation hazard.

1.5.3 OTHER THRESHOLDS

15. Fundamentally conflict with adopted City policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities adopted for the purpose of avoiding or mitigating an environmental effect and actually result in a physical change in the environment;
16. Result in a substantial, though temporary, adverse effect on the circulation system during construction of the project; or

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[2] Refer to the ACTC Congestion Management Program for a description of the CMP Network. In Oakland, the CMP Network includes all state highways plus the portion of Grand Avenue between I-80 and I-580.

[3] Refer to ACTC's Congestion Management Program for a description of the MTS and the Land Use Analysis Program. The ACTC identified the roadway segments of the MTS that require evaluation in its letter commenting on the Notice of Preparation (NOP) issued by the City for the project (See page 4.13-119 for list of these roadway segments). Note that the City is required to send NOPs and notices of proposed general plan amendments to ACTC under the Land Use Analysis Program regardless of how many project-related trips are expected to be generated.



17. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

1.5.4 CUMULATIVE IMPACTS

18. A project's contribution to cumulative impacts is considered "considerable" (i.e., significant) when the project exceeds at least one of the thresholds listed above in a future year scenario.

1.6 REPORT ORGANIZATION

This report is organized into the following chapters:

- ***Chapter 1 – Introduction*** describes the analysis methods used for the transportation impact assessment. This chapter also includes the study locations and significance criteria.
- ***Chapter 2 – Existing Conditions*** describes the transportation system near the project site, including the surrounding roadway network, weekday evening and Saturday afternoon peak period intersection turning movement volumes, existing bicycle, pedestrian, and transit facilities, and intersection levels of service. Daily roadway volumes in the study area are also presented.
- ***Chapter 3 – Project Traffic*** presents project information, including descriptions of the project components and project trip generation, distribution, and assignment.
- ***Chapter 4 – Existing With Project Conditions*** addresses the Existing with Project scenario.
- ***Chapter 5 – Near-term Conditions*** addresses the near-term condition (next 5 to 10 years), both without and with the project, and discusses project impacts.
- ***Chapter 6 – Cumulative Conditions*** addresses the cumulative conditions (next 20-years), both without and with the project, and discusses project impacts.
- ***Chapter 7 – Alameda County Transportation Commission*** Metropolitan Transportation System (MTS) Roadway Analysis presents the impacts of the project on the MTS roadway system.
- ***Chapter 8 – Other Transportation Thresholds*** evaluates the potential project effects on bicycle, pedestrian and transit networks in the project vicinity, and compares the project to traffic safety thresholds and other thresholds as discussed in the significance criteria section. Projected parking demand is also discussed.

2.0 EXISTING CONDITIONS

A data collection effort was undertaken to evaluate existing transportation conditions in the study area. The assessment of existing conditions includes a description of the street and highway system, pedestrian and bicycle facilities, and public transit services near the project site. It also presents existing traffic volumes and operations for the study intersections with the results of level of service calculations.

2.1 EXISTING TRANSPORTATION FACILITIES

2.1.1 ROADWAY NETWORK

Regional access to the Park area is provided by several regional freeways, including Interstates 80 (I-80), 580 (I-580), 880 (I-880), 980 (I-980), and California State Route 24 (SR-24). Many of the roadways in the study area are also designated truck routes, as shown on **Figure 4**.

I-80 is an eight to ten-lane freeway extending west to San Francisco, and east through Berkeley, Sacramento, into Nevada and further east. Based on information from the Caltrans traffic data website reflective of 2013 data, I-80 has an annual daily traffic volume (AADT) of approximately 250,000 vehicles per day at the east of the toll plaza.

I-580 is an eight-lane east-west freeway between US 101, in Marin County, and I-5 south of Tracy. I-580 has an AADT of approximately 230,000 vehicles per day near SR 24/I-980.

I-880 is a north-south freeway that starts in the project area in Oakland with interchanges from I-80 and I-580 and runs south towards San Jose. I-880 has an AADT of approximately 74,000 vehicles per day south of I-80.

I-980 is an eight-lane north-south freeway east of the project site that connects SR 24 and I-580 to I-880. I-980 has an AADT of 113,000 vehicles in the study area.

SR 24 is an eight-lane east-west freeway between **I-580** in Oakland and Walnut Creek in the east. East of I-580, SR 24 continues as **I-980.** SR 24 has an average annual daily traffic volume (AADT) of approximately 146,000 vehicles east of I-980.

Other major roadways in the vicinity of the project include Mandela Parkway, Adeline Street, Grand Avenue, 7th Street, Frontage Road, Maritime Street, and Burma Road. The extents of these roadways in relation to the project are shown on Figure 1, and are described in more detail below.


LEGEND
Project Site
Truck Route
Source: City of Oakland
San Francisco Bay
EMERYVILLE
OAKLAND
PIEDMONT
ALAMEDA
Lake Merritt
Oakland Outer Harbor
Outer Harbor Entrance Channel
Oakland Middle Harbor
Oakland Inner Harbor
Frontage Rd
Powell St
Yerba Buena Ave
MacArthur Blvd
Engineer Rd
Grand Ave
Middle Harbor Rd
Ferro St
Embarcadero
Broadway
Piedmont Ave
Park Way
Blair Ave
Oakland Ave
Lakeshore Ave
Park Blvd
Ivy Dr
Hanover Ave
Stow Ave
Brooklyn Ave
Cleveland St
Wayne Pl
Panoramic Rim
Mandana Blvd
Santa Ray Ave
Alma Pl
Rosemount Rd
Longridge Rd
Sunnyhills Rd
Trestle Glen Rd
Holman Rd
Arimo Ave
Walavista Ave
Calmar Ave
Amherst Rd
Boulevard Way
Fairview Ave
Hillcrest Rd
Wildwood Ave
Palm Dr
Sylvan Way
Regua Rd
Grand Ave
Walker Ave
Vermont St
Rand Ave
Lakeshore Ave
Warfield Ave
York St
Balfour Ave
Rosal Ave
Elrod Ave
Alta Rd
Acacia Ave
Romany Rd
Monroe Ave
Taft Ave
Broadway Ter
Clifton St
Piedmont Ave
Pleasant Valley Ave
Moraga Ave
Ronada Ave
Park Way
Blair Ave
Mesa Ave
Highland Ave
Palo Ave
Rose Ave
Lake Ave
Jerome Ave
Linda Ave
Glen Ave
Monte Vista Ave
Montell St
Fairmount Ave
Hillside Ave
Bonita Ave
Carmel Ave
Ricardo Ave
Manor Dr
York Dr
Howe St
Echo Ave
Mather St
Gilbert St
Genoa St
College Ave
Claremont Ave
Miles Ave
Locksley Ave
Shafter Ave
Boyd Ave
Lawton Ave
James Ave
Manila Ave
Avon St
Cavour St
Shattuck Ave
Dover St
Alleen St
Arlington Ave
Lowell St
Stanford Ave
Fremont St
Vallejo St
Beaudry St
Dohrmann Dr
Harbord Dr
Northcutt St
Frontage Rd
Christie Ave
Powell St
Doyle St
Paladex St
Holis St
Bay St
Shellhouse Spur
Boxer St
Sallen St
Essex St
Linden St
Watts St
Harlan St
Park Ave
Hubbard St
Halleck St
Horton St
Emery St
Market St
Apgar St
Webster St
Ruby St
Opal St
Emerald St
Clarke St
Telegraph Ave
Chestnut St
Adeline St
Magnolia St
Peralta St
Poplar St
Kirkham St
Brockhurst St
San Pablo Ave
Hannah St
Helen St
Laurel St
Ettie St
Harlan St
Wood St
Willow St
Maritime St
Attu St
Tobruk St
Warehouse Rd
Tubagi St
Transit St
Terminal St
Pier St
Ferry St
Petroleum St
Freight St
Murmansk St
Pine St
Chase St
Goss St
Campbell St
Union St
Lincoln St
Pacific Ave
Webster St
Harrison St
Jackson St
Fallon St
Oak St
Alice St
Lakeside Dr
Bay Pl
Lesher Ave
Les St
Perkins St
Bellevue Ave
Euclid Ave
Valdez St
Vincent St
Elwood Ave
Jean St
Chelwood St
Moss Ave
Perry Pl
Orange St
Vernon St
Adams St
Payne Ave
Fruitvale Ave
Foothill Blvd
Bella Vista Ave
Beaumont Ave
Shuey St
Bayview Ave
Ivy Dr
Wesley Ave
Heaston Rd
Amherst Ave
Capell St
Alma Ave
Merritt Ave
Elita Ave
Stanley Ave
Walkway
Jefferson St
Clay St

Mandela Parkway is a north-south four-lane arterial through the study area. It connects the West Oakland BART Station in the south to Emeryville in the north. A 70 to 100 foot wide median provides a separated pedestrian/bicycle path, many plazas, and grass areas. Mandela Parkway provides on-street parking on both side of the street, and Class 2 bike lanes in both directions. The wide median results in two separate, intersections with the northbound and southbound travel lanes at intersecting streets. Where the intersections are signalized, the traffic signals are interconnected and coordinated.

Adeline Street is a north-south four-lane arterial through the study area. It connects the Oakland Inner Harbor in the south to Berkeley in the north. Adeline Street provides on-street parking on both side of the street. It does not currently provide any bicycle facilities but is a proposed bikeway. AC Transit operates local bus line 26 along Adeline Street.

Grand Avenue is an east-west four-to-six-lane arterial through the study area. It connects the Lake Merritt neighborhoods in Oakland in the east towards the eastern end of the Bay Bridge to the west. Grand Avenue provides on-street parking on both side of the street. It currently provides bike lanes east of Market Street, while it is a proposed bikeway west of Market Street. AC Transit operates the Transbay bus line NL along Grand Avenue. Grand Avenue is a designated truck route.

7th Street is an east-west four-lane roadway through the study area. It connects the Lake Merritt BART Station in the east to the Oakland Middle Harbor in the west. 7th Street is one-way (eastbound) east of Castro Street near the I-880/I-980 Interchange. Parking is generally provided on one or both sides of the street east of Mandela Parkway. Limited bicycle facilities are provided along 7th Street, however a portion of the Bay Trail runs along it west of Wood Street towards the Middle Harbor Shoreline Park. AC Transit operates several local bus lines along 7th Street and BART runs directly above 7th Street, which provides access to both the Lake Merritt Station and the West Oakland Station. It is a designated truck route for much of its length.

Frontage Road is a four-lane road that fronts I-880 for approximately one mile from 7th Street in the south to Grand Avenue in the north. Parking is not provided along Frontage Road and it has limited access points. No formal bicycle facilities are provided along Frontage Road. Although wide shoulders could provide ample space for a bicyclist, due to its freeway-centric location, high truck volume, and limited connectivity, it is not considered a bicycle friendly street.

Maritime Street is a north-south four-lane industrial road through the study area. It extends from the Oakland Middle Harbor in the south to Grand Avenue in the north. Parking is not provided along Maritime Street. No bicycle facilities are provided along the roadway, however wide shoulders provide space for bicyclists and a bikeway is proposed along the facility. It is a heavily used truck route.



Burma Road is currently a low volume two-lane local street used primarily to access the Caltrans maintenance facility and port uses in that area. Vehicular access to the Park would be provided from Burma Road. Burma Road would be realigned at Maritime Street as part of a separate project by the Oakland Global project team.

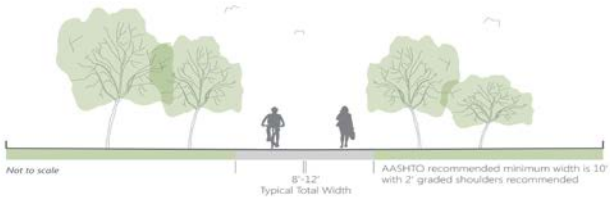
2.1.2 EXISTING PEDESTRIAN FACILITIES

Pedestrian facilities include sidewalks, pathways, crosswalks, and pedestrian signals. The City of Oakland's Pedestrian Master Plan (PMP, November 2002) designates Mandela Parkway as a City Route, and Grand Avenue as a Neighborhood Commercial Revitalization area. For each type of route, the PMP presents minimum design guidelines, which consists of the through passage zone, utility zone, and total sidewalk width. The through passage zone is the paved part of the sidewalk usable by pedestrians. The utility zone includes features such as street furnishings, vegetation, and signage. City Routes require an eight-foot through passage zone, and a four-foot utility zone, for a 12-foot total sidewalk width.

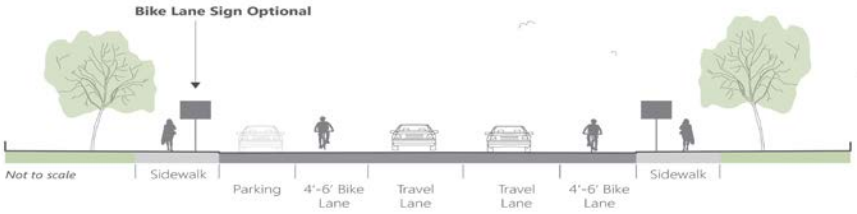
2.1.3 EXISTING BICYCLE FACILITIES

Bicycle facilities in Oakland include a number of general types, as described below, and as identified in the City of Oakland's 2007 Bicycle Master Plan Update (BMP). The graphics following the description of each type of bicycle facility are the minimum American Association of State Highway and Transportation Officials (AASHTO) standards for each type of bike facility to provide a general depiction of each type of bicycle facility. Within the City of Oakland, these standards provide a good framework for future implementation but depending on the circumstances and where feasible, the City of Oakland has chosen to go above and beyond AASHTO standards.

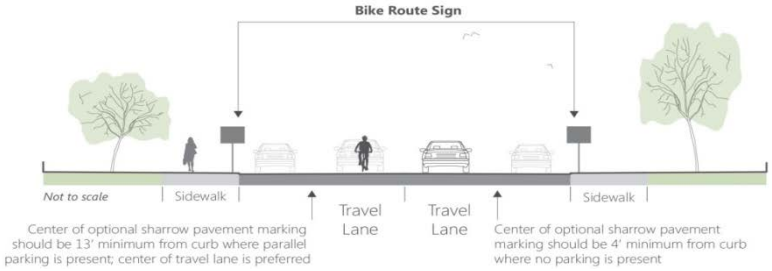
- Bike paths (Class 1) – Paved trails that are separated from roadways. These facilities are typically shared with pedestrians, although bicycles must yield to pedestrians. Vehicle cross-flow is minimized. Class 1 paths are typically 8 to 10 feet wide.



- Bike lanes (Class 2) provide restricted right-of-way and are designated for the use of bicycles with a striped lane on a street. Bicycle lanes are typically five to six feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.



- Bike routes (Class 3) provide for a right-of-way designated by signs or pavement markings (sharrows) for shared use with motor vehicles. Sharrows are a type of pavement marking (bike and arrow stencil) placed to guide bicyclists to the best place to ride on the road, avoid car doors, and remind drivers to share the road with cyclists.



- Class 3A Arterial Bicycle Routes are found along some arterial streets where bicycle lanes are not feasible and parallel streets do not provide adequate connectivity. Speed limits as low as 25 miles per hour (mph), and shared-lane bicycle stencils, wide curb lanes, and signage are used to encourage shared use.
- Class 3B Bicycle Boulevards are found along residential streets with low traffic volumes. Assignment of right-of-way to the route, traffic calming measures and bicycle traffic signal actuation are used to prioritize through-trips for bicycles.

A portion of the Bay Trail, a regional trail that will ultimately encircle the Bay Area, is located adjacent to the study area as an off-street trail connecting Emeryville and Berkeley to Oakland. This trail will ultimately connect the shorelines of all nine Bay Area counties, link 47 cities and cross major toll bridges with 500 miles of continuous bicycling and hiking trails. The East Span Bay Bridge Trail is partially completed and will ultimately connect Oakland to Treasure Island. A path on the west span of the Bay Bridge is also planned to be constructed, ultimately providing a connection between Oakland and San Francisco.

Figure 5 shows the extent of existing bicycle facilities in the study area, as well as proposed facilities.

2.1.4 EXISTING TRANSIT SERVICE

Transit service in the area is provided by AC Transit, Emery-Go-Round, Bay Area Rapid Transit (BART), Amtrak, and the Oakland Ferry. The extent of transit service in the study area is described below and shown on **Figure 6**. Transit service is not currently provided to the site, but transit is provided within the study area.

AC Transit provides both local service and Transbay service throughout the City of Oakland and the greater East Bay and San Francisco area, while providing connections to other transit service providers. AC Transit buses connect major destinations within Alameda and Contra Costa Counties, including Downtown areas, employment centers and destinations, and transit hubs, including BART, Amtrak, and Ferry stations. Transbay route NL and Line 31 provide the closest service to the project site and operates along Grand Avenue (Route NL) and Peralta Street (Line 31). A Route NL stop is located on West Grand Avenue at Wake Avenue.

Emery-Go-Round is a free private shuttle providing service to all Emeryville residents, shoppers, visitors and employees. Shuttles operate five to seven days per week between 6:00 AM and 10:30 PM with 10 to 20 minute frequency. Emery-Go-Round connects with AC Transit local routes, Amtrak, and the MacArthur BART Station.

Bay Area Rapid Transit (BART) provides regional transportation connections to much of the Bay Area with several lines serving Oakland. The nearest stations are the West Oakland (2.5 miles) and MacArthur (3.25 miles) stations. The West Oakland station provides direct connections to the entire BART system, while the MacArthur Station serves the Fremont-Richmond, Pittsburg-Baypoint/SFO and Richmond/Daly City lines. BART train frequency ranges between 2-20 minutes from approximately 5:00 AM to 12:00 AM. Connections to BART are provided by AC Transit and Emery-Go-Round.

Amtrak is a national train operator that connects northern California to the rest of the country via passenger rail. There are two stations in the study area, one in Emeryville and one in Oakland's Jack London Square. Both Stations serve the San Joaquin, Capitol Corridor, California Zephyr, and Coast Starlight routes. Connections to Amtrak are provided by AC Transit, Emery-Go-Round, and the Oakland Ferry.

The ***Oakland Ferry*** operates as part of the San Francisco Bay Ferry and provides weekday, weekend, holiday, and seasonal services to nine terminals around the bay. The Oakland Jack London Square Terminal provides direct ferry service to the San Francisco Ferry Building, San Francisco Pier 41, AT&T Park, and South San Francisco Oyster Point. Connections to the Ferry are provided by AC Transit and Amtrak.

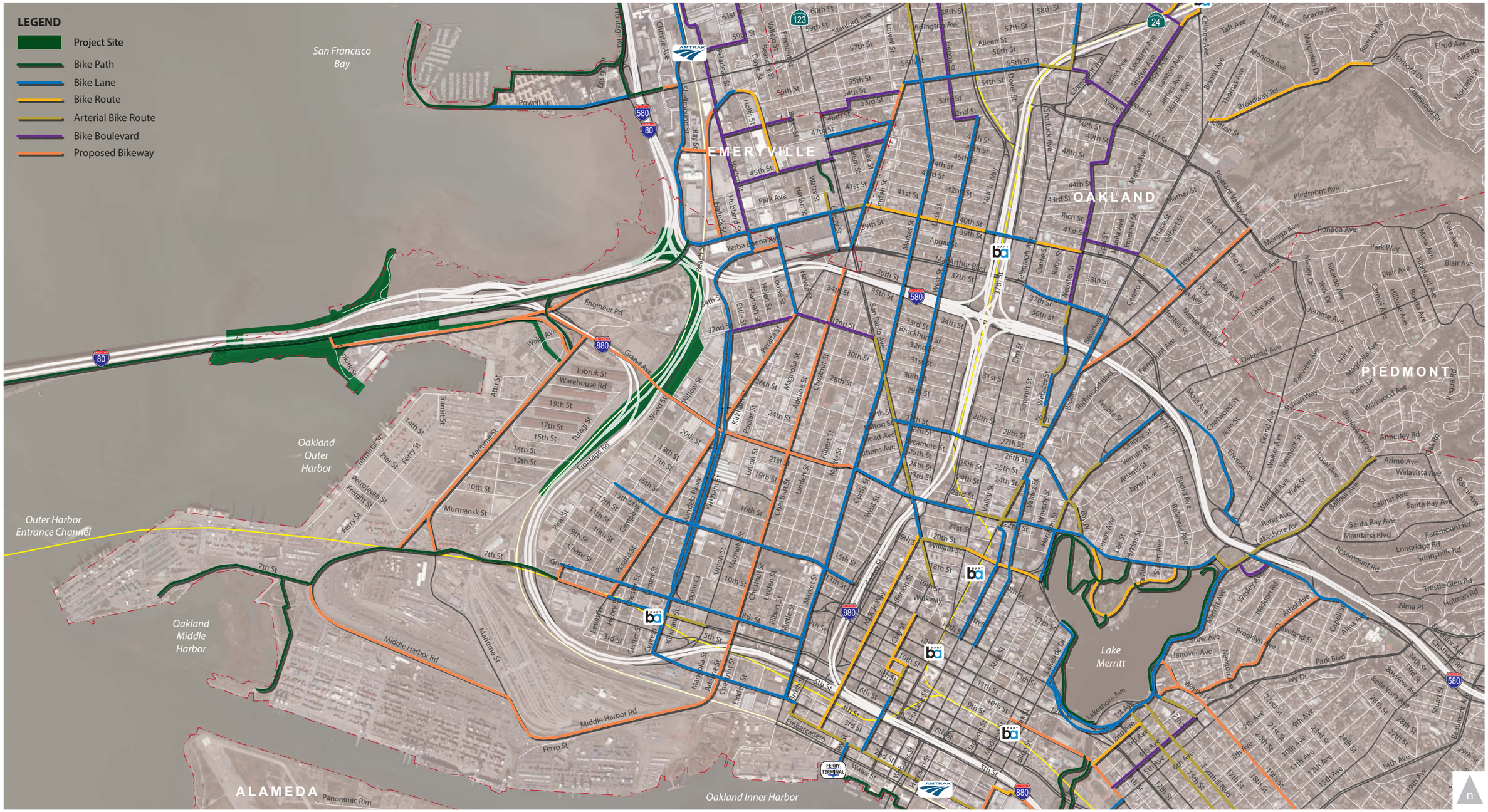


Figure 5.

Existing and Proposed Bicycle Facilities

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FEHR & PEERS


LEGEND
Project Site
BART
Amtrak
AC Transit Transbay
AC Transit Local
Emery-Go-Round
Oakland Ferry
San Francisco Bay
EMERYVILLE
OAKLAND
PIEDMONT
ALAMEDA
Oakland Outer Harbor
Outer Harbor Entrance Channel
Oakland Middle Harbor
Oakland Inner Harbor
Lake Merritt
Embarcadero
Middle Harbor Rd
Engineer Rd
Grand Ave
Yerba Buena Ave
Powell St
Frontage Rd
Panoramic Rim
Ferro St
Maritime St
Broadway
Piedmont Ave
Park Blvd
Lakeshore Ave
Mandana Blvd
Santa Ray Ave
Alma Pl
Ashby Ave
Claremont Ave
Telegraph Ave
Webster St
Harrison St
Oak St
Market St
Adeline St
Chestnut St
Linden St
Peralta St
Magnolia St
Hollis St
Horton St
Halleck St
Hubbard St
Bay St
Powell St
Doyle St
Fremont St
Beaudry St
Vallejo St
Palladen St
Stanford Ave
Irving Ave
Genoa St
Lowell St
Dover St
Boyer St
Essex St
Salem St
Watts St
Ellery St
Apgar St
Market St
Adeline St
Peralta St
Louise St
Helen St
Hannah St
Ettie St
Harlan St
Pine St
Poplar St
Kirkham St
Union St
Linden St
Chestnut St
Center St
Lester St
Henry St
Myrtle St
Campbell St
Peralta St
Magnolia St
Adeline St
Chestnut St
Linden St
Brush St
Wood St
Willow St
Maritime St
Attu St
Tobruk St
Warehouse Rd
Transit St
Terminal St
Pier St
Ferry St
Petroleum St
Freight St
Murmansk St
Tulagi St
Wake Ave
Oak St
Harrison St
Webster St
Broadway
Shattuck Ave
Claremont Ave
Miles Ave
Loudsley Ave
Shafter Ave
Boyd Ave
Lawton Ave
James Ave
Manila Ave
Avon St
Cavour St
Taft Ave
Monroe Ave
Broadway Ter
Clifton St
Pleasant Valley Ave
Moraga Ave
Piedmont Ave
Park Way
Blair Ave
Mesa Ave
Palo Alto Ave
Lincoln Ave
Rose Ave
Lake Ave
Linda Ave
Echo Ave
Howe St
Ruby St
Clarke St
Gilbert St
Manila Ave
Emerald St
Opal St
Ardath Rd
Manor Dr
York Dr
Ricardo Ave
Jerome Ave
Carmel Ave
Hillside Ave
Beach Ave
Monte Vista Ave
Montell St
Fairmount Ave
Oakmont Ave
Fairview Ave
Hillcrest Rd
Magnolia Ave
Palm Dr
Sylvan Way
Wildwood Ave
Regua Rd
Boulevard Way
Ainsley Rd
Almar Ave
Walavista Ave
Rosal Ave
Vermont St
Warfield Ave
York St
Rand Ave
Lakeshore Ave
Calmar Ave
Santa Ray Ave
Paramount Rd
Longridge Rd
Sunny Hill Rd
Trestle Glen Rd
Coolman Rd
Alma Pl
Cleveland St
Brooklyn Ave
Park Blvd
Hanover Ave
Wayne Pl
Newton Ave
Wesley Ave
Haddon Rd
Arbor Ave
Capella St
Alma Ave
Bayview Ave
Bella Vista Ave
Shuey Ave
Thornhill Rd
Fairlawn Dr
Mandana Blvd
Elwood Ave
Jean St
Cherwood St
Fairlawn Ave
Hillcrest Rd
Euclid Ave
Bellevue Ave
Valdez St
Perkins St
Les St
Jenkins Ave
Elita Ave
Stanford Ave
Orange St
Vernon St
Adams St
Payne Ave
Bay Pl
Harrison St
Webster St
Jackson St
Richmond Blvd
Frisbie St
Elm St
Summit St
Webster St
Fairmount Ave
Oakmont Ave
Monte Vista Ave
Montell St
Broadway
Valley St
Vernon St
Wellington St
Jefferson St
Madison St
Oak St
Lakeside Dr
Lakeshore Ave
Harrison St
Webster St
Jackson

2.2 EXISTING INTERSECTION VOLUMES AND LANE GEOMETRIES

Weekday evening (4:00 to 6:00 PM) and Saturday afternoon (2:00 to 6:00 PM) peak period intersection turning movement counts were conducted at the study intersections in October 2013 on clear days with area schools in session. Separate counts of bicycle, pedestrian and truck activity were conducted. For the study intersections, the single hour with the highest traffic volumes during each count period was identified. Daily traffic volumes, including vehicle classification counts, were also collected for the roadway segments in the study area. Existing lane configurations and signal controls were obtained through field observations. The vehicle volumes are presented on **Figure 7** along with the existing intersection lane configurations and traffic controls. The pedestrian and bicycle volumes are shown on **Figure 8**. Traffic count worksheets are provided in **Appendix A**.

2.3 EXISTING INTERSECTION LEVELS OF SERVICE

Existing intersection lane configurations, signal timings, and peak hour turning movement volumes were used to calculate the levels of service for the key intersections during each peak hour. The existing truck percentages were used in the analysis of intersection operations as trucks behave differently than passenger vehicles because they take longer to accelerate, decelerate, and negotiate turns and therefore affect intersection operations. Existing pedestrian and bicycle activity was also factored into the analysis.

The results of the LOS analysis using the Synchro 8.0 software program for Existing conditions are presented in **Table 4**. **Appendix B** contains the corresponding LOS calculation sheets. The results of the LOS calculations indicate most study intersections operate at overall acceptable levels of service according to their designated LOS standard during both the weekday and Saturday peak hours.

The 7th Street/Maritime Street intersection operates at LOS E during the weekday PM peak hour, which is considered deficient based on the standards set by the City of Oakland. Deficient operations are primarily caused by heavy truck movements through the intersection.

Peak hour volume traffic signal warrants[4] were reviewed for the unsignalized study intersections. At the West Grand Avenue/Campbell Street intersection, traffic signal warrants are satisfied during the weekday PM peak hour when considering the southbound right-turn movement; excluding the southbound right-

[4] Unsignalized intersection warrant analysis is intended to examine the general correlation between existing conditions and the need to install new traffic signals. Existing peak-hour volumes are compared against a subset of the standard traffic signal warrants recommended in the MUTCD and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely on the warrants because the installation of signals can lead to certain types of collisions. The responsible State or local agency should undertake regular monitoring of actual traffic conditions and accident data and conduct a timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

turn movement, peak hour volume traffic signal warrants are not met. As the southbound right-turn movement operates with minimal delay and a signalized intersection (West Grand Avenue at Mandela Parkway) is located approximately 400 feet east of the intersection, signalization is not recommended. Peak hour volume warrants were not satisfied at any of the remaining unsignalized intersections during either the weekday PM or Saturday afternoon peak hour. Traffic signal warrant worksheets are provided in **Appendix C**.

2.4 DAILY TRAFFIC VOLUMES

Daily traffic counts were collect at 5-roadway segments for a seven day period, in addition to classification counts, which included bicycles and heavy vehicles, to determine the average daily traffic volumes for roadways in the vicinity of the project site. The average weekday and Saturday daily volumes are presented on Figure 7, and are summarized in **Table 5** along with the truck percentage. Pedestrian volumes were estimated based on the peak period count from the closest intersection. The corresponding daily level of service was calculated by comparing the passenger car equivalent (PCE) adjusted volume to the level of service thresholds. As trucks behave differently than passenger vehicles, each truck was considered to be 2 passenger vehicles for the purposes of calculating LOS. The results show that the roadways in the study area operate at LOS A on a daily basis on both a typical weekday and Saturday. Sunday volumes were also reviewed and are 20 to 30 percent less than Saturday volumes.

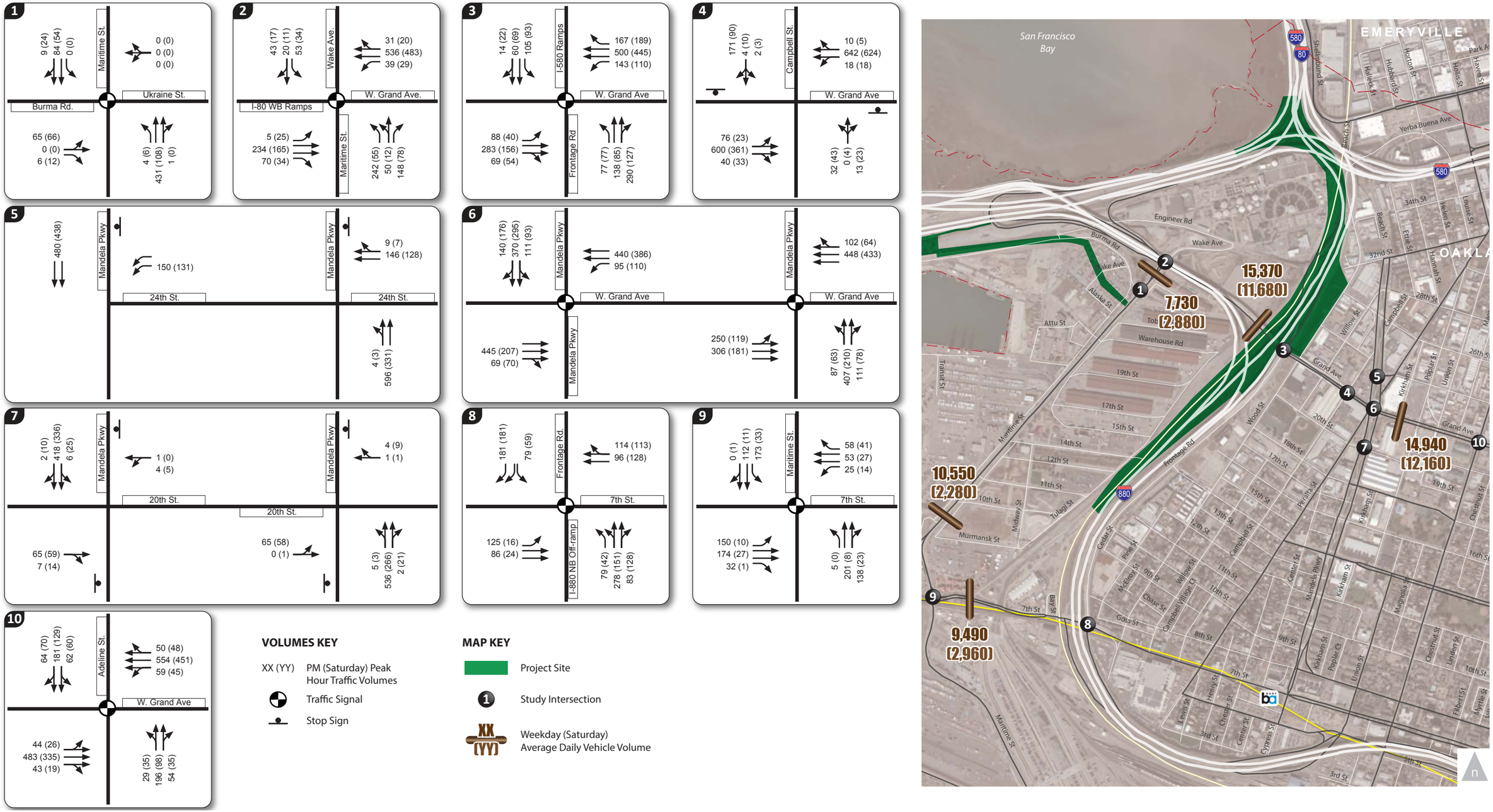


Figure 7.

Existing
Daily and Peak Hour Traffic Volumes, Lane Configurations and Traffic Control

FEHR & PEERS

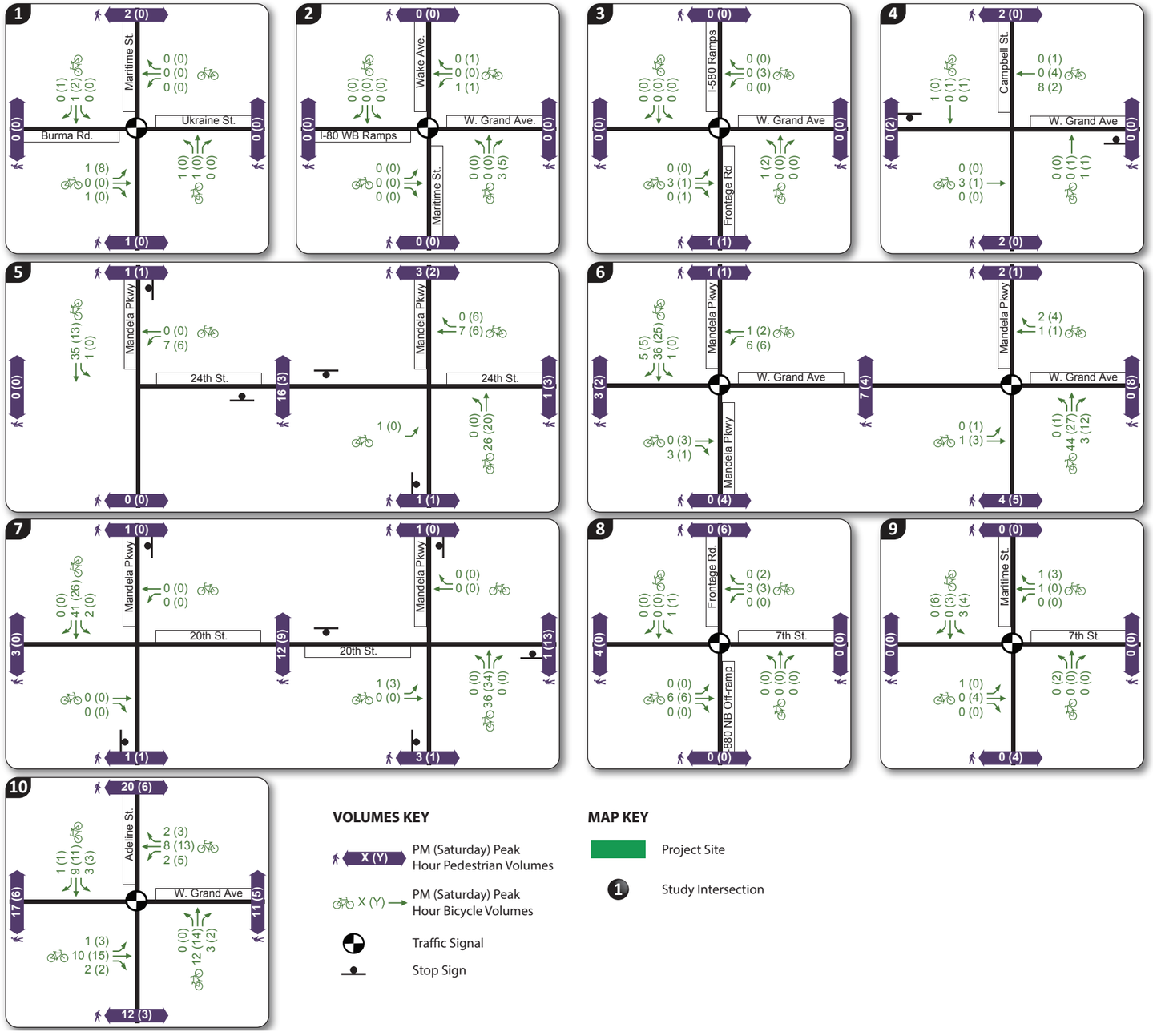


Figure 8.

Existing
Pedestrian and Bicycle Volumes

Graphics for Park Report\WC12-2992_8_ExPedBikeVols

FEHR PEERS

TABLE 4
EXISTING PEAK HOUR INTERSECTION LEVEL OF SERVICE

	Intersection	Control[1]	Peak Hour	Delay[2]	LOS[3]
1	Burma Road/Maritime Street	Signal	PM SAT	13.4 12.0	B B
2	I-80 Ramps/West Grand Avenue/Maritime Street/Wake Avenue[4]	Signal	PM SAT	26.1 32.5	C C
3	West Grand Avenue/Frontage Road/I-80 Ramps[5]	Signal	PM SAT	39.6 37.7	D D
4	West Grand Avenue/Campbell Street	SSSC	PM SAT	<10 (84.2) <10 (20.4)	A (F) A (C)
5A	24th Street/Mandela Parkway Southbound	SSSC	PM SAT	<10 (10.7) <10 (10.7)	A (B) A (B)
5B	24th Street/Mandela Parkway Northbound	SSSC	PM SAT	<10 (16.3) <10 (12.7)	A (C) A (B)
6A	West Grand Avenue/Mandela Parkway Southbound	Signal	PM SAT	16.6 14.5	B B
6B	West Grand Avenue/Mandela Parkway Northbound	Signal	PM SAT	16.9 18.4	B B
7A	20th Street/Mandela Parkway Southbound	SSSC	PM SAT	<10 (13.3) <10 (12.7)	A (B) A (B)
7B	20th Street/Mandela Parkway Northbound	SSSC	PM SAT	<10 (12.0) <10 (10.3)	A (B) A (B)
8	7th Street/I-880 Northbound Off-Ramp/Frontage Road[6]	Signal	PM SAT	26.4 18.3	C B
9	7th Street/Maritime Street	Signal	PM SAT	**59.1** 33.5	**E** C
10	West Grand Avenue/Adeline Street	Signal	PM SAT	14.9 14.5	B B

Notes: **Bold** text indicates potentially unacceptable intersection operations.

1. Signal = Signalized Intersection; SSSC = Side-street stop-controlled intersections; traffic on the main street does not stop while traffic on the side-street is controlled by a stop sign.
2. Delay presented in seconds per vehicle; for side-street stop-controlled intersections, delay presented in Intersection average (worst approach).
3. LOS = Level of Service.
4. Delay presented in table for Intersection 2 average delay/LOS. Existing Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: EB left = 43.2/D, EB thru = 24.5/C, EB right = 22.9/C
    b. Sat Peak Hour: EB left = 68.5/E, EB thru = 29.8/C, EB right = 28.2/C

5. Delay presented in table for Intersection 3 average delay/LOS. Existing Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: NB left = 40.4/D, NB thru/right = 39.7/D, SB left = 41.9/D, SB thru-right = 35.7/D
    b. Sat Peak Hour: NB left = 39.6/D, NB thru-right = 36.6/D, SB left = 40.0/D, SB thru-right = 35.9/D
6. Delay presented in table for Intersection 8 average delay/LOS. Existing Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: NB left = 24.2/C, NB thru/right = 25.3/C
    b. Sat Peak Hour: NB left = 11.4/B, NB thru-right = 12.1/B

Source: Fehr & Peers, November 2014.

TABLE 5
EXISTING CONDITIONS DAILY ROADWAY SEGMENT ANALYSIS

Roadway Segment	Facility Type	# of Lanes	Average Weekday					Saturday				
			Bikes	Peds	Vehicles	% Trucks	PCE LOS	Bikes	Peds	Vehicles	% Trucks	PCE LOS
Grand Avenue, west of Frontage Road	Arterial	4	20	10	15,370	14%	A	20	30	11,680	8%	A
Grand Avenue, east of Mandela Parkway	Arterial	6	50	210	14,940	7%	A	50	300	12,160	4%	A
Maritime Street, south of Grand Avenue	Arterial	6	20	10	7,730	45%	A	10	30	2,880	15%	A
Maritime Street, north of 7th Street	Arterial	6	30	10	10,550	50%	A	20	50	2,880	17%	A
7th Street, east of Maritime Street	Arterial	4	20	40	9,490	60%	A	10	10	7,563	20%	A

Source: Fehr & Peers, November 2014.

3.0 PROJECT CHARACTERISTICS

This chapter provides an overview the project, focusing on the vehicle trip generating components of the project and addresses the proposed trip generation, distribution, and assignment characteristics. This allows for an evaluation of the impacts on the surrounding roadway network. Impacts to bicycle and pedestrian facilities are discussed in Chapter 8. The amount of traffic associated with the Project was estimated using a three-step process:

1. **Trip Generation** – The *amount* of vehicle traffic entering/exiting the Project site was estimated.
2. **Trip Distribution** – The *direction* trips would use to approach and depart the site was projected.
3. **Trip Assignment** – Trips were then *assigned* to specific roadway segments and intersection turning movements.

3.1 PROJECT DESCRIPTION

The Park project is located in the City of Oakland at the east touchdown of the SFOBB. Outside the park boundaries, the proposed project could also include installing landscaping and parking near the I-880 freeway. Parking near the I-880 freeway is being evaluated separately as the Path project (see Chapter 5 for more details). In total, the Path and Park projects would create a linear park totaling approximately 170 acres extending from the waterfront near the touchdown of the new East Span of the Bay Bridge to Mandela Parkway in West Oakland. Access to the bicycle/pedestrian connection on the East Span of the Bay Bridge would be provided from the Park area as well as access to existing and planned segments of the San Francisco Bay Trail. The Park project is subdivided into the following areas, in addition to the Path, as further described below.

- **Bridge Yard** – would be a destination recreation and event center, including use of a renovated 24,300 square foot building. Potential events include art displays (200 attendees), movies (500 to 1,000 people), concerts (1,000 to 1,700 people) and corporate events. This area would provide an arrival plaza with a vehicular drop-off area, parking areas for vehicles and bicycles, a display area for historic trains (approximately 12,880) square feet), and an outside yard area for small gatherings or large events. Although not currently proposed, this area could house a new indoor/outdoor auditorium with a capacity of 100 to 200 people. Approximately 200 parking spaces would be provided in this area.
- **Key Point + The Pier** – would serve as the landing area for bicycle and pedestrian traffic from the Bay Bridge, located at the west end of the park. Passive recreation would be provided in this area,

emphasizing nature with features such as lawns, and outdoor classrooms. The proposed Pier would be approximately 300 feet long, extending into the Bay along the alignment of the old Bay Bridge. Other features in this area include renovation of two existing buildings that would be potentially repurposed as a warming hut for coffee and snacks, an artist studio, exhibit gallery, and a ranger station.

- **Port Playground** – would be a destination for active and passive shoreline recreation, including a new visitor center, play area, kayak launch, beach, boardwalk, and picnic areas. This area would accommodate food trucks, and would potentially host a view ride, such as a zip line. A skate park and rock climbing wall may also be included in this area in addition to a parking area.
- **Radio Beach** – is the only portion of the project located on the north side of I-80. It would be connected to the primary park area by a trail extending under the Bay Bridge at the western end that would be restricted to bicycle and pedestrian access only. No domesticated animals would be allowed in this area as it is a preservation area with limited recreational use. The existing vehicular access road would not be modified by the Project. The project may formalize existing parking by designating approximately 5 parking spaces.
- **Windbreak** – would be developed as a vegetated buffer area between I-80 and the core park area. Trees of 40 to 50 feet in height and other vegetation would be planted to provide a visual screen and diffuse vehicular air emissions. Approximately 50 to 150 parking spaces may be provided in this area.

3.2 PROJECT TRIP GENERATION

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Estimates are typically created on a daily basis and for the peak one-hour period during the morning and evening commute periods when traffic volumes on the adjacent streets are highest. For this project, estimates for weekend conditions were also prepared since higher levels of activity are expected on weekends than weekdays. The level of trip generation for the Park project is dependent on a number of factors, some of which are unknown, such as the annual number of visitors, and the type and intensity of passive and active uses on the site. Activity at the site could also vary depending on the time of year (number of daylight hours) and weather. Therefore, a number of different approaches were taken to estimate a range of potential trip generation, including published rates from the Institute of Transportation Engineers (ITE), survey of similar uses in the region, and estimates based on a range of visitor projections.

3.2.1 ITE RATES

The trip generating potential of the Park using ITE rates was calculated using the average and maximum trip rates based on acreage for a Regional Park, which is the land use most similar to the proposed project. The potential range of trip generation for Gateway Park is shown in **Table 6** based on 170 acres. The ITE rates suggest that weekday daily trip generation could range between 780 trips and 6,640 trips, and weekend trip generation could range between 1,090 and 7,500 daily trips. Weekday evening peak hour trip generation could range between 30 and 190 trips, while weekend peak hour trip generation could range between 70 and 390 trips.

TABLE 6
GATEWAY PARK
TYPICAL DAY VEHICLE TRIP GENERATION ESTIMATE RANGE – ITE RATES

Use	Size	Weekday			Weekend	
		Daily	AM Peak Hour	PM Peak Hour	Daily	Weekend Peak Hour
Regional Park – Average Rate	170 Acres	780	26	34	1,090	71
Regional Park – Maximum Rate	170 Acres	6,640	102	187	7,500	394

Source: Fehr & Peers, November 2014

3.2.2 LOCAL SURVEY

Given the potential variability in vehicle trip generation for the park, the vehicle trip generating characteristics of a similar use in the East Bay region were reviewed for a weekend day when the trip generating potential of the project is expected to be highest. Traffic counts at the University Avenue/ West Frontage Road intersection from 2009 were obtained for a Saturday peak hour as this intersection provides the primary vehicle access to the Berkeley Marina, and adjacent Eastshore State Park and Cesar Chavez Park. This area contains approximately 170 acres of active and passive recreation areas similar to the proposed project, such as walking trails and a fishing pier.

The area also contains many uses not proposed within the project site, including a marina, hotel and restaurants. The trip generating potential of the marina, hotel and restaurants, based on their estimated size and ITE trip generation rates, was subtracted from the overall vehicle counts to the area to estimate park-only vehicle trip generation. The ITE trip generation estimates from Table 6 were then compared to the estimated trip generating potential of the passive land uses at the Berkeley Marina, and the resulting

Saturday trip generation is similar to the ITE prediction for Regional Park based on the maximum observed rate based on 170 acres. Weekday PM peak period (4:00 to 6:00 PM) data was also reviewed, but as the count was conducted in January (when it is dark at 5:00 PM), park uses were found to generate less than the ITE average for regional park. It is expected that a traffic count conducted between late-spring and fall would yield higher vehicle trip generation.

3.2.3 VISITOR ESTIMATES

In addition to the review of ITE trip generation rates and local traffic count data from a similar use, projected visitor information for the park was also reviewed based on information contained in *Gateway Park Programming & Governance Considerations Report, May 22, 2013* prepared by HR&A. Projections of annual park visitors were made under several scenarios, including a range of passive to active uses, with a projected range of annual visitors between 250,000 to 2,000,000 people. The expected level of weekday and weekend vehicle trip generation on a daily and peak hour basis was calculated assuming that park attendance would vary throughout the year depending on a number of factors including the number of hours of daylight and weather. The following assumptions were used:

- Off-peak weekday demand half of peak weekday demand
- Off-peak weekend demand 80 percent of peak weekend demand
- 90 percent of person visits arrive/depart via private vehicle
- Average vehicle occupancy is 2 people per vehicle on weekday
- Average vehicle occupancy is 3 people per vehicle on weekend
- Staff/Maintenance activities would increase vehicle trip generation by 10 percent on a weekday and 5 percent on a weekend

The range of daily trip generation estimates are presented in **Table 7** and the range of peak hour trip generation estimates are presented in **Table 8.** The level of trip generation predicted by the maximum ITE Regional Park rate was compared to the estimates based on annual visitors. The level of peak hour trip generation from more than 1,500,000 annual visitors exceeded the range identified using the ITE rates. The level of trip generation from 1,000,000 to 1,500,000 annual visitors is within the range calculated by the maximum ITE rates.

TABLE 7
GATEWAY PARK
DAILY TRIP GENERATION ESTIMATE RANGE – BASED ON ANNUAL VISITORS

Number of Annual Visitors	Off-Peak Weekday	Off-Peak Weekend	Peak Weekday	Peak Weekend
250,000	440	350	640	690
500,000	880	690	1,290	1,370
1,000,000	1,760	1,380	2,580	2,750
1,500,000	2,640	2,070	3,870	4,120
2,000,000	3,530	2,760	5,150	5,490

Source: Fehr & Peers, November 2014

TABLE 8
GATEWAY PARK
PEAK HOUR TRIP GENERATION ESTIMATE RANGE – BASED ON ANNUAL VISITORS

Number of Annual Visitors	Off-Peak Weekday	Off-Peak Weekend	Peak Weekday	Peak Weekend
250,000	40	46	58	90
500,000	79	90	116	178
1,000,000	158	179	232	358
1,500,000	238	269	348	536
2,000,000	318	359	464	714

Source: Fehr & Peers, November 2014

3.2.4 TRIP GENERATION APPROACH FOR INTERSECTION ANALYSIS

As the level of activity at Gateway Park is not well defined, the evaluation of potential peak hour off-site intersection impacts of the project is based on the level of trip generation suggested by the maximum ITE rates for a 170 acre park site. The ITE rates are based on surveys at multiple locations and are within the range of estimate vehicle trip generation with between 1,000,000 and 1,500,000 annual visitors to the site. It is expected that on many days, the actual trip generation would be less, and on a few days a year, the trip generation could be more.



Potential vehicle trips associated with the Path project were estimated separately as that project would have separate utility, as discussed in detail in Chapter 5. The combined estimates of Park and Path trips are reflective of between 1,500,000 and 2,000,000 annual visitors and represent the likely maximum vehicle trip generation of the combined areas when both projects are complete.

As active uses are proposed within the Park area, additional analysis may be required to determine if the level of vehicle trip generation falls within the range considered in this assessment.

3.2.5 EAST SPAN BICYCLE AND PEDESTRIAN FORECASTS

Bicycle and pedestrian activity within the Park, pathways connecting to the Park, and on the East Span of the Bay Bridge was estimated based on existing volumes on the East Span path and using the approach documented in *SFOBB West Span Bicycle/Pedestrian/Maintenance Path PSR Project – Forecasting and Traffic Analysis Methodology, November 28, 2011* (provided in Appendix D). The approach uses observations of bicycle and pedestrian activity on Bay Area bridges with bicycle/pedestrian facilities, including the East Span of the Bay Bridge, and Golden Gate, Dumbarton and Carquinez bridges; the likelihood of existing trans-bay transit riders who access their home origin transit stop by bicycle switching to an all bicycle commute; new bicycle commuters; potential tourist activity; and demand from development on Treasure Island. Other approaches were considered, such as using a regional travel demand model, but the available modeling tools do not reflect a bicycle/pedestrian connection over the Bay Bridge in future years and do not forecast recreation/tourist based pedestrian and bicycle activity.

Based on this approach, a range of bicycle and pedestrian activity around the Park and East Span were estimated, as presented in **Table 9**, for near-term conditions prior to the completion of the West Span Bicycle and Pedestrian Path, and in **Table 10** for the cumulative condition, when it would be feasible to walk or ride a bicycle between Oakland and San Francisco. The low end of the range reflects observed bicycle and pedestrian activity on the partial East Span from October 2013.

In the near-term, daily pedestrian and bicycle activity within the Park and East Span could range from approximately 620 to 2,270 people. It is expected that the majority of these people would arrive to the park in a vehicle and park. A small percentage would park in the Wood Street lot or other available parking in the area and walk or ride their bikes to the Park and an even smaller percentage are likely to start their bike or walk trip from their home or place of work. In the cumulative condition when it would be feasible to walk or ride a bike between Oakland and San Francisco, some people may consider commuting via bicycle over the Bay Bridge, which is expected to range between 750 and 1,500 people on a typical weekday. Tourism and other recreational activity would likely increase, especially on weekends.



TABLE 9
NEAR-TERM EAST SPAN BICYCLE AND PEDESTRIAN FORECAST RANGE

Source of Activity	Weekday			Weekend	
	Daily	AM Peak Hour	PM Peak Hour	Daily	Peak Hour
Tourism/Recreation – Pedestrian[1]	300 – 1,070	10	40 – 200	2,250 – 3,270	290 – 420
Tourism/Recreation – Bicycle[1]	320 – 500	20	50 – 90	1,800 – 1,830	220 – 330
Treasure Island Development – Bicycle [2]	0 – 700	0 – 30	0 – 40	0 – 700	0 – 40
Total Near-term Pedestrian/ Bicycle Activity Range	**620 – 2,270**	**30 – 60**	**90 – 330**	**4,050 – 5,800**	**540 – 790**

Notes: 1. The low end of the range is based on counts of activity on the East Span prior to the completion of the Park and the connection to Yerba Buena Island. Maximum of the Near-term activity range is assumed to be 20 percent of observed activity on the Golden Gate Bridge on a weekday and 30 percent of observed activity on a weekend.
2. Based on the trip generation, mode choice and project trip distribution from the *Treasure Island and Yerba Buena Island Redevelopment Plan Transportation Impact Study*, July 7, 2010. Range is from 0 as it is uncertain when the Treasure Island Development would be fully-built out.

Source: Fehr & Peers, November 2014

TABLE 10
CUMULATIVE EAST SPAN BICYCLE AND PEDESTRIAN FORECAST RANGE

Source of Activity	Weekday			Weekend	
	Daily	AM Peak Hour	PM Peak Hour	Daily	Peak Hour
Tourism/Recreation – Pedestrian[1]	300 – 1,610	20	40 - 300	2,250 – 4,350	290 – 560
Tourism/Recreation – Bicycle[1]	320 – 750	30	50 - 140	1,800 -2,440	220 – 440
Treasure Island Development – Bicycle [2]	0 – 700	0 – 30	0 – 40	0 – 700	0 – 40
Commute Trips – Bicycle[3]	750 – 1,490	50 – 210	50 – 270	250 – 750	50 – 140
Total Pedestrian/Bicycle Activity	**1,370 – 4,550**	**100 – 290**	**140 – 750**	**4,300 – 8,240**	**560 – 1,180**

Notes: 1. The low end of the range is based on counts of activity on the East Span prior to the completion of the Park and the connection to Yerba Buena Island. Maximum of the range is assumed to be 30 percent of observed activity on the Golden Gate Bridge on a weekday and 40 percent of observed activity on a weekend.
2. Based on the trip generation, mode choice and project trip distribution from the *Treasure Island and Yerba Buena Island Redevelopment Plan Transportation Impact Study*, July 7, 2010.
3. Based on estimates of existing commuters who ride their bicycles to a BART station within 15 miles of either the touchdown of either the east span or west span that might switch to only bike commuting, and the number of transbay buses each hour and estimates of bus bicycle rack activity.
Source: Fehr & Peers, November 2014

3.3 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Based on the location of the site, surrounding land uses, roadway network, and relative population distribution within the greater East Bay and San Francisco, trip distribution percentages were developed. Population densities within the immediate vicinity (Oakland, Emeryville, and Berkeley) were weighed more heavily than population densities farther away (Richmond, Hayward, San Francisco). New trips to/from the Park were assigned to the roadway network based on the local access characteristics and the project trip distribution estimates. Project trip distribution percentages and vehicle routes to/from the study area are depicted on **Figure 9**; the resulting the project trip assignment is also presented on Figure 9.





VOLUMES KEY

XX (YY) PM (Saturday) Peak Hour Traffic Volumes

MAP KEY

Project Site

Study Intersection

X% Project Trip Distribution

Figure 9.

Project Trip Distribution and Project Trip Assignment

Graphics for Park Report\WC12-2992_9_PTA

4.0 EXISTING WITH PROJECT TRAFFIC CONDITIONS

This chapter evaluates potential off-site traffic impacts under Existing With Project conditions.

4.1 EXISTING WITH PROJECT TRAFFIC VOLUMES

The Project traffic volumes on Figure 9 were added to the existing traffic volumes from Figure 8 to estimate the Existing With Project traffic volumes, as shown on **Figure 10**.

4.2 ANALYSIS OF EXISTING WITH PROJECT CONDITIONS

Existing with Project conditions were evaluated using the same methods described in Chapter 1. Traffic signal timings and truck percentages were not adjusted from the existing condition. The Existing with Project analysis results are presented in **Table 11** based on the traffic volumes presented on Figure 10. Table 11 also includes the operations results for Existing conditions for reference purposes. The addition of project traffic would increase average delay at the study intersections slightly, but would not cause overall intersection operations to degrade to unacceptable levels. Peak hour signal warrants would continue to be satisfied at the Campbell Street/Grand Avenue intersection. However, as the Park project would not add more than ten vehicle trips to the critical movement, this impact is less-than-significant.

The Maritime Street at 7th Street intersection currently operates at a deficient LOS E and the addition of project trips would increase delay by more than four seconds, resulting in a potentially significant impact.

TABLE 11
EXISTING WITH PROJECT PEAK HOUR INTERSECTION LEVEL OF SERVICE

	Intersection	Control[1]	Peak Hour	Existing		Existing With Project		Significant Impact?
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
1	Burma Road/Maritime Street	Signal	PM SAT	13.4 12.0	B B	13.4 13.5	B B	No No
2	I-80 Ramps/West Grand Avenue/ Maritime Street/Wake Avenue[4&7]	Signal	PM SAT	26.1 32.5	C C	28.1 45.4	C D	No No
3	West Grand Avenue/Frontage Road/I-80 Ramps[5&8]	Signal	PM SAT	39.6 37.7	D D	43.1 43.0	D D	No No
4	West Grand Avenue/Campbell Street	SSSC	PM SAT	<10 (84.2) <10 (20.4)	A (F) A (C)	<10 (96.5) <10 (26.0)	A (F) A (D)	No No

TABLE 11
EXISTING WITH PROJECT PEAK HOUR INTERSECTION LEVEL OF SERVICE

Intersection		Control[1]	Peak Hour	Existing		Existing With Project		Significant Impact?
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
5A	24th Street/Mandela Parkway Southbound	SSSC	PM SAT	<10 (10.7) <10 (10.7)	A (B) A (B)	<10 (10.7) <10 (10.8)	A (B) A (B)	No No
5B	24th Street/Mandela Parkway Northbound	SSSC	PM SAT	<10 (16.3) <10 (12.7)	A (C) A (B)	<10 (16.4) <10 (12.9)	A (C) A (B)	No No
6A	West Grand Avenue/Mandela Parkway Southbound	Signal	PM SAT	16.6 14.5	B B	16.5 14.5	B B	No No
6B	West Grand Avenue/Mandela Parkway Northbound	Signal	PM SAT	16.9 18.4	B B	16.8 17.7	B B	No No
7A	20th Street/Mandela Parkway Southbound	SSSC	PM SAT	<10 (13.3) <10 (12.7)	A (B) A (B)	<10 (13.3) <10 (12.8)	A (B) A (B)	No No
7B	20th Street/Mandela Parkway Northbound	SSSC	PM SAT	<10 (12.0) <10 (10.3)	A (B) A (B)	<10 (12.1) <10 (10.4)	A (B) A (B)	No No
8	7th Street/I-880 Northbound Off-Ramp/Frontage Road[6&9]	Signal	PM SAT	26.4 18.3	C B	26.6 19.2	C B	No No
9	7th Street/Maritime Street	Signal	PM SAT	**59.1** 33.5	**E** C	**64.6** 35.3	**E** D	Yes No
10	West Grand Avenue/Adeline Street	Signal	PM SAT	14.9 14.5	B B	15.2 15.0	B B	No No

Notes: **Bold** text indicates potentially unacceptable intersection operations.

1. Signal = Signalized Intersection; SSSC = Side-street stop-controlled intersections; traffic on the main street does not stop while traffic on the side-street is controlled by a stop sign.
2. Delay presented in seconds per vehicle; for side-street stop-controlled intersections, delay presented in Intersection average (worst approach).
3. LOS = Level of Service.
4. Delay presented in table for Intersection 2 average delay/LOS. Existing Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: EB left = 43.2/D, EB thru = 24.5/C, EB right = 22.9/C
    b. Sat Peak Hour: EB left = 68.5/E, EB thru = 29.8/C, EB right = 28.2/C
5. Delay presented in table for Intersection 3 average delay/LOS. Existing Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: NB left = 40.4/D, NB thru/right = 39.7/D, SB left = 41.9/D, SB thru-right = 35.7/D
    b. Sat Peak Hour: NB left = 39.6/D, NB thru-right = 36.6/D, SB left = 40.0/D, SB thru-right = 35.9/D
6. Delay presented in table for Intersection 8 average delay/LOS. Existing Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: NB left = 24.2/C, NB thru/right = 25.3/C
    b. Sat Peak Hour: NB left = 11.4/B, NB thru-right = 12.1/B
7. Delay presented in table for Intersection 2 average delay/LOS. Existing + Project Delay/LOS for specific movements from the off-ramp as follows:

   a. PM Peak Hour: EB left = 47.7/D, EB thru = 28.2/C, EB right = 26.4/C
   b. Sat Peak Hour: EB left = 69.8/E, EB thru = 31.9/C, EB right = 30.4/C
8. Delay presented in table for Intersection 3 average delay/LOS. Existing + Project Delay/LOS for specific movements from the off-ramp as follows:
   a. PM Peak Hour: NB left = 41.4/D, NB thru/right = 39.6/D, SB left = 41.9/D, SB thru-right = 35.8/D
   b. Sat Peak Hour: NB left = 40.4/D, NB thru-right = 36.6/D, SB left = 40.0/D, SB thru-right = 36.1/D
9. Delay presented in table for Intersection 8 average delay/LOS. Existing + Project Delay/LOS for specific movements from the off-ramp as follows:
   a. PM Peak Hour: NB left = 25.9/C, NB thru/right = 25.5/C
   b. Sat Peak Hour: NB left = 12.6/B, NB thru-right = 12.8/B

Source: Fehr & Peers, November 2014.

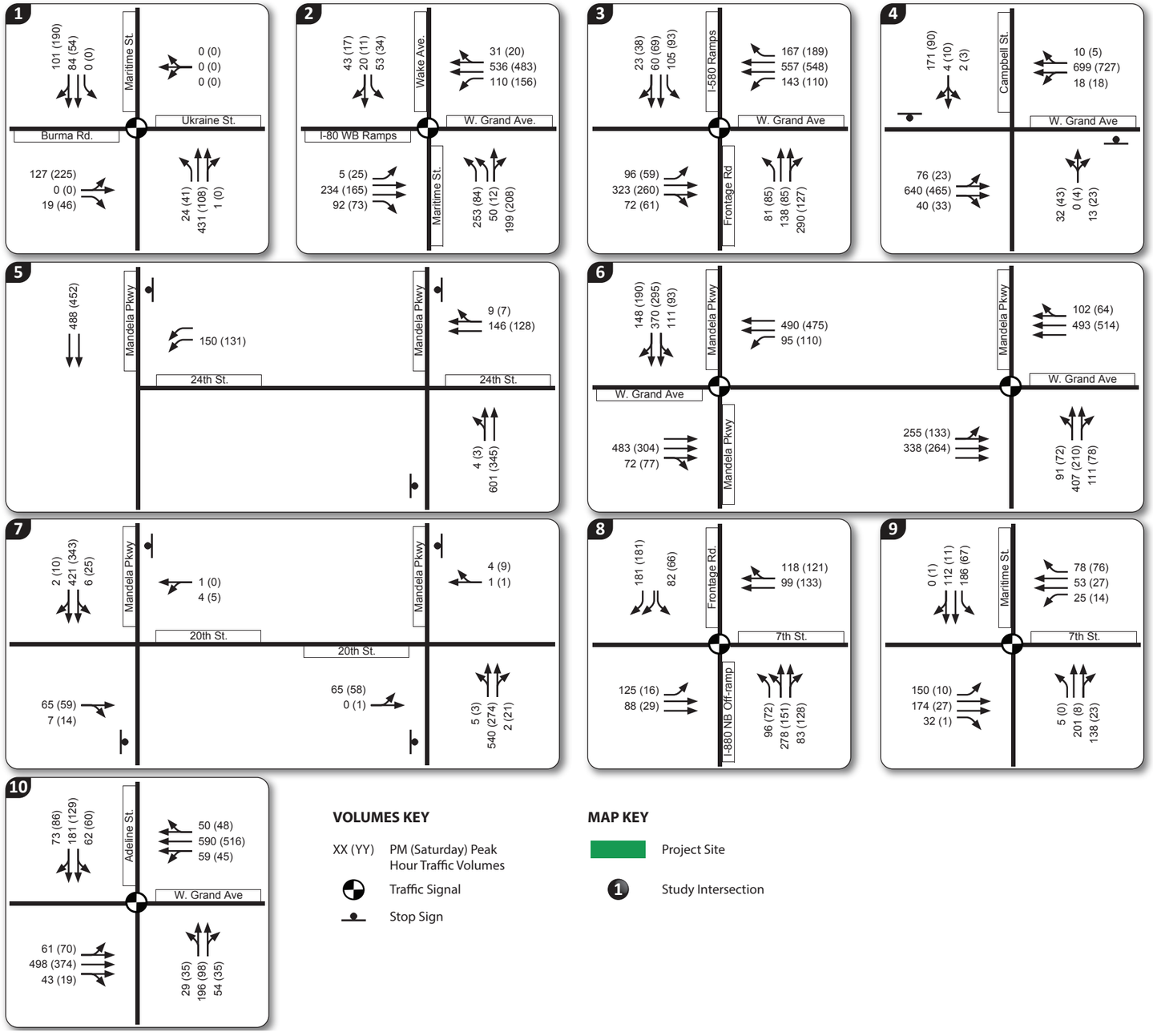


Figure 10.

Existing with Project
Peak Hour Volumes, Lane Configurations and Traffic Control

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4.3 EXISTING INTERSECTION IMPACTS AND MITIGATION MEASURES

This section evaluates the intersection LOS results presented in Table 11 and compares the results with the criteria for significant impacts, and presents mitigation measures for identified impacts.

Impact TR-1: Intersection 7 – 7th Street/Maritime Street

The addition of project-generated vehicle trips during the PM peak hours would worsen LOS E conditions, increasing average delay by more than 4 seconds. This is a ***significant impact*** based on City of Oakland Significance Criteria 3 (see Chapter 1).

Mitigation Measure TR-1: Upgrade the traffic signal equipment at the intersections to provide video detection for vehicles and bicycles. This would allow for better allocation of the green time to movements, improving the LOS to D for vehicles during the weekday PM and LOS C during the Saturday afternoon peak hour, as shown in **Table 12,** considering the Gateway Park project. Implementation of this measure would reduce the project impact to a ***less-than-significant*** level.

TABLE 12
EXISTING WITH PROJECT WITH MITIGATION
PEAK HOUR INTERSECTION LEVEL OF SERVICE

Intersection		Peak Hour	Existing Conditions		Existing With Project		Existing With Project With Mitigation	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
9	7th Street/Maritime Street	PM	**59.1**	**E**	**64.6**	**E**	41.4	D
		SAT	33.5	C	35.3	D	31.4	C

Notes: **Bold** text indicates potentially unacceptable intersection operations.
1. Delay presented in seconds per vehicle
2. LOS = Level of Service.
Source: Fehr & Peers, November 2014.

5.0 NEAR-TERM CONDITIONS

This chapter presents the results of the level of service calculations under near-term conditions without and with the project. Near-term without Project conditions are defined as conditions around the time the project is expected to be completed and occupied. Traffic volumes for Near-term without Project conditions comprise existing volumes plus traffic generated by approved but not yet constructed and occupied developments in the area. Near-term with Project conditions are defined as Near-term without Project conditions plus net new traffic generated by the proposed project. Conditions with development of the Gateway Path project are also presented, which considers the potential traffic shifts associated with the Campbell Street partial closure which would occur as part of the Path project.

5.1 NEAR-TERM INTERSECTION VOLUMES

Traffic volumes for the Near-term condition were developed based on a review of historical traffic counts, and review of traffic forecasts contained in the Oakland Army Base Project Initial Study/Addendum (2012) and the West Oakland Specific Plan EIR (2014). Several intersections evaluated in this project were also evaluated within those documents. Those forecasts were prepared using the then current version (June 2011) of the Alameda CTC Countywide Travel Demand Model (the Model) which is consistent with Association of Bay Area Governments' (ABAG) Projections 2009, the latest MTC Regional Transportation Plan, and the latest Alameda Countywide Plan. The 2012 Army Base Addendum contained forecasts of 2020 and 2035 conditions for the weekday morning and evening peak hours, while the 2014 EIR only contained 2035 forecasts for the weekday morning and evening peak hours. Based on our review of the forecasts and historical traffic counts, we developed a growth rate to apply to all study intersections.

Traffic counts at the same intersections collected on numerous dates within the last ten years indicate little to negative traffic growth in the study area. Greater levels of growth were projected in the 2012 and 2014 environmental documents.

For this analysis, existing (2013) traffic counts at intersections along the Grand Avenue and Mandela Parkway corridors were increased by a 2 percent annual growth rate for seven years to estimate 2020 conditions. For the two intersections on 7th Street, a 4 percent annual growth rate was applied. The same growth rate was applied to weekday PM and Saturday peak hour traffic volumes. The resulting Near-Term Without Project traffic volumes as shown on **Figure 11**. Project traffic was then added to develop Near-term With Project traffic volumes, as shown on **Figure 12**.

5.1.1 NEAR-TERM WITH GATEWAY PATH

The Gateway Path project could also be constructed within the near-term time frame, although that project is separate from the Park project. As it is unknown when both projects may be constructed, an analysis of near-term conditions with the Gateway Path, without and with the Park project was conducted to assess the near-term impacts of the Park should the Path be constructed.

The Path project is a new Class 1 path located in the City of Oakland, within Alameda County near the I-880 and I-80 interchange and the new East Span of the Bay Bridge. The Class 1 path would extend 6,030 feet (1.14 mile) between Mandela Parkway on the east and the Bay Bridge Trail on the west. The path is an elevated structure for most of this distance to provide access across existing freeways, railways and industrial areas. It is an independent structure, except over the railroad tracks where it would be on the West Grand Avenue overcrossing structure.

The Path project could also include Class 2 bike lanes and a 100-space parking lot at the east end of the Class 1 path, if funding is available. The Class 2 bike lanes would extend along surface streets near the east touchdown of the path, providing connections to Mandela Parkway and to the proposed Wood Street parking lot.

The Path project itself is not expected to generate vehicle traffic, as bicycle and pedestrian facilities are proposed to accommodate pedestrian and bicycle travel through the area. However, portions of the project could shift existing travel patterns, and generate new vehicle trips.

The closure of the south leg of Campbell Street at Grand Avenue would shift existing traffic that currently uses the south leg of the intersection to other roadway connections. Additionally, the Wood Street parking lot would accommodate path users that chose to drive to the area, park their vehicle, and then use the path. It is expected that some of these users would be those who currently park in other locations in the vicinity, such as in the Ikea and Target parking lots and parking areas off Burma Road. However, for the purpose of this assessment, all vehicle trips to the Wood Street parking lot are considered new trips to the study area.

To estimate the potential vehicle trip generation of the Wood Street parking lot, use of the Bay Bridge bicycle/pedestrian path was reviewed based on data collected by Caltrans in Fall of 2013[5]. The data shows that on a typical weekday, between approximately 300 pedestrians and 320 bicyclists use the Bay Bridge Path. On weekends, approximately 2,250 pedestrians and 1,800 bicyclists were observed using the

[5] Source: Rodney Oto, Caltrans District 4. Bicycle and pedestrian counts on Bay Bridge for October 2013. Information received via email on May 7, 2014.

path. Less than 10 percent of the daily activity was observed during the evening peak hour. On weekends, activity is dispersed throughout the day.

Based on the number of people using the Bay Bridge Path, estimates of how many pedestrian/bicycle trips on the Bay Bridge Path do not involve a vehicle, observations on the number of people in each vehicle that are parking in off-site retail lots, and the number of parking spaces available at the Wood Street lot, weekday and weekend daily and peak hour vehicle trip generation was estimated, as presented in **Table 13.** It is expected that the Wood Street parking lot could generate 400 weekday trips, including 10 morning and 50 evening peak hour trips. On a weekend, there could be 1,500 vehicle trips to the parking lot, including 150 peak hour trips

TABLE 13
WOOD STREET PARKING LOT VEHICLE TRIP GENERATION

Use	Weekday							Weekend			
	Daily	AM Peak Hour			PM Peak Hour			Daily	Peak Hour		
		In	Out	Total	In	Out	Total		In	Out	Total
Wood Street Parking Lot – 100 Spaces	400	5	5	10	25	25	50	1,500	75	75	150

Source: Fehr & Peers, November 2014

To estimate near-term conditions with the Path project, the peak hour trip generation was assigned to the roadway network based on similar trip distribution percentages developed for the analysis of the Park project, and added to the Near-Term without Project traffic volumes. The resulting volumes are shown on **Figure 13.** Trips generated by the Park project were then added to estimate Near-term conditions with both the Gateway Park and Path projects, as shown on **Figure 14**.

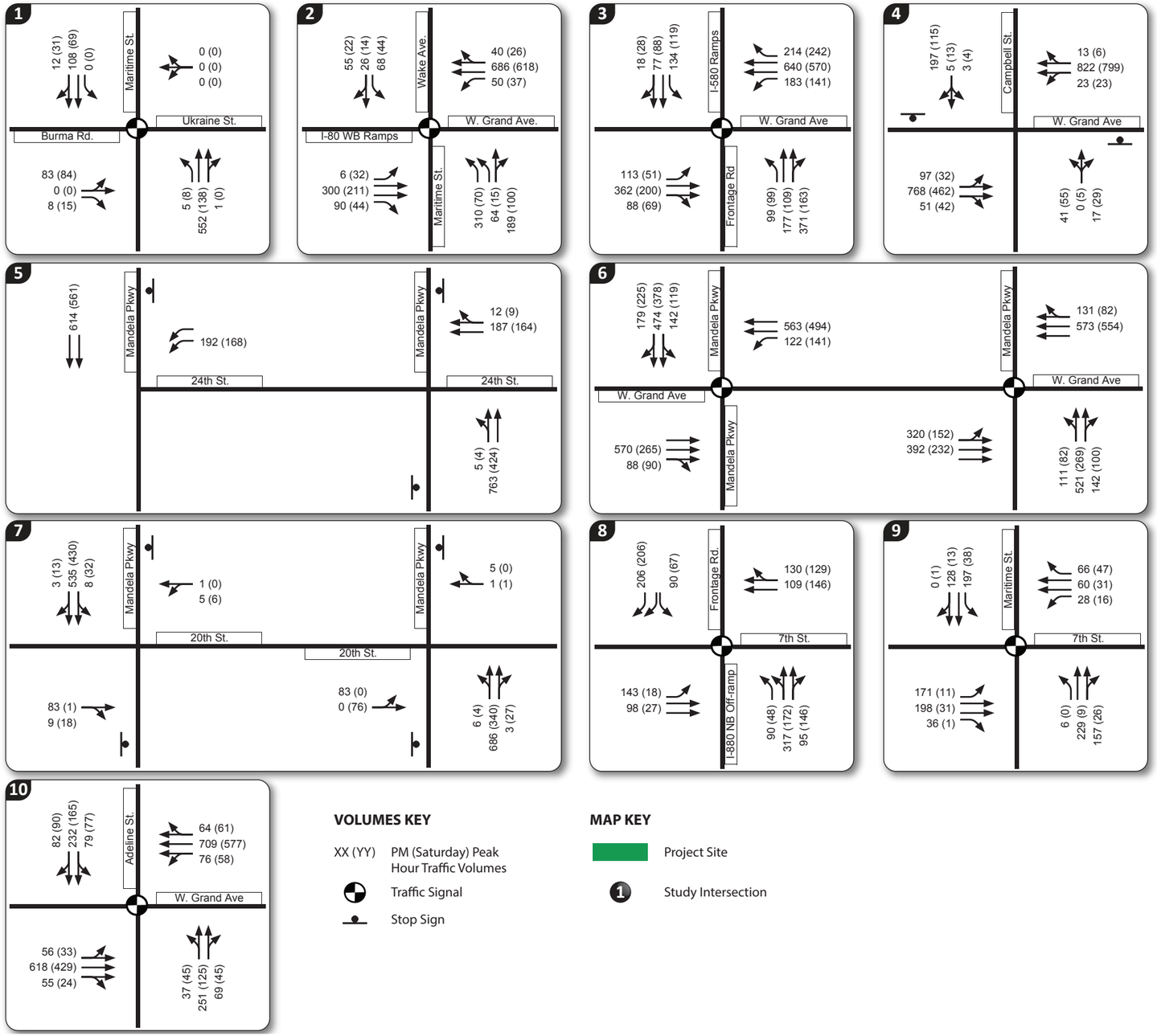


Figure 11.

Near-Term without Project
Peak Hour Volumes, Lane Configurations and Traffic Control

Graphics for Park Report\WC12-2992_11_NTVols

FEHR & PEERS

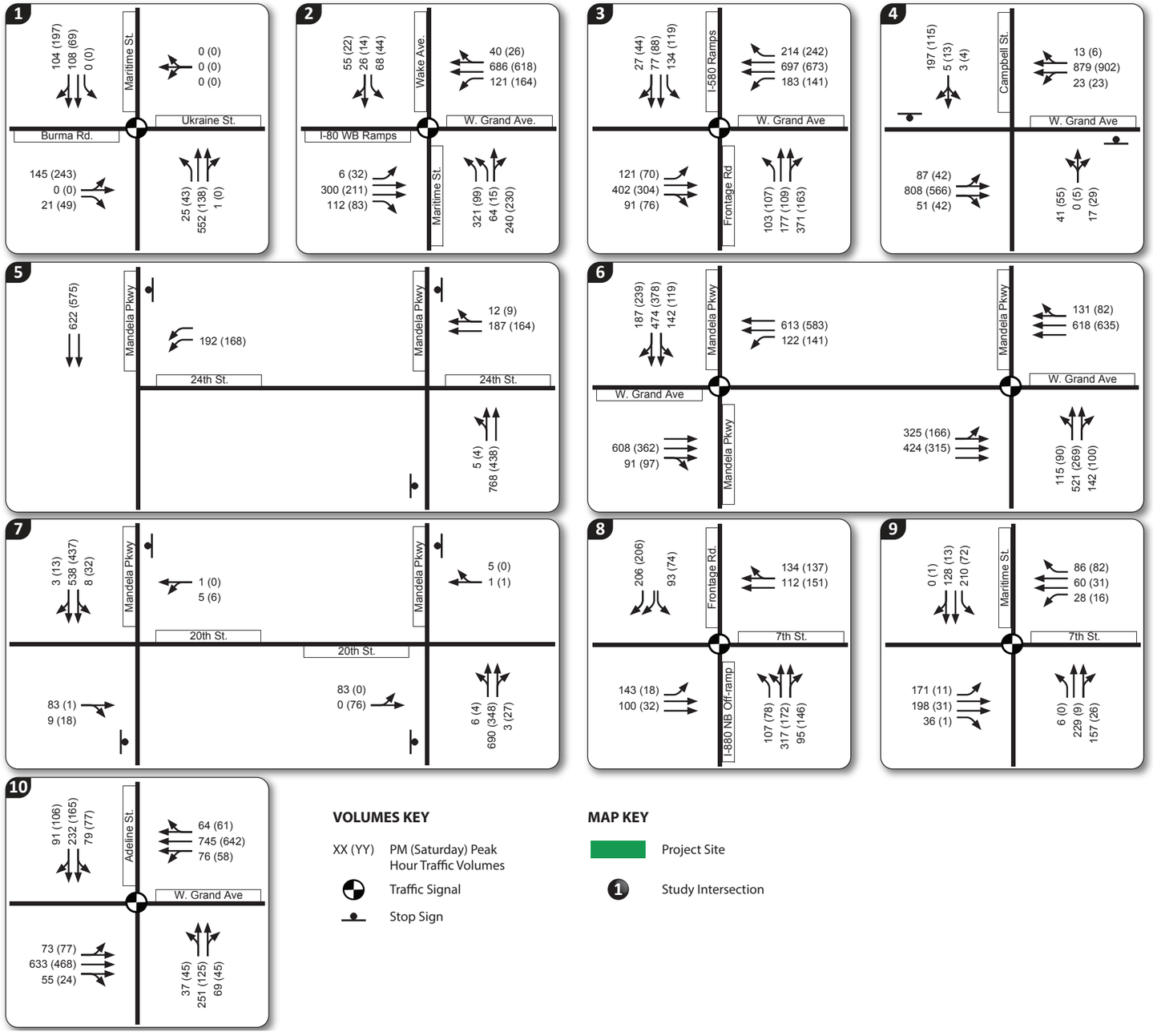


Figure 12.

Near-Term with Project
Peak Hour Volumes, Lane Configurations and Traffic Control

Graphics for Park Report\WC12-2992_12_NT+ProjVols

FEHR & PEERS

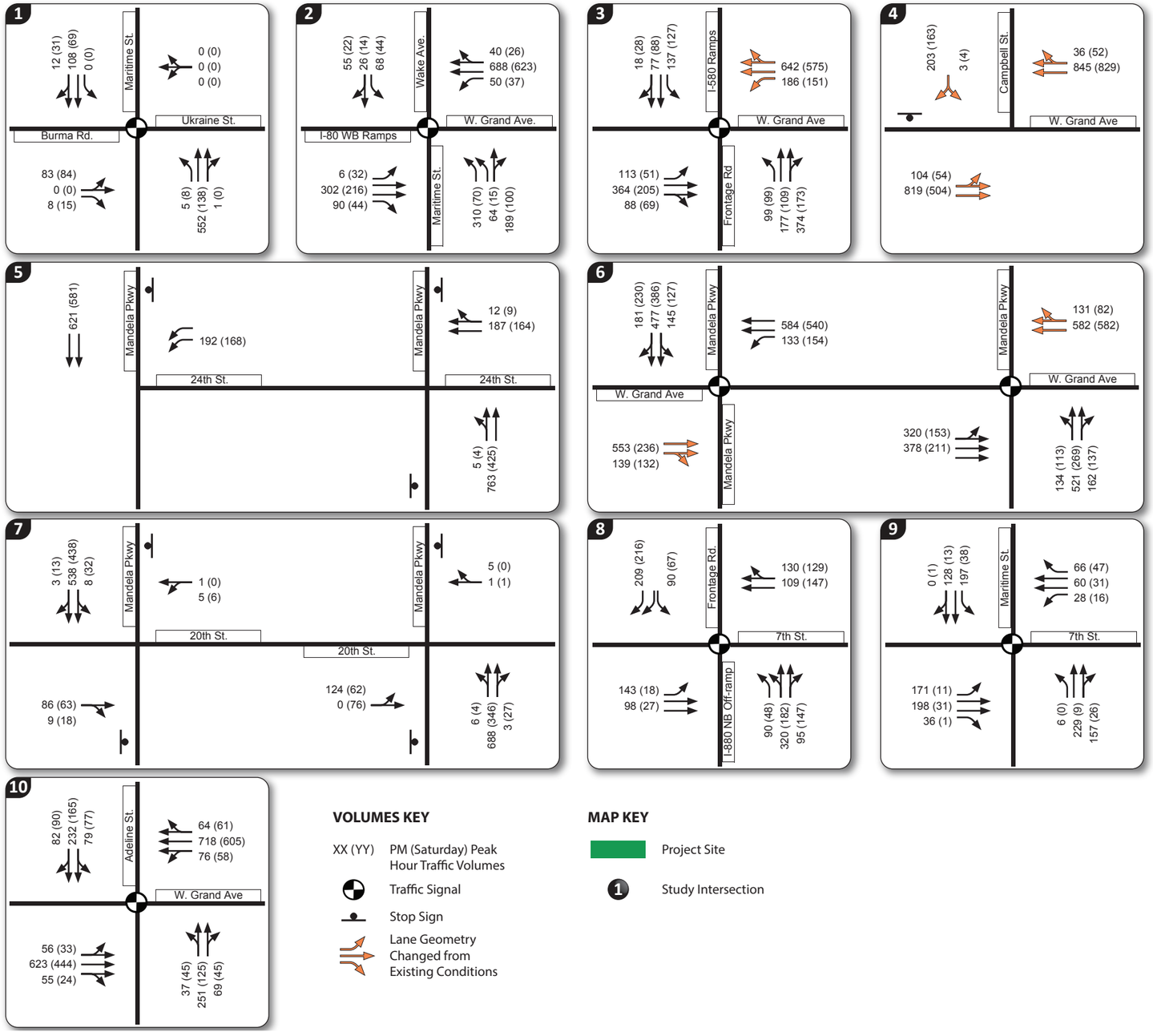


Figure 13.

Near-Term with Path and without Project
Peak Hour Volumes, Lane Configurations and Traffic Control

FEHR & PEERS

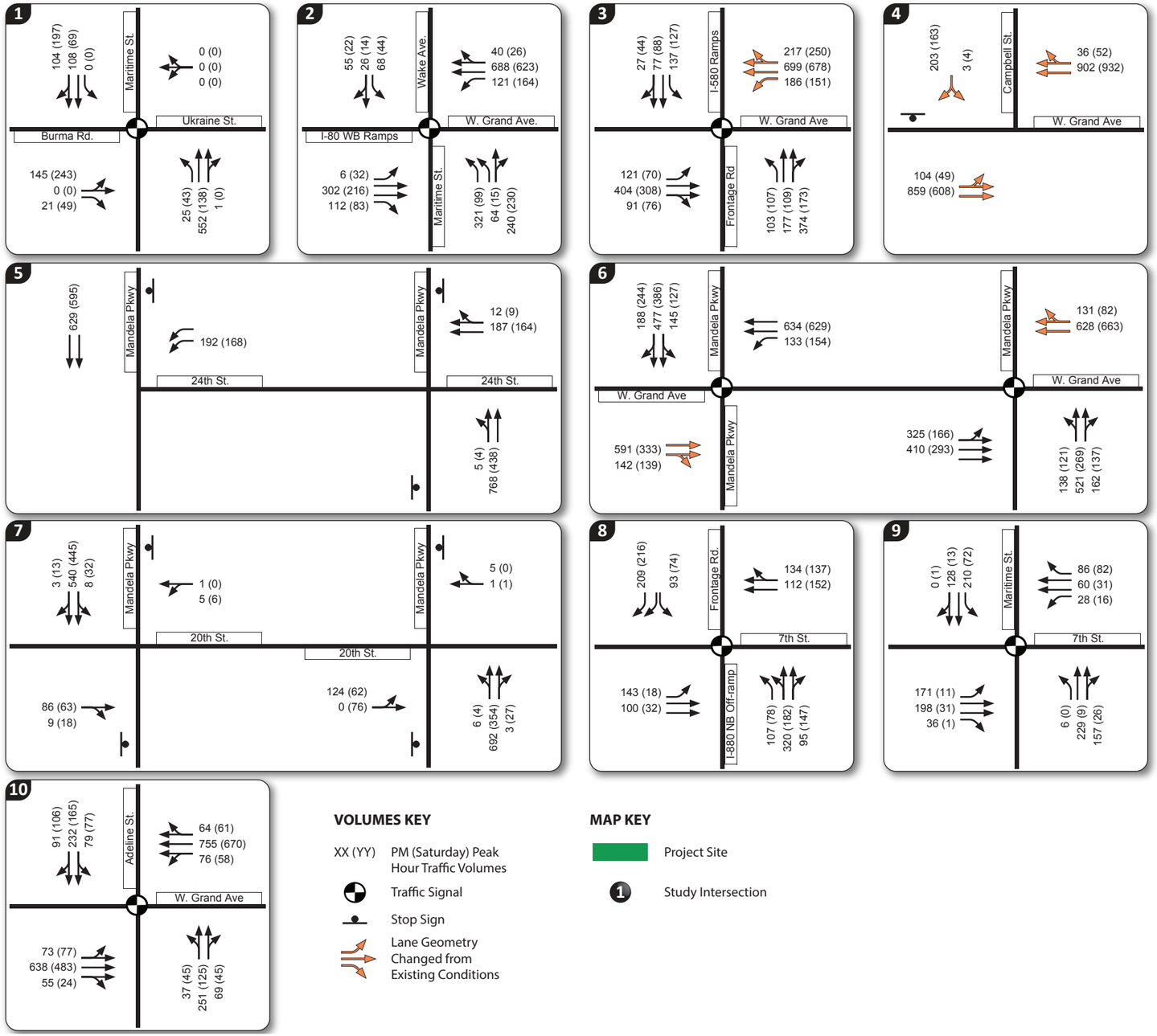


Figure 14.

Near-Term with Path and with Project
Peak Hour Volumes, Lane Configurations and Traffic Control

Graphics for Connection Report\WC12-2992_14_NT+Path+ProjVols

5.2 BACKGROUND ROADWAY IMPROVEMENTS

No improvements were assumed at any of the study intersections for the analysis of near-term conditions without the project. Intersection improvements at the Grand Avenue/Mandela Street and Grand Avenue/ Campbell Street intersections to accommodate enhanced bicycle and pedestrian facilities with the Path project were considered in the analysis of with Path Project conditions.

5.3 NEAR-TERM INTERSECTION LEVELS OF SERVICE

Level of service calculations were conducted to evaluate intersection operations under near-term conditions both without and with the Park project, and for conditions considering development of the Gateway Path. Traffic signal timings and heavy vehicle percentages were unchanged from the analysis of Existing conditions. The LOS results are summarized in **Table 14** and **Table 15**. The corresponding LOS calculation sheets are included in **Appendix B**.

The results of the LOS calculations indicate that the West Grand Avenue/Frontage Road/I-80 Ramps intersection would degrade from LOS D to LOS E during both the weekday evening and Saturday afternoon peak hours. However, as LOS E is considered acceptable for this intersection, this is not considered a significant impact.

Traffic associated with the Gateway Park project would further worsen the operations of the Grand Avenue/Campbell Street intersection, but would not add traffic to the critical intersection movements. Therefore, the Park project impact is considered less than significant. Considering the Path project and closure of the south leg of the intersection and associated vehicle diversions, delay for the side-street movements would decrease in the near-term condition with the Path project and the Park project and no improvements above those being constructed with the Path project are recommended.

Operations of the 7th Street/Maritime Street intersection are projected to further worsen with near-term traffic growth, which would be further exacerbated by the Gateway Park project, resulting in a potentially significant impact.

The remaining study intersections are projected to operate at an overall level of service D or better during both the PM and Saturday peak hours without or with the Park project and the Path project.

TABLE 14
NEAR-TERM PEAK HOUR INTERSECTION LEVEL OF SERVICE

	Intersection	Control[1]	Peak Hour	Near-term without Project		Near-Term With Project		Significant Impact?
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
1	Burma Road/Maritime Street	Signal	PM SAT	14.4 12.2	B B	14.2 13.7	B B	No No
2	I-80 Ramps/West Grand Avenue/ Maritime Street/Wake Avenue[4&7]	Signal	PM SAT	29.4 34.6	C C	30.9 50.9	C D	No No
3	West Grand Avenue/Frontage Road/I-80 Ramps[5&8]	Signal	PM SAT	54.1 45.9	D D	64.5 63.8	E E	No No
4	West Grand Avenue/Campbell Street	SSSC	PM SAT	17.7 (>120) <10 (39.2)	C (F) A (E)	19.2 (>120) <10 (61.5)	D (F) A (F)	No No
5A	24th Street/Mandela Parkway Southbound	SSSC	PM SAT	<10 (11.6) <10 (11.6)	A (B) A (B)	<10 (11.6) <10 (11.7)	A (B) A (B)	No No
5B	24th Street/Mandela Parkway Northbound	SSSC	PM SAT	<10 (22.2) <10 (14.7)	A (C) A (B)	<10 (22.3) <10 (14.9)	A (C) A (B)	No No
6A	West Grand Avenue/Mandela Parkway Southbound	Signal	PM SAT	17.8 15.2	B B	17.7 15.3	B B	No No
6B	West Grand Avenue/Mandela Parkway Northbound	Signal	PM SAT	18.1 19.1	B B	18.1 18.5	B B	No No
7A	20th Street/Mandela Parkway Southbound	SSSC	PM SAT	<10 (15.8) <10 (16.3)	A (C) A (C)	<10 (15.8) <10 (16.5)	A (C) A (C)	No No
7B	20th Street/Mandela Parkway Northbound	SSSC	PM SAT	<10 (13.7) <10 (13.6)	A (B) A (B)	<10 (13.7) <10 (13.7)	A (B) A (B)	No No
8	7th Street/I-880 Northbound Off-Ramp/Frontage Road[6&9]	Signal	PM SAT	28.5 19.6	C B	28.8 20.3	C B	No No
9	7th Street/Maritime Street	Signal	PM SAT	**69.3** 33.6	**E** C	**76.1** 35.4	**E** D	Yes No
10	West Grand Avenue/Adeline Street	Signal	PM SAT	15.8 14.8	B B	16.2 15.3	B B	No No

Notes: **Bold** text indicates potentially unacceptable intersection operations.

1. Signal = Signalized Intersection; SSSC = Side-street stop-controlled intersections;
2. Delay presented in seconds per vehicle; for side-street stop-controlled intersections, delay presented in Intersection average (worst approach).
3. LOS = Level of Service.
4. Delay presented in table for Intersection 2 average delay/LOS. Near-term Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: EB left = 53.3/D, EB thru = 26.3/C, EB right = 24.2/C

   b. Sat Peak Hour: EB left = 57.2/E, EB thru = 28.6/C, EB right = 26.8/C
5. Delay presented in table for Intersection 3 average delay/LOS. Near-Term Delay/LOS for specific movements from the off-ramp as follows:
   a. PM Peak Hour: NB left = 43.2/D, NB thru/right = 42.2/D, SB left = 45.8/D, SB thru-right = 36.1/D
   b. Sat Peak Hour: NB left = 41.9/D, NB thru-right = 37.5/D, SB left = 42.6/D, SB thru-right = 26.5/D
6. Delay presented in table for Intersection 8 average delay/LOS. Near-Term Delay/LOS for specific movements from the off-ramp as follows:
   a. PM Peak Hour: NB left = 27.2/C, NB thru/right = 29.2/C
   b. Sat Peak Hour: NB left = 12.3/B, NB thru-right = 13.2/B
7. Delay presented in table for Intersection 2 average delay/LOS. Near-Term + Project Delay/LOS for specific movements from the off-ramp as follows:
   a. PM Peak Hour: EB left = 54.6/D, EB thru = 31.5/C, EB right = 28.9
   b. Sat Peak Hour: EB left = 57.9/E, EB thru = 31.2/C, EB right = 29.4/C
8. Delay presented in table for Intersection 3 average delay/LOS. Near-Term + Project Delay/LOS for specific movements from the off-ramp as follows:
   a. PM Peak Hour: NB left = 43.8/D, NB thru/right = 42.2/D, SB left = 45.8/D, SB thru-right = 36.3/D
   b. Sat Peak Hour: NB left = 42.9/D, NB thru-right = 37.5/D, SB left = 42.6/D, SB thru-right = 36.7/D
9. Delay presented in table for Intersection 8 average delay/LOS. Near-Term + Project Delay/LOS for specific movements from the off-ramp as follows:
   a. PM Peak Hour: NB left = 29.1/C, NB thru/right = 29.5/C
   b. Sat Peak Hour: NB left = 13.1/B, NB thru-right = 13.4/B

Source: Fehr & Peers, November 2014.

TABLE 15
NEAR-TERM WITH GATEWAY PATH PEAK HOUR INTERSECTION LEVEL OF SERVICE

	Intersection	Control[1]	Peak Hour	Near-term without Project		Near-Term With Project		Significant Impact?
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
1	Burma Road/Maritime Street	Signal	PM SAT	14.4 12.2	B B	14.2 13.7	B B	No No
2	I-80 Ramps/West Grand Avenue/ Maritime Street/Wake Avenue	Signal	PM SAT	29.3 34.7	C C	30.9 50.8	C D	No No
3	West Grand Avenue/Frontage Road/I-80 Ramps	Signal	PM SAT	54.5 46.6	D D	64.9 64.6	E E	No No
4	West Grand Avenue/Campbell Street	SSSC	PM SAT	<10 (13.1) <10 (11.8)	A (B) A (B)	<10 (13.4) <10 (12.1)	A (B) A (B)	No No
5A	24th Street/Mandela Parkway Southbound	SSSC	PM SAT	<10 (11.6) <10 (11.8)	A (B) A (B)	<10 (11.7) <10 (11.9)	A (B) A (B)	No No
5B	24th Street/Mandela Parkway Northbound	SSSC	PM SAT	<10 (22.2) <10 (14.7)	A (C) A (B)	<10 (21.9) <10 (14.9)	A (C) A (B)	No No
6A	West Grand Avenue/Mandela Parkway Southbound	Signal	PM SAT	18.7 15.6	B B	18.8 15.9	B B	No No

TABLE 15
NEAR-TERM WITH GATEWAY PATH PEAK HOUR INTERSECTION LEVEL OF SERVICE

	Intersection	Control[1]	Peak Hour	Near-term without Project		Near-Term With Project		Significant Impact?
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
6B	West Grand Avenue/Mandela Parkway Northbound	Signal	PM SAT	18.7 20.4	B C	18.8 19.7	B B	No No
7A	20th Street/Mandela Parkway Southbound	SSSC	PM SAT	<10 (18.4) <10 (19.4)	A (C) A (C)	<10 (18.4) <10 (19.6)	A (C) A (C)	No No
7B	20th Street/Mandela Parkway Northbound	SSSC	PM SAT	<10 (14.7) <10 (13.5)	A (B) A (B)	<10 (14.8) <10 (13.6)	A (B) A (B)	No No
8	7th Street/I-880 Northbound Off-Ramp/Frontage Road	Signal	PM SAT	28.6 19.6	C B	28.8 20.3	C C	No No
9	7th Street/Maritime Street	Signal	PM SAT	**69.3** 33.6	**E** C	**76.1** 35.4	**E** D	Yes No
10	West Grand Avenue/Adeline Street	Signal	PM SAT	15.9 14.9	B B	16.3 15.4	B B	No No

Notes: **Bold** text indicates potentially unacceptable intersection operations.

1. Signal = Signalized Intersection; SSSC = Side-street stop-controlled intersections;
2. Delay presented in seconds per vehicle; for side-street stop-controlled intersections, delay presented in Intersection average (worst approach).
3. LOS = Level of Service.
4. Delay presented in table for Intersection 2 average delay/LOS. Near-Term + Path Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: EB left = 53.3/D, EB thru = 26.3/C, EB right = 24.1/C
    b. Sat Peak Hour: EB left = 58.4/E, EB thru = 28.6/C, EB right = 26.8/C
5. Delay presented in table for Intersection 3 average delay/LOS. Near-Term + Path Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: NB left = 43.2/D, NB thru/right = 42.2/D, SB left = 46.3/D, SB thru-right = 36.1/D
    b. Sat Peak Hour: NB left = 41.9/D, NB thru-right = 37.6/D, SB left = 43.5/D, SB thru-right = 36.5/D
6. Delay presented in table for Intersection 8 average delay/LOS. Near-Term + Path Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: NB left = 27.1/C, NB thru/right = 29.3/C
    b. Sat Peak Hour: NB left = 12.3/B, NB thru-right = 13.3/B
7. Delay presented in table for Intersection 2 average delay/LOS. Near-Term + Path + Project Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: EB left = 54.6/D, EB thru = 31.6/C, EB right = 28.9/C
    b. Sat Peak Hour: EB left = 58.0/E, EB thru = 31.2/C, EB right = 29.4/C
8. Delay presented in table for Intersection 3 average delay/LOS. Near-Term + Path + Project Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: NB left = 43.8/D, NB thru/right = 42.2/D, SB left = 46.3/D, SB thru-right = 36.3/D
    b. Sat Peak Hour: NB left = 42.9/D, NB thru-right = 37.6/D, SB left = 43.5/D, SB thru-right = 36.7/D
9. Delay presented in table for Intersection 8 average delay/LOS. Near-Term + Path + Project Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: NB left = 29.1/C, NB thru/right = 29.7/C
    b. Sat Peak Hour: NB left = 13.0/B, NB thru-right = 13.5/B

Source: Fehr & Peers, November 2014.

5.4 NEAR-TERM INTERSECTION IMPACTS AND MITIGATION MEASURES

This section evaluates the intersection LOS results presented in **Table 14** and **Table 15**, and compares the results with the criteria for significant impacts, and presents mitigation measures for identified impacts.

Impact TR-2: Intersection 7 – 7th Street/Maritime Street

The addition of project-generated vehicle trips during the PM peak hours would worsen LOS E conditions, increasing average delay by more than 4 seconds. This is a ***significant impact*** based on City of Oakland Significance Criteria 3.

Mitigation Measure TR-2: Implement Mitigation Measure TR-1, upgrading the traffic signal equipment at the intersections to provide video detection for vehicles and bicycles. This would allow for better allocation of the green time to movements, improving the LOS to D for vehicles during the weekday PM and LOS C during the Saturday afternoon peak hour, as shown in **Table 16,** considering the Gateway Park and Path projects. Implementation of this measure would reduce the Project impact to a ***less-than-significant*** level.

TABLE 16
NEAR-TERM WITH PROJECT WITH MITIGATION
PEAK HOUR INTERSECTION LEVEL OF SERVICE

Intersection		Peak Hour	Near-term without Project		Near-Term With Project		Near-Term With Project With Mitigation	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
9	7th Street/Maritime Street	PM	**69.3**	**E**	**76.1**	**E**	51.8	D
		SAT	33.6	C	35.4	D	32.9	C

Notes: **Bold** text indicates potentially unacceptable intersection operations.
1. Delay presented in seconds per vehicle
2. LOS = Level of Service.
Source: Fehr & Peers, November 2014.

6.0 CUMULATIVE CONDITIONS

This chapter presents the results of the level of service calculations under Cumulative conditions without and with the project.

6.1 CUMULATIVE INTERSECTION VOLUMES

Traffic volumes for the Cumulative condition were based on a similar approach to the near-term forecasts. Traffic forecasts from the near-term condition for intersections along the Grand Avenue and Mandela Parkway corridors were increased by 20 percent to estimate cumulative conditions. For the two intersections on 7th Street, a 40 percent growth rate was applied. The same growth rate was applied to weekday PM and Saturday peak hour traffic volumes. Estimated traffic volumes from the Gateway Path project were then added to the resulting forecasts to develop Cumulative without Project traffic volumes as shown on **Figure 15**. Project traffic was then added to develop Cumulative with Project traffic volumes, as shown on **Figure 16**.

6.2 CUMULATIVE ROADWAY IMPROVEMENTS

Based on information from the City of Oakland Bicycle Master Plan, Class 2 bicycle lanes are proposed to be installed on Adeline Street and West Grand Avenue within the study area. With the installation of bicycle lanes, a reduction in the number of vehicle travel lanes would occur - commonly referred to as a road-diet. Intersection improvements at the Grand Avenue/Mandela Street and Grand Avenue/Campbell Street intersections to accommodate the Path project were also considered in the analysis.

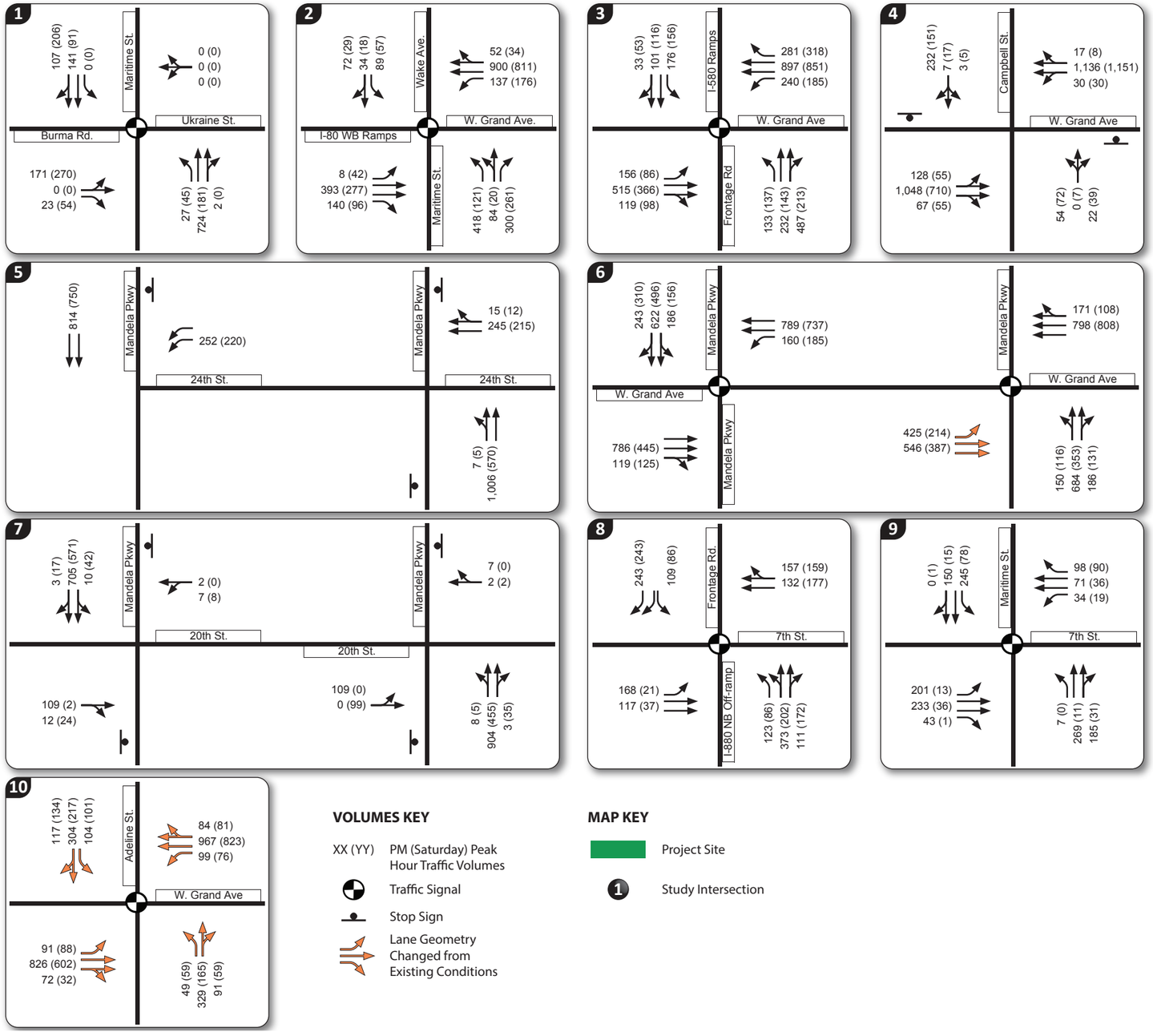


Figure 15.

Cumulative without Project
Peak Hour Volumes, Lane Configurations and Traffic Control

Graphics for Park Report\WC12-2992_15_CumuVols

FEHR & PEERS

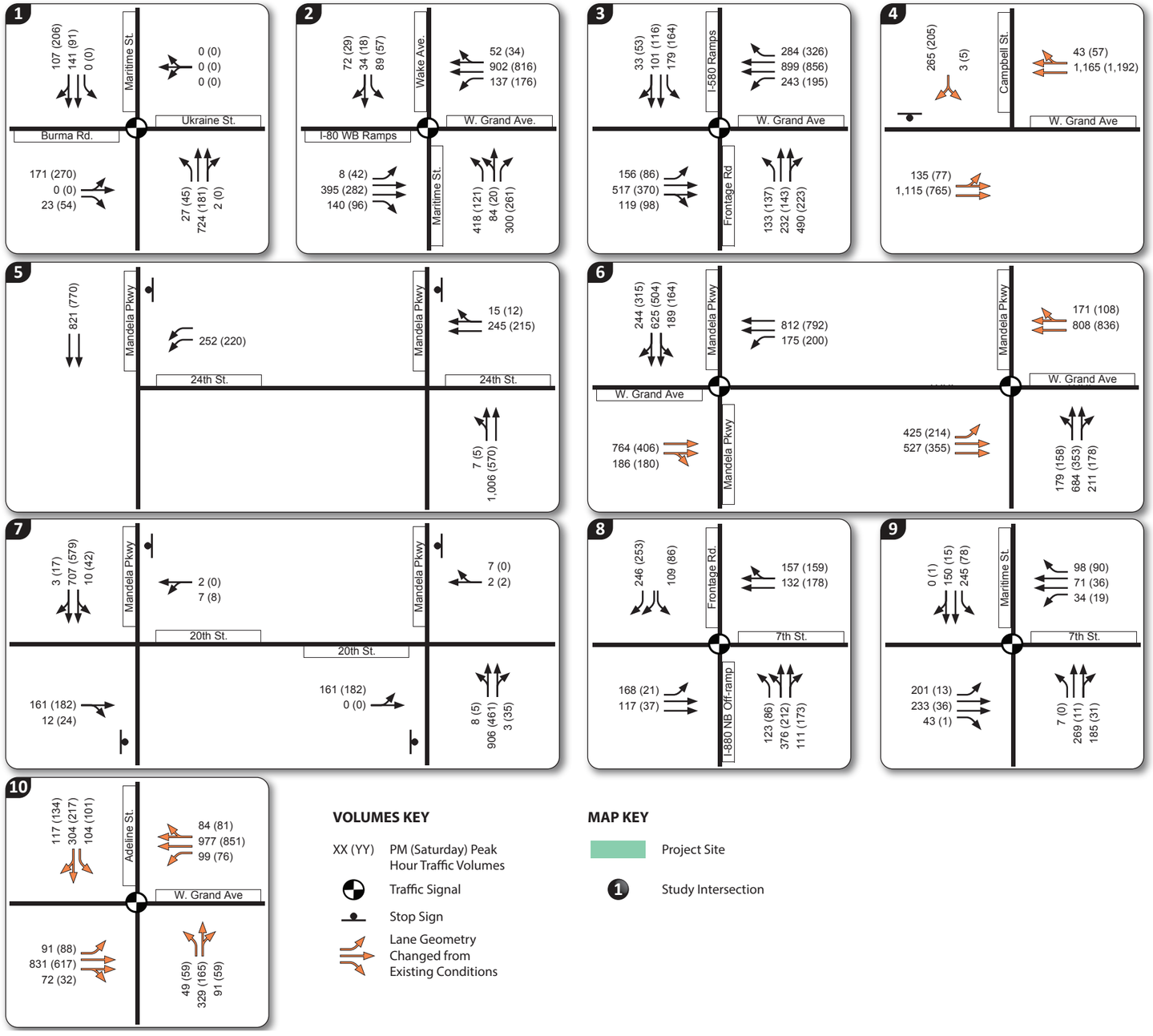


Figure 16.

Cumulative with Project
Peak Hour Volumes, Lane Configurations and Traffic Control

Graphics for Connection Report\WC12-2992_16_Cumu+ProjVols

FEHR & PEERS

6.3 CUMULATIVE INTERSECTION LEVELS OF SERVICE

Level of service calculations were conducted to evaluate intersection operations under Cumulative conditions both without and with the Project. Traffic signal timings were optimized to better accommodate the changes to traffic flow projected at the study intersections but heavy vehicle percentages were unchanged from the analysis of Existing conditions. The LOS results are summarized in **Table 17**. The corresponding LOS calculation sheets are included in **Appendix B**.

The results of the LOS calculations indicate that in the Cumulative condition, the Grand Avenue/Frontage Road/I-580 Ramp and 7th Street/Maritime Street intersections would operate at an overall unacceptable service level during at least one peak hour and the addition of Park traffic would significantly worsen operations.

The Mandela Parkway (Northbound)/Grand Avenue intersection would degrade to LOS E in the cumulative condition prior to the addition of project traffic. With the addition of Project traffic, operations would degrade to LOS F conditions. This is a potentially significant impact.

The remaining study intersections are projected to operate at an overall level of service D or better during both the weekday PM and Saturday afternoon peak hours without or with the Park project in the Cumulative condition.

TABLE 17
CUMULATIVE WITHOUT AND WITH PROJECT PEAK HOUR INTERSECTION LEVEL OF SERVICE

	Intersection	Control[1]	Peak Hour	Cumulative		Cumulative With Project		Significant Impact?
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
1	Burma Road/Maritime Street	Signal	PM SAT	14.3 11.4	B B	14.2 13.1	B B	No No
2	I-80 Ramps/West Grand Avenue/ Maritime Street/Wake Avenue[4&7]	Signal	PM SAT	28.1 33.5	C C	29.5 45.5	C D	No No
3	West Grand Avenue/Frontage Road/I-80 Ramps[5&8]	Signal	PM SAT	**106.6 (v/c=0.88)** **88.0 (v/c=0.66)**	**F** **F**	**>120 (v/c=0.92)** **114.2 (v/c=0.75)**	**F** **F**	Yes Yes
4	West Grand Avenue/Campbell Street	SSSC	PM SAT	<10 (18.5) <10 (15.1)	A (C) A (C)	<10 (18.6) <10 (16.1)	A (C) A (C)	No No

TABLE 17
CUMULATIVE WITHOUT AND WITH PROJECT PEAK HOUR INTERSECTION LEVEL OF SERVICE

	Intersection	Control[1]	Peak Hour	Cumulative		Cumulative With Project		Significant Impact?
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
5A	24th Street/Mandela Parkway Southbound	SSSC	PM SAT	<10 (13.4) <10 (12.9)	A (B) A (B)	<10 (13.5) <10 (13.0)	A (B) A (B)	No No
5B	24th Street/Mandela Parkway Northbound	SSSC	PM SAT	<10 (45.5) <10 (17.4)	A (C) A (B)	<10 (48.0) <10 (17.7)	A (E) A (C)	No No
6A	West Grand Avenue/Mandela Parkway Southbound	Signal	PM SAT	25.4 15.0	C B	25.7 15.5	C B	No No
6B	West Grand Avenue/Mandela Parkway Northbound	Signal	PM SAT	79.3 30.3	E C	**98.2 (v/c=1.66)** 42.5	**F** D	Yes No
7A	20th Street/Mandela Parkway Southbound	SSSC	PM SAT	<10 (26.8) <10 (26.6)	A (C) A (C)	<10 (26.9) <10 (27.1)	A (D) A (D)	No No
7B	20th Street/Mandela Parkway Northbound	SSSC	PM SAT	<10 (17.1) <10 (13.1)	A (B) A (B)	<10 (19.7) <10 (13.1)	A (C) A (B)	No No
8	7th Street/I-880 Northbound Off-Ramp/Frontage Road[6&9]	Signal	PM SAT	30.8 19.1	C B	31.2 19.4	C B	No No
9	7th Street/Maritime Street	Signal	PM SAT	**82.2 (v/c=0.73)** 31.1	**F** C	**89.0 (v/c=0.75)** 36.7	**F** D	No No
10	West Grand Avenue/Adeline Street	Signal	PM SAT	51.2 39.9	D D	53.4 44.0	D D	No No

Notes: **Bold** text indicates potentially unacceptable intersection operations.

1. Signal = Signalized Intersection; SSSC = Side-street stop-controlled intersections;
2. Delay presented in seconds per vehicle; for side-street stop-controlled intersections, delay presented in Intersection average (worst approach).
3. LOS = Level of Service.
4. Delay presented in table for Intersection 2 average delay/LOS. Cumulative without Park Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: EB left = 103.0/F, EB thru = 21.7/C, EB right = 19.5/B
    b. Sat Peak Hour: EB left = 81.6/F, EB thru = 26.2/C, EB right = 24.2/C
5. Delay presented in table for Intersection 3 average delay/LOS. Cumulative without Park Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: NB left = 47.6/D, NB thru/right = 64.7/E, SB left = 54.8/D, SB thru-right = 36.3/D
    b. Sat Peak Hour: NB left = 45.2/D, NB thru-right = 38.3/D, SB left = 48.0/D, SB thru-right = 36.8/D
6. Delay presented in table for Intersection 8 average delay/LOS. Cumulative without Park Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: NB left = 29.2/C, NB thru/right = 32.7/C
    b. Sat Peak Hour: NB left = 13.6/B, NB thru-right = 14.8/B

7. Delay presented in table for Intersection 2 average delay/LOS. Cumulative with Project Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: EB left = 103.7/D, EB thru = 26.3/C, EB right = 23.5/C
    b. Sat Peak Hour: EB left = 78.8/E, EB thru = 28.2/C, EB right = 26.2/C
8. Delay presented in table for Intersection 3 average delay/LOS. Cumulative with Project Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: NB left = 48.4/D, NB thru/right = 67.5/E, SB left = 54.8/D, SB thru-right = 36.5/D
    b. Sat Peak Hour: NB left = 46.5/D, NB thru-right = 38.3/D, SB left = 48.0/D, SB thru-right = 37.0/D
9. Delay presented in table for Intersection 8 average delay/LOS. Cumulative with Project Delay/LOS for specific movements from the off-ramp as follows:
    a. PM Peak Hour: NB left = 31.2/C, NB thru/right = 33.2/C
    b. Sat Peak Hour: NB left = 14.3/B, NB thru-right = 14.9/B

Source: Fehr & Peers, November 2014.

6.4 CUMULATIVE INTERSECTION IMPACTS AND MITIGATION MEASURES

This section evaluates the intersection LOS results presented in Table 17 compared to the results with the criteria for significant impacts, and presents mitigation measures for identified impacts.

Impact TR-3: Intersection 3 - West Grand Avenue/Frontage Road/I-80 Ramps

The addition of project-generated vehicle trips during the PM and Saturday peak hours would worsen LOS F conditions and increase the volume-to-capacity ratio by 0.03 or more. This is a ***significant impact*** based on City of Oakland Significance Criteria 5 and 18.

Mitigation Measure TR-3: Upgrade the traffic signal equipment at the intersections to provide video detection for vehicles and bicycles. This would allow for better allocation of the green time to movements, improving the LOS to D for vehicles in both the weekday PM and Saturday afternoon peak hours, as shown in **Table 18.** Implementation of this measure would reduce the Project impact to a ***less-than-significant*** level.

Impact TR-4: Intersection 6 - West Grand Avenue/Mandela Parkway (Northbound)

The addition of project-generated vehicle trips during the weekday PM peak hours would result in LOS F conditions and increase average delay by more than 4 seconds. This is a ***significant impact*** based on City of Oakland Significance Criteria 2 and 18.

Mitigation Measure TR-4: Install protected-permitted phasing for the eastbound left-turn movement and upgrade the traffic signal equipment as necessary to provide video detection bicyclists. This improvement would result in LOS E conditions during the

weekday PM peak hour, as shown in **Table 18.** Implementation of this measure would reduce the Project impact to a ***less-than-significant*** level.

Impact TR-5: Intersection 7 – 7th Street/Maritime Street

The addition of project-generated vehicle trips during the PM peak hours would worsen LOS F conditions but would not increase the volume to capacity ratio by 0.03 or more. Therefore, this impact is ***less-than-significant*** based on City of Oakland Significance Criteria 5 and 18.

TABLE 18
CUMULATIVE WITH PROJECT WITH MITIGATION
PEAK HOUR INTERSECTION LEVEL OF SERVICE

Intersection		Peak Hour	Cumulative Without Project		Cumulative With Project		Cumulative With Project With Mitigation	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
3	West Grand Avenue/ Frontage Road/I-80 Ramps	PM	**106.6 (v/c=0.88)**	**F**	**>120 (v/c=0.92)**	**F**	57.7	E
		SAT	**88.0 (v/c=0.66)**	**F**	**114.2 (v/c=0.75)**	**F**	40.0	D
6B	West Grand Avenue/Mandela Parkway Northbound	PM	**79.3**	**E**	**98.2 (v/c=1.66)**	**F**	50.6	D
		SAT	30.3	C	42.5	D	26.0	C

Notes: **Bold** text indicates potentially unacceptable intersection operations.
1. Delay presented in seconds per vehicle
2. LOS = Level of Service.
Source: Fehr & Peers, November 2014.

6.4.1 IMPACTS TO TRANSIT TRAVEL TIME

This section discusses the potential of the project to substantially increase travel times for AC transit buses (Significance Criteria 9). Although the project has the potential to increase traffic volumes along Grand Avenue where AC Transit Route NL and Line 31 operate, implementation of mitigation measures TR-3 and TR-4 could decrease travel time along the corridor by reducing intersection delay. Therefore, the project impact to transit travel time is considered ***less-than-significant***.

7.0 ALAMEDA COUNTY TRANSPORTATION COMMISSION ROADWAY ANALYSIS

A separate analysis of regional roadways is required to comply with requirements of the Alameda County Transportation Commission (ACTC). The ACTC requires the analysis of project impacts to Metropolitan Transportation System (MTS) roadways identified in the congestion management plan (CMP) for development projects that would generate more than 100 PM peak hour trips. As shown in Chapter 3, the proposed Park project could generate more than 100 PM peak hour trips.

This chapter outlines the roadway analysis, which considers the impact of the Project on freeways, major arterials, and other major roadways as designated by ACTC. Main items of discussion include the geographic scope of the ACTC roadway analysis, the analysis method, and the results for 2020 and 2035.

7.1 ACTC ROADWAY ANALYSIS STUDY AREA

Freeway and surface street segments in Oakland and surrounding areas were included in this assessment as they are in close proximity to the Park site:

- Interstate 80
- Interstate 580
- Interstate 880
- Interstate 980
- Grand Avenue

7.2 TRAFFIC FORECASTS

Fehr & Peers used the Alameda Countywide Travel Demand Model to forecast 2020 and 2035 traffic volumes on the MTS roadway system. The results of the ACTC model were used to forecast the No Project condition for 2020 and 2035. Project trips were distributed to the MTS roadway segments (including both freeways and surface streets) identified above using the project trip distribution presented in Chapter 3 for traffic growth projected for the site not accounted for in the ACTC model. The distribution of project trips onto the MTS segments results in With Project volumes for the near-term and cumulative conditions.

7.3 ANALYSIS METHOD

Operations of the MTS freeway and surface street segments were assessed based on volume-to-capacity (V/C) ratios. For freeway segments, a per-lane capacity of 2,000 vehicles per hour was used. For surface streets, a per-lane capacity of 800 vehicles per hour was used. These capacities do not reflect additional capacity provided at intersections through turn pockets. Roadway segments with a V/C ratio greater than 1.0 are assigned LOS F.

7.4 SIGNIFICANCE CRITERIA

According to the significance criteria presented previously in Chapter 1, the addition of project traffic causes a significant impact on an MTS roadway segment if:

- The addition of project traffic causes a segment's operation to degrade to LOS F.
- The addition of project trips causes the V/C ratio to increase by more than 0.03 on a segment that already operates at LOS F without the project traffic.

7.5 ANALYSIS RESULTS

The MTS PM Peak Hour roadway segment analysis under 2020 and 2035 conditions are provided in **Table 19** for the 2020 condition and **Table 20** for the 2035 condition. Results of the analysis indicate that the proposed project is not expected to result in or worsen already deficient operations on roadway segments in the project vicinity in 2020.

In 2035, the addition of project trips would increase the V/C ratio of a segment already operating at LOS F by more than 0.03:

- Grand Avenue between Mandela Parkway and I-880

Mitigation measures to address significant MTS Project impacts are discussed below.

TABLE 19
2020 PM PEAK HOUR CMP ROADWAY SEGMENT ANALYSIS

Link Location/Segment Limits		# Lanes	No Project Volume	With Project Volume	Percent Increase	V/C Ratio– No Project	V/C Ratio – With Project	No Project LOS	With Project LOS	Change from LOS E or better to LOS F	LOS F and Change in V/C
Freeway Segments											
I-580 Eastbound											
I-80/I-580	MacArthur Blvd	4	9,112	9,116	0%	1.14	1.14	F	F	-	No
MacArthur Blvd	I-980/SR 24	5	8,549	8,553	0%	0.85	0.86	D	D	No	-
I-980/SR 24	Oakland Avenue	5	8,648	8,659	0%	0.86	0.87	D	D	No	-
Oakland Avenue	Grand Avenue	4	9,358	9,369	0%	1.17	1.17	F	F	-	No
I-580 Westbound											
Lakeshore Avenue	Grand Avenue	4	7,654	7,671	0%	0.96	0.96	E	E	No	-
Grand Avenue	Oakland Avenue	4	8,502	8,519	0%	1.06	1.06	F	F	-	No
Oakland Avenue	I-980/SR 24	5	7,744	7,761	0%	0.77	0.78	D	D	No	-
I-980/SR 24	I-580/I-80	5	7,238	7,246	0%	0.72	0.72	C	C	No	-
I-980 Eastbound											
I-880	12th Street	2	3,429	3,434	0%	0.86	0.86	D	D	No	-
12th Street	27th Street	3	4,325	4,330	0%	0.72	0.72	C	C	No	-
27th Street	I-580	5	6,073	6,078	0%	0.61	0.61	C	C	No	-

TABLE 19
2020 PM PEAK HOUR CMP ROADWAY SEGMENT ANALYSIS

Link Location/Segment Limits		# Lanes	No Project Volume	With Project Volume	Percent Increase	V/C Ratio– No Project	V/C Ratio – With Project	No Project LOS	With Project LOS	Change from LOS E or better to LOS F	LOS F and Change in V/C
I-980 Westbound											
I-580	27th Street	5	4,354	4,368	0%	0.44	0.44	B	B	No	-
27th Street	12th Street	3	3,441	3,448	0%	0.57	0.57	B	B	No	-
12th Street	I-880	2	3,788	3,795	0%	0.63	0.63	C	C	No	-
I-880 Northbound											
Broadway	I-980	5	7,695	7,712	0%	0.77	0.77	D	D	No	-
I-980	Market Street	4	5,759	5,776	0%	0.72	0.72	C	C	No	-
Market Street	5th Street	3	5,084	5,101	0%	0.85	0.85	D	D	No	-
5th Street	7th Street	3	5,304	5,321	0%	0.88	0.89	D	D	No	-
7th Street	Grand Avenue	3	4,435	4,435	0%	0.74	0.74	C	C	No	-
Grand Avenue	I-580/I-80	2	3,974	3,982	0%	0.99	1.00	E	E	No	-
I-880 Southbound											
I-580/I-80	Grand Avenue	4	4,930	4,939	0%	0.62	0.62	C	C	No	-
Grand Avenue	7th Street	3	4,631	4,631	0%	0.77	0.77	D	D	No	-
7th Street	5th Street	3	5,373	5,384	0%	0.90	0.90	D	D	No	-

TABLE 19
2020 PM PEAK HOUR CMP ROADWAY SEGMENT ANALYSIS

Link Location/Segment Limits		# Lanes	No Project Volume	With Project Volume	Percent Increase	V/C Ratio– No Project	V/C Ratio – With Project	No Project LOS	With Project LOS	Change from LOS E or better to LOS F	LOS F and Change in V/C
5th Street	Market Street	3	4,542	4,553	0%	0.76	0.76	D	D	No	-
Market Street	I-980	3	4,542	4,553	0%	0.76	0.76	D	D	No	-
I-980	Broadway	4	7,903	7,914	0%	0.99	0.99	E	E	No	-
I-80 Eastbound											
East of Toll Plaza		6	12,391	12,402	0%	1.03	1.03	F	F	-	No
I-880 Connector	I-580 Connector	2	4,516	4,527	0%	1.13	1.13	F	F	-	No
I-580 Connector	Powell Street	6	8,793	8,793	0%	0.73	0.73	C	C	No	-
Powell Street	Bay Street/Ashby	4	10,376	10,384	0%	1.30	1.30	F	F	-	No
I-80 Westbound											
Ashby Avenue	Powell Street	4	9,197	9,208	0%	1.15	1.15	F	F	-	No
Powell Street	I-580 Connector	5	10,075	10,086	0%	1.01	1.01	F	F	-	No
I-580 Connector	I-880	3	4,368	4,370	0%	0.73	0.73	C	C	No	-
West of Toll Plaza		5	8,243	8,251	0%	0.82	0.83	D	D	No	-
Arterials											
Grand Avenue Eastbound											

TABLE 19
2020 PM PEAK HOUR CMP ROADWAY SEGMENT ANALYSIS

Link Location/Segment Limits		# Lanes	No Project Volume	With Project Volume	Percent Increase	V/C Ratio– No Project	V/C Ratio – With Project	No Project LOS	With Project LOS	Change from LOS E or better to LOS F	LOS F and Change in V/C
I-880	Mandela Parkway	2	1,922	1,962	2%	1.20	1.23	F	F	-	No
Mandela Parkway	Adeline Street	3	2,014	2,046	2%	0.84	0.85	D	D	No	-
Adeline Street	San Pablo Ave	3	2,049	2,064	1%	0.85	0.86	D	D	No	-
San Pablo Ave	Telegraph Avenue	3	979	994	2%	0.41	0.41	B	B	No	-
Grand Avenue Westbound											
Telegraph Avenue	San Pablo Ave	3	1,172	1,208	3%	0.49	0.50	B	B	No	-
San Pablo Ave	Adeline Street	3	1,074	1,110	3%	0.45	0.46	B	B	No	-
Adeline Street	Mandela Parkway	3	1,131	1,176	4%	0.47	0.49	B	B	No	-
Mandela Parkway	I-880	2	1,346	1,403	4%	0.84	0.88	D	D	No	-

Notes: ***Bold and italic*** text indicates a potentially significant impact.
Source: Fehr & Peers, November 2014.

TABLE 20
2035 PM PEAK HOUR CMP ROADWAY SEGMENT ANALYSIS

Link Location/Segment Limits		# Lanes	No Project Volume	With Project Volume	Percent Increase	V/C Ratio– No Project	V/C Ratio – With Project	No Project LOS	With Project LOS	Change from LOS E or better to LOS F	LOS F and Change in V/C
Freeway Segments											
I-580 Eastbound											
I-80/I-580	MacArthur Blvd	4	9,619	9,623	0%	1.20	1.20	F	F	-	No
MacArthur Blvd	I-980/SR 24	5	8,817	8,821	0%	0.88	0.88	D	D	No	-
I-980/SR 24	Oakland Avenue	5	8,638	8,649	0%	0.86	0.86	D	D	No	-
Oakland Avenue	Grand Avenue	4	9,542	9,553	0%	1.19	1.19	F	F	-	No
I-580 Westbound											
Lakeshore Avenue	Grand Avenue	4	8,369	8,386	0%	1.05	1.05	F	F	-	No
Grand Avenue	Oakland Avenue	4	8,761	8,778	0%	1.10	1.10	F	F	-	No
Oakland Avenue	I-980/SR 24	5	8,085	8,102	0%	0.81	0.81	D	D	No	-
I-980/SR 24	I-580/I-80	5	8,175	8,183	0%	0.82	0.82	D	D	No	-
I-980 Eastbound											
I-880	12th Street	2	3,247	3,252	0%	0.81	0.81	D	D	No	-
12th Street	27th Street	3	4,174	4,179	0%	0.70	0.70	C	C	No	-
27th Street	I-580	5	6,097	6,102	0%	0.61	0.61	C	C	No	-

TABLE 20
2035 PM PEAK HOUR CMP ROADWAY SEGMENT ANALYSIS

Link Location/Segment Limits		# Lanes	No Project Volume	With Project Volume	Percent Increase	V/C Ratio– No Project	V/C Ratio – With Project	No Project LOS	With Project LOS	Change from LOS E or better to LOS F	LOS F and Change in V/C
I-980 Westbound											
I-580	27th Street	5	4,969	4,983	0%	0.50	0.50	B	B	No	-
27th Street	12th Street	3	3,689	3,696	0%	0.61	0.62	C	C	No	-
12th Street	I-880	3	4,289	4,296	0%	0.71	0.72	C	C	No	-
I-880 Northbound											
Broadway	I-980	5	7,941	7,958	0%	0.79	0.80	D	D	No	-
I-980	Market Street	4	6,146	6,163	0%	0.77	0.77	D	D	No	-
Market Street	5th Street	3	5,308	5,325	0%	0.88	0.89	D	D	No	-
5th Street	7th Street	3	5,760	5,777	0%	0.96	0.96	E	E	No	-
7th Street	Grand Avenue	3	4,666	4,666	0%	0.78	0.78	D	D	No	-
Grand Avenue	I-580/I-80	2	4,235	4,243	0%	1.06	1.06	F	F	-	No
I-880 Southbound											
I-580/I-80	Grand Avenue	4	4,945	4,954	0%	0.62	0.62	C	C	No	-
Grand Avenue	7th Street	3	4,987	4,987	0%	0.83	0.83	D	D	No	-
7th Street	5th Street	3	5,955	5,966	0%	0.99	0.99	E	E	No	-

TABLE 20
2035 PM PEAK HOUR CMP ROADWAY SEGMENT ANALYSIS

Link Location/Segment Limits		# Lanes	No Project Volume	With Project Volume	Percent Increase	V/C Ratio– No Project	V/C Ratio – With Project	No Project LOS	With Project LOS	Change from LOS E or better to LOS F	LOS F and Change in V/C
5th Street	Market Street	3	5,881	5,892	0%	0.98	0.98	E	E	No	-
Market Street	I-980	3	4,487	4,498	0%	0.75	0.75	C	C	No	-
I-980	Broadway	4	8,322	8,333	0%	1.04	1.04	F	F	-	No
I-80 Eastbound											
East of Toll Plaza		6	13,416	13,427	0%	1.12	1.12	F	F	-	No
I-880 Connector	I-580 Connector	2	4,734	4,745	0%	1.18	1.19	F	F	-	No
I-580 Connector	Powell Street	6	9,132	9,132	0%	0.76	0.76	D	D	No	-
Powell Street	Bay Street/Ashby	4	11,045	11,053	0%	1.38	1.38	F	F	-	No
I-80 Westbound											
Ashby Avenue	Powell Street	4	9,703	9,714	0%	1.21	1.21	F	F	-	No
Powell Street	I-580 Connector	5	10,421	10,432	0%	1.04	1.04	F	F	-	No
I-580 Connector	I-880	3	4,696	4,698	0%	0.78	0.78	D	D	No	-
West of Toll Plaza		5	9,785	9,793	0%	0.98	0.98	E	E	No	-
Arterials											
Grand Avenue Eastbound											

TABLE 20
2035 PM PEAK HOUR CMP ROADWAY SEGMENT ANALYSIS

Link Location/Segment Limits		# Lanes	No Project Volume	With Project Volume	Percent Increase	V/C Ratio– No Project	V/C Ratio – With Project	No Project LOS	With Project LOS	Change from LOS E or better to LOS F	LOS F and Change in V/C
I-880	Mandela Parkway	2	2,016	2,056	2%	1.26	1.29	F	F	-	No
Mandela Parkway	Adeline Street	3	2,725	2,757	1%	1.14	1.15	F	F	-	No
Adeline Street	San Pablo Ave	3	2,817	2,832	1%	1.17	1.18	F	F	-	No
San Pablo Ave	Telegraph Avenue	3	1,979	1,994	1%	0.82	0.83	D	D	No	-
Grand Avenue Westbound											
Telegraph Avenue	San Pablo Ave	3	1,692	1,728	2%	0.70	0.72	C	C	No	-
San Pablo Ave	Adeline Street	3	1,883	1,919	2%	0.78	0.80	D	D	No	-
Adeline Street	Mandela Parkway	3	1,944	1,989	2%	0.81	0.83	D	D	No	-
Mandela Parkway	I-880	2	1,922	1,979	3%	1.20	1.24	F	F	-	***Yes***

Notes: ***Bold and italic*** text indicates a potentially significant impact.
Source: Fehr & Peers, November 2014.

2035 Conditions

2035 MTS Impact 1: Results of the MTS analysis indicate that the proposed project could worsen projected deficient operations on Grand Avenue from Mandela Parkway to Interstate I-880 in 2035 by increasing the volume-to-capacity ratio by more than 0.03 in the PM peak hour. This is considered a potentially ***significant impact***, based on City of Oakland Impact Criteria 7.

2035 MTS Mitigation Measure 1: Widening Grand Avenue to provide three travel lanes in each direction would result in acceptable vehicle operations on this roadway segment. However, Grand Avenue is a major commuter thoroughfare built-out to its ultimate configuration as envisioned in the City of Oakland General Plan. Other segments of this roadway which are three lanes in each direction are planned to undergo a road diet, i.e. taking away a lane of travel for vehicles, to better accommodate other modes of travel along the corridor. This improvement, which is not reflected in the ACTC model, would likely shift travel from Grand Avenue to other corridors and other modes of travel. Further widening to this roadway could encourage additional vehicle traffic that could be accommodated by other modes of travel, if those modes are more convenient. Additionally, intersections along Grand Avenue are projected to operate at acceptable service levels in the cumulative condition with incorporation of mitigation measures, indicating that this analysis does not consider the added capacity at intersections, which is usually the constraint within the transportation system.

Improvements to parallel corridors in the region as well as improvements to bicycle, pedestrian and transit facilities would provide alternative travel routes and additional transportation capacity in the region. However, as it is unknown when these improvements would be implemented, the project impact would potentially remain ***significant and unavoidable***.

8.0 OTHER TRANSPORTATION THRESHOLDS

This chapter discusses conditions in the study area for pedestrians, bicyclists and transit users with the project and reviews traffic safety thresholds and other thresholds as described in Chapter 1.

8.1 TRAFFIC SAFETY THRESHOLDS

The following traffic safety thresholds as set by the City of Oakland were reviewed:

10. Directly or indirectly cause or expose roadway users (e.g., motorists, pedestrians, bus riders, bicyclists) to a permanent and substantial transportation hazard due to a new or existing physical design feature or incompatible uses
11. Directly or indirectly result in a permanent substantial decrease in pedestrian safety
12. Directly or indirectly result in a permanent substantial decrease in bicyclist safety
13. Directly or indirectly result in a permanent substantial decrease in bus rider safety
14. Generate substantial multi-modal traffic traveling across at-grade railroad crossings that cause or expose roadway users (e.g., motorists, pedestrians, bus riders, bicyclists) to a permanent and substantial transportation hazard

The proposed project would increase motor vehicle traffic, pedestrian and bicycle activity in the West Oakland area. The Park project is expected to attract new bus riders to the transit system in the area.

8.1.1 TRANSPORTATION HAZARDS

The Park project would provide a destination for bicycle and pedestrian trips along the Bay Trail, provide a number of recreational amenities, improve staging and access to the bicycle and pedestrian path along the East Span of the Bay Bridge, and provide links to existing and planned segments of the Bay Trail. It is expected to attract both local residents as well as visitors. New bicycle and pedestrian facilities would be designed to meet or exceed City of Oakland and Caltrans standards, with the intent to separate bicycle and pedestrian travel from motor vehicle travel to the greatest extent possible, thus reducing hazards. There are several ways to access the site by both auto and non-auto modes that may not be intuitive to infrequent Park visitors given the roadway network in the area.

The Park would provide a pedestrian and bicycle destination and could contribute to increased demand on the Bay Bridge Trail.



At the West Grand Avenue/Frontage Road/I-80 Ramps intersection, the project may add pedestrian and bicycle traffic to an intersection where the current pedestrian accommodations are insufficient to accommodate increased demand.

Only one vehicle access point is provided to Gateway Park via Burma Road. If this roadway is blocked or obstructed, emergency vehicle access may be impaired.

There are numerous at-grade railroad crossings within the Port of Oakland area, including infrequently used spur lines. The project may add vehicle, bicycle and pedestrian traffic across these facilities.

Impact TR-6: Bicycle and Pedestrian Conflicts

A Trail Level of Service (LOS) Calculator as developed by North Carolina State University and Toole Design Group, based on the Federal Highway Administration *Shared-Use Path Level of Service Calculator—A User's Guide,* July 2006, was used to assess the Pedestrian/Bicycle LOS on the Bay Bridge Path adjacent to the Park, which considers factors such as bicyclist passing, desired buffer space between path users, and the mix of bicyclists, pedestrians, runners and child bicyclists[7].

The projected level of bicycle and pedestrian activity on the Bay Bridge Path from Tables 9 and 10 was used to calculate weekday and weekend peak hour Trail LOS.

In the near-term, conditions assuming activity at the high-end of the range would result in a Trail LOS of B during the weekday PM peak hour, with conditions degrading to Trail LOS E on a weekend day with activity at the high level of the range.

In the cumulative condition, the Trail LOS could degrade to LOS E during the weekday PM peak hour with activity at the high-end of the range – approximately 750 pedestrians and bicyclists per hour. The Trail LOS would degrade to F during the weekend peak hour with projections at the high-end of the range –

[7] Trail LOS A = Excellent. Trail has optimum conditions for individual bicyclists and retains ample space to absorb more users of all modes, while providing a high-quality user experience.
Trail LOS B = Good. Trail has good bicycling conditions, and retains significant room to absorb more users, while maintaining an ability to provide a high-quality user experience.
Trail LOS C = Fair. Trail has at least minimum width to meet current demand and to provide basic service to bicyclists. A modest level of additional capacity is available for bicyclists and skaters; however more pedestrians, runners, or other slow-moving users will begin to diminish LOS for bicyclists.
Trail LOS D = Poor. Trail is nearing its functional capacity given its width, volume, and mode split. Peak period travel speeds are likely to be reduced by levels of crowding. The addition of more users of any mode will result in significant service degradation. Some bicyclists and skaters are likely to adjust their experience expectations or to avoid peak-period use.
Trail LOS E = Very Poor. Given trail width, volume, and user mix, the trail has reached its functional capacity. Peak-period travel speeds are likely to be reduced by levels of crowding. The trail may enjoy strong community support because of its high usage rate; however, many bicyclists and skaters are likely to adjust their experience expectations, or to avoid peak period use.
Trail LOS F = Failing. Trail significantly diminishes the experience for at least one, and most likely for all user groups. It does not effectively serve most bicyclists; significant user conflicts should be expected.

approximately 1,180 pedestrians and bicyclists per hour. It is not expected that level of activity would occur along the entire length of the East Span.

Given the potential level of Bicycle and Pedestrian activity during peak periods, conflicts could exist where the Park would connect to the Bay Bridge Trail in several places within the Park. As this could create a hazard for pedestrians and bicyclists, this is a potentially ***significant impact*** based on City of Oakland Significance Criteria Threshold 10.

> Mitigation Measure TR-6: Provide additional pavement width and markings within the vicinity of the Bay Bridge Trail access locations from the Park, including, directional signage and striping, and potentially fencing to separate passive Park users from active Bay Trail users. Implementation of this measure would reduce the Pedestrian Safety impact to a ***less-than-significant*** level.

Impact TR-7: Bicycle and Pedestrian Safety

Intersection 3 - West Grand Avenue/Frontage Road/I-80 Ramps intersection: The Park project could add pedestrian and bicycle traffic to an intersection that provides minimal pedestrian and bicycle accommodations. This is a ***significant impact*** based on City of Oakland Significance Criteria Thresholds 10, 11, and 12.

> Mitigation Measure TR-7: Upgrade the marked crosswalk along the south leg of the intersection. Install pedestrian and bicycle signal heads and upgrade the traffic signal equipment as necessary to accommodate the pedestrian and bicycle movement across the intersection. With installation of video detection for both bicyclists and vehicles, the improvements are not projected to degrade the automobile level of service at the intersection (level of service results for the Cumulative condition assuming this measure are presented in Table 18). Implementation of this measure would reduce the project impact to a ***less-than-significant*** level.

Impact TR-8: Site Access

The project would add a regional destination to an area with potentially confusing access, which could create circuitous travel and distracted drivers. This is a potentially ***significant impact*** based on City of Oakland Significance Criteria Threshold 10.

> Mitigation Measure TR-8: Develop a way-finding plan for both vehicles and non-motorized visitors to the site. Installation of signage at various decision points along

access routes would reduce driver confusion and reduce circuitous travel though the area for all modes of travel, reducing the impact to a ***less-than-significant*** level.

Impact TR-9: Emergency Vehicle Access

The project would add activity to an area with only one access point, Burma Road. If this roadway is blocked or obstructed, emergency vehicle access could be impaired. This is a ***significant impact*** based on City of Oakland Significance Criteria Threshold 10.

Mitigation Measure TR-9: Work with the Port of Oakland and the City of Oakland to construct a second emergency vehicle access to the Gateway Area or provide an emergency service program and emergency evacuation plan using waterborne vessels (this was identified as a mitigation measure in the 2012 Oakland Army Base Initial Study/Addendum). Implementation of this measure would reduce the impact to a ***less-than-significant*** level.

Impact TR-10: Railroad Crossings

The project may increase vehicle, pedestrian and bicycle travel across at-grade railroad crossings within the vicinity of the project site, including rail crossings on Burma Road, west of Maritime Street and Maritime Street, south of Burma Road. Although these crossings are not currently in use, redevelopment within the Port of Oakland area could put these rail crossings, and others, back into active use. Mitigation was identified in the 2012 Oakland Army Base Initial Study/Addendum related to the construction of new or relocated at-grade crossings. As the Park project does not proposed to alter any at-grade crossings in the area, and should the existing crossings in the study area that are not currently in use be placed back into active use, that project proponent would be responsible for upgrading the crossings. Therefore, the Park project impact is considered ***less-than-significant***.

8.1.2 PEDESTRIAN SAFETY

The project would increase pedestrian travel in the area, but would construct pedestrian amenities to accommodate increased pedestrian demand. The Park hours would typically be from dawn to dusk; lighting would be provided throughout the park for security and along paths and within parking area. The impacts to pedestrian safety are ***less-than significant***.

8.1.3 BICYCLE SAFETY

The project would increase bicycle travel in the area, but would construct bicycle facilities to accommodate increased bicycle demand. The Park hours would typically be from dawn to dusk; lighting



would be provided throughout the park for security and along paths and within parking area. It is expected that the Path project, would construct a separated bicycle and pedestrian path connecting West Oakland to the Bay Bridge Trail prior to the Park project. A separated bicycle facility, where there currently is none, would enhance bicycle safety. The Path would have lighting and access provided 24-hours a day. Should the Park project be constructed prior to the Path project, bicycle and pedestrian access from Grand Avenue would be limited, creating a potentially temporary, through hazardous situation, that is a potentially ***significant impact*** based on City of Oakland Significance Criteria Threshold 12.

Impact TR-11: Bicycle Safety

The Park project would generate bicycle demand along Grand Avenue between Mandela Parkway and Burma Road. Should the Path project not be constructed, this is a ***significant impact*** based on City of Oakland Significance Criteria Threshold 12 as new bicyclists demand would be added to an area without facilities to serve them.

Mitigation Measure TR-11: Construct the Gateway Path within the same general time frame as the first phase of Gateway Park. Implementation of this measure would reduce the Bicycle Safety impact to a ***less-than-significant*** level.

8.1.4 BUS RIDER SAFETY

The project is expected to increase demand for transit in an area that is not currently served by transit. It is recommended that the Gateway Park Working Group coordinate with AC transit to determine if fixed-route service to the site is feasible; if it is not feasible in the near-term, explore providing shuttles from area BART stations on days when peak activity is projected. A designated transit stop with transit amenities within the site.

8.2 OTHER THRESHOLDS

The following additional transportation-related thresholds as set by the City of Oakland were reviewed:

15. Fundamentally conflict with adopted City policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities adopted for the purpose of avoiding or mitigating an environmental effect and actually result in a physical change in the environment
16. Result in a substantial, though temporary, adverse effect on the circulation system during construction of the project
17. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks

8.2.1 CONSISTENCY WITH ADOPTED POLICIES, PLANS OR PROGRAMS SUPPORTING ALTERNATIVE TRANSPORTATION

The discussion of consistency with adopted policies, plans or programs supporting alternative transportation is based on application of Significance Threshold 15. A discussion of applicable policies and plans is provided below. In general, the proposed project is consistent with these policies, plans and programs, and would not cause a significant impact by conflicting with adopted policies, plans, or programs supporting public transit, bicycle, or pedestrian.

The City of Oakland General Plan Land Use Transportation Element (LUTE) and the City's Complete Streets Policy (84204 CMS), states a strong preference for encouraging the use of non-automobile transportation modes, such as transit, bicycling, and walking. The proposed project would encourage the use of non-automobile transportation modes by providing additional bicycle and pedestrian facilities within the City of Oakland.

The proposed project would add Class 1 and Class 2 bicycle facilities within the Gateway Park area, improving access the Bay Trail corridor, consistent with the City's *Bicycle Master Plan*. In addition, Mitigation Measures TR-1, TR-3, TR-4, TR-6, TR-7, TR-9, TR-10 and TR-11 would improve access, circulation, safety, and comfort for pedestrian and bicyclists further encouraging the use of these modes in the project vicinity. Based on our review, the Park project would not conflict with adopted City policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. This is a ***less-than-significant*** impact, and no mitigation measures are required.

8.2.2 CONSTRUCTION-PERIOD IMPACTS

Project construction is expected to occur over a 15-year period between 2015 and 2030 as funding becomes available. During the construction period, temporary and intermittent transportation impacts may result from truck movements as well as construction worker vehicles to and from the project site. The construction-related traffic may temporary reduce capacities of roadways in the project vicinity because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles.

The City of Oakland Construction Traffic and Parking Standard Condition of Approval (SCA) requires that a Construction Traffic Management Plan be developed as part of a larger Construction Management Plan to address potentially significant impacts during the project's construction. Thus, with the implementation of this SCA, the proposed project would not result in a substantial, though temporary, adverse affect on the

circulation system during construction of the project. This is a ***less-than-significant*** impact, and no mitigation measures are required.

8.2.3 CHANGES IN AIR TRAFFIC PATTERNS

The Oakland International Airport is located about seven miles southeast of the project site. The project would be at the same level as existing structures in the area and are not expected to interfere with current flight patterns of Oakland International Airport or other nearby airports. Therefore, the proposed project would not result in changes to air traffic patterns. This is a ***less-than-significant*** impact, and no mitigation measures are required.

8.3 PARKING

Although not a CEQA issue, the proposed parking supply was reviewed in relationship to the expected parking demand. Between 255 and 555 spaces may be constructed within Gateway Park, with the potential to provide an additional 200 spaces within the Wood Street parking lot (see Path project for more details), as shown in **Table 21**. The projected parking demand is difficult to calculate as there are a number of variables that cannot be easily estimated, such as the number of visitors, the duration of stay, the expected auto occupancy, and the arrival travel mode. Similar to the approach to calculate vehicle trip generation, the peak parking demand was calculated for a range of annual visits for off-peak and peak weekdays and weekends, as presented in **Table 22.**

TABLE 21
PROPOSED PARKING SUPPLY

Location	Number of Spaces
East of Bridge Yard Building[1]	0-200
West of Bridge Yard Building	200-0
Radio Beach	5
Windbreak	50-150
On-Site Subtotal	**255-555**
Wood Street	0-200
Gateway Park Complex Total	***255-755***

Notes: If no parking is provided east of the Bridge Yard building, spaces will be provided west of the Bridge Yard Building
Source: TyLin, November 2014.

TABLE 22
GATEWAY PARK
PEAK PARKING DEMAND RANGE

Number of Annual Visitors	Off-Peak Weekday[1]	Off-Peak Weekend[2]	Peak Weekday[1]	Peak Weekend[2]
250,000	43	42	61	84
500,000	84	84	124	167
1,000,000	169	169	250	336
1,500,000	256	254	376	504
2,000,000	342	337	501	672

Notes: 1. Assumes an average duration of 90 minutes and an average vehicle occupancy of 2
2. Assumes an average duration of 150 minutes and an average vehicle occupancy of 3
Source: Fehr & Peers, November 2014

The minimum proposed parking supply would not accommodated expected peak demand with annual visitors at the low end of the range. Parking supplies on the higher end of the proposed range would need to be provided to accommodate peak parking demands on peak weekdays and weekends with annual visitor levels above 1,500,000 and on all days with annual visitor levels approaching 2,000,000. On days when there are special events, parking demand could be higher than presented in Table 22.

Although insufficient parking is not a CEQA issue, it could result in hazardous conditions if parking demand significantly exceeds supply, resulting in congested conditions, circuitous travel, illegal parking that could affect emergency vehicle access, and vehicle queuing that could affect intersection operations. It is recommended that a parking management plan be prepared that identifies parking strategies to reduce and/or manage the parking demand. Potential strategies could include:

- Work with AC transit to provide fixed-route and special event transit service to the site
- Provide shuttles from the MacArthur and/or West Oakland BART stations
- Implement variable parking pricing
- Use changeable message signs to direct visitors to available parking supplies, such as the Wood Street lot
- Investigate using other parking areas within the study area, such as at the Middle Harbor Shoreline Park, and shuttling visitors to the park
- Provide valet parking during special events to maximize capacity of on-site lots
- Implement parking time-limits within the Park to encourage vehicle turnover
- Provide bicycle parking to encourage Park guests to use bicycling as their primary mode of travel to the Park



APPENDIX A: INTERSECTION COUNT DATA SHEETS



ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-001 Maritime Street-Burma Road.ppd
Date : 10/29/2013

Unshifted Count = All Vehicles

	Maritime Street Southbound					Driveway Westbound					Maritime Street Northbound					Burma Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	0	24	2	0	26	0	0	0	0	0	1	71	0	0	72	14	0	2	0	16	114	0
16:15	0	25	5	0	30	0	0	0	0	0	2	103	1	0	106	21	0	3	0	24	160	0
16:30	0	21	1	0	22	0	0	0	0	0	1	115	0	0	116	10	0	1	0	11	149	0
16:45	0	19	0	0	19	0	0	0	0	0	1	125	0	0	126	14	0	1	0	15	160	0
Total	0	89	8	0	97	0	0	0	0	0	5	414	1	0	420	59	0	7	0	66	583	0
17:00	0	19	3	0	22	0	0	0	0	0	0	88	0	0	88	20	0	1	0	21	131	0
17:15	0	24	1	0	25	0	0	0	0	0	0	58	0	0	58	39	0	3	0	42	125	0
17:30	0	46	2	0	48	0	0	0	0	0	0	59	0	0	59	36	0	1	0	37	144	0
17:45	1	44	1	1	47	0	0	1	0	1	1	36	0	0	37	21	0	0	0	21	106	1
Total	1	133	7	1	142	0	0	1	0	1	1	241	0	0	242	116	0	5	0	121	506	1
Grand Total	1	222	15	1	239	0	0	1	0	1	6	655	1	0	662	175	0	12	0	187	1089	1
Apprch %	0.4%	92.9%	6.3%	0.4%		0.0%	0.0%	100.0%	0.0%		0.9%	98.9%	0.2%	0.0%		93.6%	0.0%	6.4%	0.0%			
Total %	0.1%	20.4%	1.4%	0.1%	21.9%	0.0%	0.0%	0.1%	0.0%	0.1%	0.6%	60.1%	0.1%	0.0%	60.8%	16.1%	0.0%	1.1%	0.0%	17.2%	100.0%	

PM PEAK HOUR	Maritime Street Southbound					Driveway Westbound					Maritime Street Northbound					Burma Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	0	25	5	0	30	0	0	0	0	0	2	103	1	0	106	21	0	3	0	24	160
16:30	0	21	1	0	22	0	0	0	0	0	1	115	0	0	116	10	0	1	0	11	149
16:45	0	19	0	0	19	0	0	0	0	0	1	125	0	0	126	14	0	1	0	15	160
17:00	0	19	3	0	22	0	0	0	0	0	0	88	0	0	88	20	0	1	0	21	131
Total Volume	0	84	9	0	93	0	0	0	0	0	4	431	1	0	436	65	0	6	0	71	600
% App Total	0.0%	90.3%	9.7%	0.0%		0.0%	0.0%	0.0%	0.0%		0.9%	98.9%	0.2%	0.0%		91.5%	0.0%	8.5%	0.0%		
PHF	.000	.840	.450	.000	.775	.000	.000	.000	.000	.000	.500	.862	.250	.000	.865	.774	.000	.500	.000	.740	.938

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-002 Maritime Street-West Grand Avenue.ppd
Date : 10/29/2013

Unshifted Count = All Vehicles

	Wake Avenue Southbound					West Grand Avenue Westbound					Maritime Street Northbound					I-80 Ramps Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	13	10	11	0	34	6	111	6	0	123	32	20	30	0	82	3	47	12	1	63	302	1
16:15	24	5	26	0	55	7	103	6	0	116	53	28	40	0	121	1	39	16	0	56	348	0
16:30	21	6	15	0	42	7	115	7	0	129	62	29	39	0	130	1	54	7	2	64	365	2
16:45	12	8	12	0	32	7	111	12	0	130	68	19	44	0	131	0	49	7	1	57	350	1
Total	70	29	64	0	163	27	440	31	0	498	215	96	153	0	464	5	189	42	4	240	1365	4
17:00	17	4	16	0	37	9	150	7	0	166	72	16	29	0	117	3	55	8	3	69	389	3
17:15	18	4	8	0	30	9	131	8	0	148	43	8	42	0	93	1	59	13	2	75	346	2
17:30	6	4	7	0	17	14	144	4	0	162	59	7	33	0	99	1	71	34	2	108	386	2
17:45	8	2	4	0	14	15	106	5	0	126	29	5	29	0	63	1	65	27	2	95	298	2
Total	49	14	35	0	98	47	531	24	0	602	203	36	133	0	372	6	250	82	9	347	1419	9
Grand Total	119	43	99	0	261	74	971	55	0	1100	418	132	286	0	836	11	439	124	13	587	2784	13
Apprch %	45.6%	16.5%	37.9%	0.0%		6.7%	88.3%	5.0%	0.0%		50.0%	15.8%	34.2%	0.0%		1.9%	74.8%	21.1%	2.2%			
Total %	4.3%	1.5%	3.6%	0.0%	9.4%	2.7%	34.9%	2.0%	0.0%	39.5%	15.0%	4.7%	10.3%	0.0%	30.0%	0.4%	15.8%	4.5%	0.5%	21.1%	100.0%	

PM PEAK HOUR	Wake Avenue Southbound					West Grand Avenue Westbound					Maritime Street Northbound					I-80 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	12	8	12	0	32	7	111	12	0	130	68	19	44	0	131	0	49	7	1	57	350
17:00	17	4	16	0	37	9	150	7	0	166	72	16	29	0	117	3	55	8	3	69	389
17:15	18	4	8	0	30	9	131	8	0	148	43	8	42	0	93	1	59	13	2	75	346
17:30	6	4	7	0	17	14	144	4	0	162	59	7	33	0	99	1	71	34	2	108	386
Total Volume	53	20	43	0	116	39	536	31	0	606	242	50	148	0	440	5	234	62	8	309	1471
% App Total	45.7%	17.2%	37.1%	0.0%		6.4%	88.4%	5.1%	0.0%		55.0%	11.4%	33.6%	0.0%		1.6%	75.7%	20.1%	2.6%		
PHF	.736	.625	.672	.000	.784	.696	.893	.646	.000	.913	.840	.658	.841	.000	.840	.417	.824	.456	.667	.715	.945

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-003 Frontage Road-West Grand Avenue.ppd
Date : 10/29/2013

Unshifted Count = All Vehicles

	I-80 Ramps Southbound					West Grand Avenue Westbound					Frontage Road Northbound					West Grand Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	21	17	2	0	40	26	100	54	0	180	16	33	47	0	96	22	47	18	0	87	403	0
16:15	14	17	4	0	35	31	114	50	0	195	12	50	66	0	128	24	65	21	0	110	468	0
16:30	14	11	4	0	29	34	115	38	0	187	15	34	62	0	111	23	67	20	0	110	437	0
16:45	23	13	2	0	38	46	93	36	0	175	20	46	79	0	145	22	67	13	0	102	460	0
Total	72	58	12	0	142	137	422	178	0	737	63	163	254	0	480	91	246	72	0	409	1768	0
17:00	22	14	6	0	42	43	130	41	0	214	21	35	69	0	125	17	65	21	1	104	485	1
17:15	30	12	1	0	43	30	143	49	0	222	18	34	64	0	116	22	75	21	0	118	499	0
17:30	30	21	5	0	56	24	134	41	0	199	18	23	78	0	119	26	76	14	0	116	490	0
17:45	27	16	2	0	45	38	123	37	0	198	12	24	65	0	101	13	68	14	0	95	439	0
Total	109	63	14	0	186	135	530	168	0	833	69	116	276	0	461	78	284	70	1	433	1913	1
Grand Total	181	121	26	0	328	272	952	346	0	1570	132	279	530	0	941	169	530	142	1	842	3681	1
Apprch %	55.2%	36.9%	7.9%	0.0%		17.3%	60.6%	22.0%	0.0%		14.0%	29.6%	56.3%	0.0%		20.1%	62.9%	16.9%	0.1%			
Total %	4.9%	3.3%	0.7%	0.0%	8.9%	7.4%	25.9%	9.4%	0.0%	42.7%	3.6%	7.6%	14.4%	0.0%	25.6%	4.6%	14.4%	3.9%	0.0%	22.9%	100.0%	

PM PEAK HOUR	I-80 Ramps Southbound					West Grand Avenue Westbound					Frontage Road Northbound					West Grand Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	23	13	2	0	38	46	93	36	0	175	20	46	79	0	145	22	67	13	0	102	460
17:00	22	14	6	0	42	43	130	41	0	214	21	35	69	0	125	17	65	21	1	104	485
17:15	30	12	1	0	43	30	143	49	0	222	18	34	64	0	116	22	75	21	0	118	499
17:30	30	21	5	0	56	24	134	41	0	199	18	23	78	0	119	26	76	14	0	116	490
Total Volume	105	60	14	0	179	143	500	167	0	810	77	138	290	0	505	87	283	69	1	440	1934
% App Total	58.7%	33.5%	7.8%	0.0%		17.7%	61.7%	20.6%	0.0%		15.2%	27.3%	57.4%	0.0%		19.8%	64.3%	15.7%	0.2%		
PHF	.875	.714	.583	.000	.799	.777	.874	.852	.000	.912	.917	.750	.918	.000	.871	.837	.931	.821	.250	.932	.969

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-004 Campbell Street-West Grand Avenue.ppd
Date : 10/29/2013

Unshifted Count = All Vehicles

	Campbell Street Southbound					West Grand Avenue Westbound					Campbell Street Northbound					West Grand Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	0	0	28	0	28	4	148	1	1	154	9	1	9	0	19	7	104	11	3	125	326	4
16:15	0	0	32	0	32	5	157	2	0	164	6	0	6	0	12	14	122	10	1	147	355	1
16:30	1	0	38	0	39	2	148	2	1	153	8	0	2	0	10	16	135	5	3	159	361	4
16:45	1	0	38	0	39	1	159	3	1	164	5	0	0	0	5	13	141	10	10	174	382	11
Total	2	0	136	0	138	12	612	8	3	635	28	1	17	0	46	50	502	36	17	605	1424	20
17:00	0	1	47	0	48	6	151	3	0	160	13	0	3	0	16	14	135	6	6	161	385	6
17:15	0	1	48	0	49	3	173	2	1	179	7	0	4	0	11	11	163	13	6	193	432	7
17:30	1	2	38	0	41	5	159	2	1	167	7	0	6	0	13	12	161	11	4	188	409	5
17:45	1	1	31	0	33	4	151	0	0	155	16	1	2	0	19	8	140	18	4	170	377	4
Total	2	5	164	0	171	18	634	7	2	661	43	1	15	0	59	45	599	48	20	712	1603	22
Grand Total	4	5	300	0	309	30	1246	15	5	1296	71	2	32	0	105	95	1101	84	37	1317	3027	42
Apprch %	1.3%	1.6%	97.1%	0.0%		2.3%	96.1%	1.2%	0.4%		67.6%	1.9%	30.5%	0.0%		7.2%	83.6%	6.4%	2.8%			
Total %	0.1%	0.2%	9.9%	0.0%	10.2%	1.0%	41.2%	0.5%	0.2%	42.8%	2.3%	0.1%	1.1%	0.0%	3.5%	3.1%	36.4%	2.8%	1.2%	43.5%	100.0%	

PM PEAK HOUR	Campbell Street Southbound					West Grand Avenue Westbound					Campbell Street Northbound					West Grand Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	1	0	38	0	39	1	159	3	1	164	5	0	0	0	5	13	141	10	10	174	382
17:00	0	1	47	0	48	6	151	3	0	160	13	0	3	0	16	14	135	6	6	161	385
17:15	0	1	48	0	49	3	173	2	1	179	7	0	4	0	11	11	163	13	6	193	432
17:30	1	2	38	0	41	5	159	2	1	167	7	0	6	0	13	12	161	11	4	188	409
Total Volume	2	4	171	0	177	15	642	10	3	670	32	0	13	0	45	50	600	40	26	716	1608
% App Total	1.1%	2.3%	96.6%	0.0%		2.2%	95.8%	1.5%	0.4%		71.1%	0.0%	28.9%	0.0%		7.0%	83.8%	5.6%	3.6%		
PHF	.500	.500	.891	.000	.903	.625	.928	.833	.750	.936	.615	.000	.542	.000	.703	.893	.920	.769	.650	.927	.931

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-005 Mandela Parkway-24th Street.ppd
Date : 10/29/2013

Unshifted Count = All Vehicles

	Mandela Parkway Southbound					24th Street Westbound					Mandela Parkway Northbound					Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	0	73	0	0	73	30	0	5	0	35	0	94	0	1	95	0	0	0	0	0	203	1
16:15	0	106	0	0	106	35	0	1	0	36	0	118	0	0	118	0	0	0	0	0	260	0
16:30	0	112	0	0	112	39	0	3	0	42	0	107	0	1	108	0	0	0	0	0	262	1
16:45	0	110	0	0	110	30	0	6	0	36	0	131	0	1	132	0	0	0	0	0	278	1
Total	0	401	0	0	401	134	0	15	0	149	0	450	0	3	453	0	0	0	0	0	1003	3
17:00	0	129	0	0	129	36	0	3	0	39	0	139	0	0	139	0	0	0	0	0	307	0
17:15	0	123	0	0	123	43	0	1	0	44	0	151	0	0	151	0	0	0	0	0	318	0
17:30	0	118	0	0	118	34	0	1	0	35	0	153	0	2	155	0	0	0	0	0	308	2
17:45	0	110	0	0	110	33	0	4	0	37	0	153	0	2	155	0	0	0	0	0	302	2
Total	0	480	0	0	480	146	0	9	0	155	0	596	0	4	600	0	0	0	0	0	1235	4
Grand Total	0	881	0	0	881	280	0	24	0	304	0	1046	0	7	1053	0	0	0	0	0	2238	7
Apprch %	0.0%	100.0%	0.0%	0.0%		92.1%	0.0%	7.9%	0.0%		0.0%	99.3%	0.0%	0.7%		0.0%	0.0%	0.0%	0.0%			
Total %	0.0%	39.4%	0.0%	0.0%	39.4%	12.5%	0.0%	1.1%	0.0%	13.6%	0.0%	46.7%	0.0%	0.3%	47.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

PM PEAK HOUR	Mandela Parkway Southbound					24th Street Westbound					Mandela Parkway Northbound					Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	129	0	0	129	36	0	3	0	39	0	139	0	0	139	0	0	0	0	0	307
17:15	0	123	0	0	123	43	0	1	0	44	0	151	0	0	151	0	0	0	0	0	318
17:30	0	118	0	0	118	34	0	1	0	35	0	153	0	2	155	0	0	0	0	0	308
17:45	0	110	0	0	110	33	0	4	0	37	0	153	0	2	155	0	0	0	0	0	302
Total Volume	0	480	0	0	480	146	0	9	0	155	0	596	0	4	600	0	0	0	0	0	1235
% App Total	0.0%	100.0%	0.0%	0.0%		94.2%	0.0%	5.8%	0.0%		0.0%	99.3%	0.0%	0.7%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.930	.000	.000	.930	.849	.000	.563	.000	.881	.000	.974	.000	.500	.968	.000	.000	.000	.000	.000	.971

All Traffic Data

(916) 771-8700
orders@atdtraffic.com

City of Oakland
All Vehicles on Unshifted Tab
Bicycles on Bank 1 Tab
Heavy Trucks on Bank 2 Tab

File Name : 13-7630-006 Mandela Parkway-West Grand Avenue
Site Code : 00000000
Start Date : 10/29/2013
Page No : 1

Groups Printed- Unshifted

	Mandela Parkway Southbound						West Grand Avenue Westbound						Mandela Parkway Northbound						Peralta Street Northeastbound						West Grand Avenue Eastbound					
Start Time	Left	Thru	Bear Right	Right	Uturns	App. Total	Left	Bear Left	Thru	Right	Uturns	App. Total	Hard Left	Left	Thru	Right	Uturns	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Int. Total
16:00	23	46	6	29	0	104	13	8	113	20	0	154	0	12	61	26	0	99	0	0	0	0	0	43	50	17	7	117	474
16:15	16	68	7	48	1	140	9	11	101	28	1	150	0	17	68	16	1	102	0	0	0	0	0	55	64	5	2	126	518
16:30	29	75	17	31	1	153	7	5	112	25	0	149	0	21	79	31	0	131	0	0	0	0	0	51	70	19	4	144	577
16:45	18	76	10	38	2	144	7	9	111	28	0	155	0	15	75	28	0	118	0	0	0	0	0	52	76	13	0	141	558
Total	86	265	40	146	4	541	36	33	437	101	1	608	0	65	283	101	1	450	0	0	0	0	0	201	260	54	13	528	2127
17:00	29	80	10	43	0	162	5	13	93	29	0	140	0	26	92	32	0	150	0	0	0	0	0	56	68	14	3	141	593
17:15	24	84	11	42	3	164	12	11	121	23	0	167	0	24	102	22	0	148	0	0	0	0	0	62	90	11	1	164	643
17:30	30	76	13	34	1	154	13	10	109	22	0	154	0	19	116	31	0	166	0	0	0	0	0	62	89	19	3	173	647
17:45	22	86	10	21	2	141	14	16	117	28	1	176	0	18	97	26	0	141	0	0	0	0	0	64	59	14	4	141	599
Total	105	326	44	140	6	621	44	50	440	102	1	637	0	87	407	111	0	605	0	0	0	0	0	244	306	58	11	619	2482
Grand Total	191	591	84	286	10	1162	80	83	877	203	2	1245	0	152	690	212	1	1055	0	0	0	0	0	445	566	112	24	1147	4609
Apprch %	16.4	50.9	7.2	24.6	0.9		6.4	6.7	70.4	16.3	0.2		0	14.4	65.4	20.1	0.1		0	0	0	0		38.8	49.3	9.8	2.1		
Total %	4.1	12.8	1.8	6.2	0.2	25.2	1.7	1.8	19	4.4	0	27	0	3.3	15	4.6	0	22.9	0	0	0	0	0	9.7	12.3	2.4	0.5	24.9	

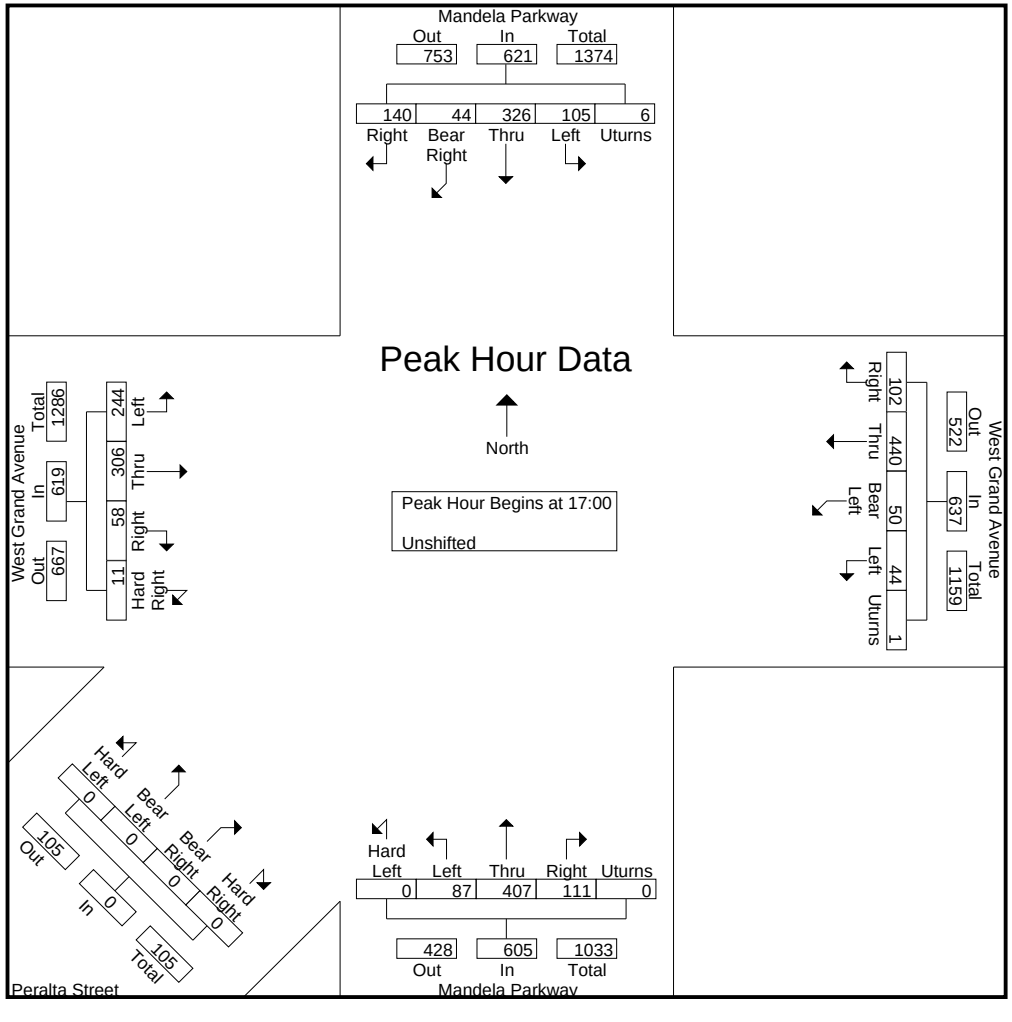
	Mandela Parkway Southbound						West Grand Avenue Westbound						Mandela Parkway Northbound						Peralta Street Northeastbound						West Grand Avenue Eastbound					
Start Time	Left	Thru	Bear Right	Right	Uturns	App. Total	Left	Bear Left	Thru	Right	Uturns	App. Total	Hard Left	Left	Thru	Right	Uturns	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																														
Peak Hour for Entire Intersection Begins at 17:00																														
17:00	**29**	**80**	**10**	**43**	0	162	5	13	93	**29**	0	140	0	**26**	92	**32**	0	150	0	0	0	0	0	56	68	14	3	141	593
17:15	24	84	11	42	**3**	**164**	12	11	**121**	23	0	167	0	24	102	22	0	148	0	0	0	0	0	62	**90**	11	1	164	643
17:30	**30**	76	**13**	34	1	154	13	10	109	22	0	154	0	19	**116**	31	0	**166**	0	0	0	0	0	62	89	**19**	3	**173**	**647**
17:45	22	**86**	10	21	2	141	**14**	**16**	117	28	**1**	**176**	0	18	97	26	0	141	0	0	0	0	0	**64**	59	14	**4**	141	599
Total Volume	105	326	44	140	6	621	44	50	440	102	1	637	0	87	407	111	0	605	0	0	0	0	0	244	306	58	11	619	2482
% App. Total	16.9	52.5	7.1	22.5	1		6.9	7.8	69.1	16	0.2		0	14.4	67.3	18.3	0		0	0	0	0		39.4	49.4	9.4	1.8		
PHF	.875	.948	.846	.814	.500	.947	.786	.781	.909	.879	.250	.905	.000	.837	.877	.867	.000	.911	.000	.000	.000	.000	.000	.953	.850	.763	.688	.895	.959

All Traffic Data

(916) 771-8700
orders@atdtraffic.com

City of Oakland
All Vehicles on Unshifted Tab
Bicycles on Bank 1 Tab
Heavy Trucks on Bank 2 Tab

File Name : 13-7630-006 Mandela Parkway-West Grand Avenue
Site Code : 00000000
Start Date : 10/29/2013
Page No : 2



All Traffic Data

(916) 771-8700
orders@atdtraffic.com

City of Oakland
All Vehicles on Unshifted Tab
Bicycles on Bank 1 Tab
Heavy Trucks on Bank 2 Tab

File Name : 13-7630-006 Mandela Parkway-West Grand Avenue
Site Code : 00000000
Start Date : 10/29/2013

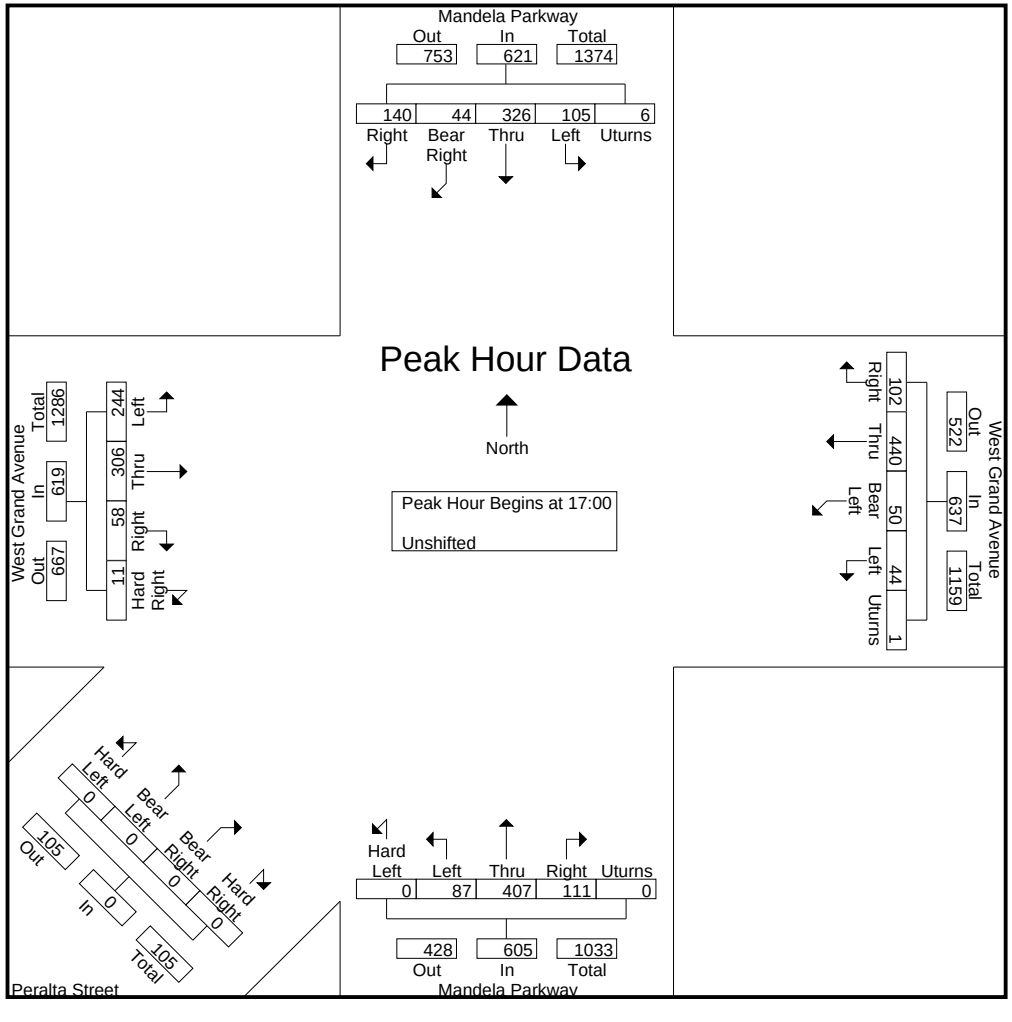
	Mandela Parkway Southbound						West Grand Avenue Westbound						Mandela Parkway Northbound						Peralta Street Northeastbound					West Grand Avenue Eastbound					
Start Time	Left	Thru	Bear Right	Right	Uturns	App. Total	Left	Bear Left	Thru	Right	Uturns	App. Total	Hard Left	Left	Thru	Right	Uturns	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																													
Peak Hour for Entire Intersection Begins at 17:00																													
17:00	**29**	**80**	**10**	43	0	162	5	13	93	29	0	140	0	26	92	32	0	150	0	0	0	0	0	56	68	14	3	141	593
17:15	24	84	11	42	**3**	**164**	12	11	**121**	23	0	167	0	24	102	22	0	148	0	0	0	0	0	62	**90**	11	1	164	643
17:30	**30**	76	**13**	34	1	154	13	10	109	22	0	154	0	19	**116**	31	0	**166**	0	0	0	0	0	62	89	**19**	3	**173**	**647**
17:45	22	**86**	10	21	2	141	**14**	**16**	117	28	**1**	**176**	0	18	97	26	0	141	0	0	0	0	0	**64**	59	14	**4**	141	599
Total Volume	105	326	44	140	6	621	44	50	440	102	1	637	0	87	407	111	0	605	0	0	0	0	0	244	306	58	11	619	2482
% App. Total	16.9	52.5	7.1	22.5	1		6.9	7.8	69.1	16	0.2		0	14.4	67.3	18.3	0		0	0	0	0		39.4	49.4	9.4	1.8		
PHF	.875	.948	.846	.814	.500	.947	.786	.781	.909	.879	.250	.905	.000	.837	.877	.867	.000	.911	.000	.000	.000	.000	.000	.953	.850	.763	.688	.895	.959

All Traffic Data

(916) 771-8700
orders@atdtraffic.com

City of Oakland
All Vehicles on Unshifted Tab
Bicycles on Bank 1 Tab
Heavy Trucks on Bank 2 Tab

File Name : 13-7630-006 Mandela Parkway-West Grand Avenue
Site Code : 00000000
Start Date : 10/29/2013
Page No : 4



ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-007 Mandela Parkway-20th Street.ppd
Date : 10/29/2013

Unshifted Count = All Vehicles

	Mandela Parkway Southbound					20th Street Westbound					Mandela Parkway Northbound					20th Street Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	2	72	1	0	75	1	0	1	0	2	0	79	0	1	80	20	0	4	0	24	181	1
16:15	3	80	1	0	84	0	0	2	0	2	1	86	0	0	87	11	0	0	0	11	184	0
16:30	0	98	0	2	100	1	0	3	0	4	1	112	0	0	113	15	0	3	0	18	235	2
16:45	0	95	0	2	97	0	0	1	0	1	0	99	2	0	101	12	0	0	0	12	211	2
Total	5	345	2	4	356	2	0	7	0	9	2	376	2	1	381	58	0	7	0	65	811	5
17:00	1	96	0	0	97	2	1	1	0	4	1	139	1	1	142	16	0	4	0	20	263	1
17:15	0	107	2	0	109	0	0	2	0	2	1	124	0	0	125	16	0	0	0	16	252	0
17:30	1	107	0	0	108	1	0	0	0	1	1	151	1	0	153	18	0	1	0	19	281	0
17:45	2	108	0	2	112	1	0	1	0	2	0	122	0	1	123	15	0	2	0	17	254	3
Total	4	418	2	2	426	4	1	4	0	9	3	536	2	2	543	65	0	7	0	72	1050	4
Grand Total	9	763	4	6	782	6	1	11	0	18	5	912	4	3	924	123	0	14	0	137	1861	9
Apprch %	1.2%	97.6%	0.5%	0.8%		33.3%	5.6%	61.1%	0.0%		0.5%	98.7%	0.4%	0.3%		89.8%	0.0%	10.2%	0.0%			
Total %	0.5%	41.0%	0.2%	0.3%	42.0%	0.3%	0.1%	0.6%	0.0%	1.0%	0.3%	49.0%	0.2%	0.2%	49.7%	6.6%	0.0%	0.8%	0.0%	7.4%	100.0%	

PM PEAK HOUR	Mandela Parkway Southbound					20th Street Westbound					Mandela Parkway Northbound					20th Street Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	1	96	0	0	97	2	1	1	0	4	1	139	1	1	142	16	0	4	0	20	263
17:15	0	107	2	0	109	0	0	2	0	2	1	124	0	0	125	16	0	0	0	16	252
17:30	1	107	0	0	108	1	0	0	0	1	1	151	1	0	153	18	0	1	0	19	281
17:45	2	108	0	2	112	1	0	1	0	2	0	122	0	1	123	15	0	2	0	17	254
Total Volume	4	418	2	2	426	4	1	4	0	9	3	536	2	2	543	65	0	7	0	72	1050
% App Total	0.9%	98.1%	0.5%	0.5%		44.4%	11.1%	44.4%	0.0%		0.6%	98.7%	0.4%	0.4%		90.3%	0.0%	9.7%	0.0%		
PHF	.500	.968	.250	.250	.951	.500	.250	.500	.000	.563	.750	.887	.500	.500	.887	.903	.000	.438	.000	.900	.934

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-008 I-880 NB Off-Ramp-7th Street.ppd
Date : 10/29/2013

Unshifted Count = All Vehicles

	Frontage Road Southbound					7th Street Westbound					I-880 NB Off-Ramp Northbound					7th Street Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	17	0	36	0	53	0	28	26	0	54	31	44	20	0	95	25	9	0	0	34	236	0
16:15	19	0	47	0	66	0	15	43	0	58	22	63	26	0	111	36	16	0	0	52	287	0
16:30	19	0	36	0	55	0	27	17	0	44	20	60	20	0	100	32	21	0	0	53	252	0
16:45	23	0	47	0	70	0	25	21	0	46	21	97	17	0	135	33	28	0	0	61	312	0
Total	78	0	166	0	244	0	95	107	0	202	94	264	83	0	441	126	74	0	0	200	1087	0
17:00	18	0	51	0	69	0	29	36	0	65	16	58	20	0	94	24	21	0	0	45	273	0
17:15	28	0	40	0	68	0	24	24	0	48	17	75	22	0	114	14	11	0	0	25	255	0
17:30	27	0	26	0	53	0	20	25	0	45	19	82	19	0	120	9	15	0	0	24	242	0
17:45	21	0	37	0	58	0	37	21	0	58	11	64	33	0	108	14	16	0	0	30	254	0
Total	94	0	154	0	248	0	110	106	0	216	63	279	94	0	436	61	63	0	0	124	1024	0
Grand Total	172	0	320	0	492	0	205	213	0	418	157	543	177	0	877	187	137	0	0	324	2111	0
Apprch %	35.0%	0.0%	65.0%	0.0%		0.0%	49.0%	51.0%	0.0%		17.9%	61.9%	20.2%	0.0%		57.7%	42.3%	0.0%	0.0%			
Total %	8.1%	0.0%	15.2%	0.0%	23.3%	0.0%	9.7%	10.1%	0.0%	19.8%	7.4%	25.7%	8.4%	0.0%	41.5%	8.9%	6.5%	0.0%	0.0%	15.3%	100.0%	

PM PEAK HOUR	Frontage Road Southbound					7th Street Westbound					I-880 NB Off-Ramp Northbound					7th Street Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	19	0	47	0	66	0	15	43	0	58	22	63	26	0	111	36	16	0	0	52	287
16:30	19	0	36	0	55	0	27	17	0	44	20	60	20	0	100	32	21	0	0	53	252
16:45	23	0	47	0	70	0	25	21	0	46	21	97	17	0	135	33	28	0	0	61	312
17:00	18	0	51	0	69	0	29	36	0	65	16	58	20	0	94	24	21	0	0	45	273
Total Volume	79	0	181	0	260	0	96	117	0	213	79	278	83	0	440	125	86	0	0	211	1124
% App Total	30.4%	0.0%	69.6%	0.0%		0.0%	45.1%	54.9%	0.0%		18.0%	63.2%	18.9%	0.0%		59.2%	40.8%	0.0%	0.0%		
PHF	.859	.000	.887	.000	.929	.000	.828	.680	.000	.819	.898	.716	.798	.000	.815	.868	.768	.000	.000	.865	.901

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-009 Maritime Street-7th Street.ppd
Date : 10/29/2013

Unshifted Count = All Vehicles

	Maritime Street Southbound					7th Street Westbound					Maritime Street Northbound					7th Street Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	41	37	0	0	78	9	21	9	0	39	3	46	30	0	79	31	26	11	0	68	264	0
16:15	35	26	0	0	61	6	21	11	1	39	1	37	33	0	71	44	47	15	0	106	277	1
16:30	58	34	0	0	92	5	6	17	0	28	1	62	45	0	108	27	48	4	0	79	307	0
16:45	39	15	0	0	54	4	5	21	0	30	0	56	30	0	86	48	53	2	0	103	273	0
Total	173	112	0	0	285	24	53	58	1	136	5	201	138	0	344	150	174	32	0	356	1121	1
17:00	38	13	1	0	52	7	2	18	0	27	1	34	29	0	64	15	20	0	0	35	178	0
17:15	33	8	0	0	41	5	12	11	0	28	0	19	22	0	41	7	10	0	0	17	127	0
17:30	28	9	1	0	38	6	9	15	1	31	0	14	15	0	29	5	9	2	0	16	114	1
17:45	34	6	0	0	40	6	19	16	0	41	0	11	23	0	34	6	8	0	0	14	129	0
Total	133	36	2	0	171	24	42	60	1	127	1	78	89	0	168	33	47	2	0	82	548	1
Grand Total	306	148	2	0	456	48	95	118	2	263	6	279	227	0	512	183	221	34	0	438	1669	2
Apprch %	67.1%	32.5%	0.4%	0.0%		18.3%	36.1%	44.9%	0.8%		1.2%	54.5%	44.3%	0.0%		41.8%	50.5%	7.8%	0.0%			
Total %	18.3%	8.9%	0.1%	0.0%	27.3%	2.9%	5.7%	7.1%	0.1%	15.8%	0.4%	16.7%	13.6%	0.0%	30.7%	11.0%	13.2%	2.0%	0.0%	26.2%	100.0%	

PM PEAK HOUR	Maritime Street Southbound					7th Street Westbound					Maritime Street Northbound					7th Street Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	41	37	0	0	78	9	21	9	0	39	3	46	30	0	79	31	26	11	0	68	264
16:15	35	26	0	0	61	6	21	11	1	39	1	37	33	0	71	44	47	15	0	106	277
16:30	58	34	0	0	92	5	6	17	0	28	1	62	45	0	108	27	48	4	0	79	307
16:45	39	15	0	0	54	4	5	21	0	30	0	56	30	0	86	48	53	2	0	103	273
Total Volume	173	112	0	0	285	24	53	58	1	136	5	201	138	0	344	150	174	32	0	356	1121
% App Total	60.7%	39.3%	0.0%	0.0%		17.6%	39.0%	42.6%	0.7%		1.5%	58.4%	40.1%	0.0%		42.1%	48.9%	9.0%	0.0%		
PHF	.746	.757	.000	.000	.774	.667	.631	.690	.250	.872	.417	.810	.767	.000	.796	.781	.821	.533	.000	.840	.913

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-010 Adeline Street-West Grand Avenue.ppd
Date : 10/29/2013

Unshifted Count = All Vehicles

	Adeline Street Southbound					West Grand Avenue Westbound					Adeline Street Northbound					West Grand Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
16:00	14	48	19	0	81	17	124	14	2	157	3	35	28	0	66	9	96	6	0	111	415	2
16:15	14	31	9	0	54	12	123	8	1	144	5	36	20	0	61	8	92	5	0	105	364	1
16:30	21	56	17	0	94	13	113	11	0	137	6	53	19	0	78	11	122	6	2	141	450	2
16:45	15	42	21	0	78	16	125	12	2	155	8	41	15	0	64	11	103	10	0	124	421	2
Total	64	177	66	0	307	58	485	45	5	593	22	165	82	0	269	39	413	27	2	481	1650	7
17:00	20	45	13	0	78	13	133	11	2	159	3	51	11	0	65	13	116	8	0	137	439	2
17:15	11	50	13	0	74	13	163	9	1	186	8	62	12	0	82	7	119	12	0	138	480	1
17:30	16	44	17	0	77	11	133	18	1	163	10	42	16	0	68	13	145	13	0	171	479	1
17:45	14	35	14	0	63	13	147	14	1	175	6	39	7	0	52	18	102	7	0	127	417	1
Total	61	174	57	0	292	50	576	52	5	683	27	194	46	0	267	51	482	40	0	573	1815	5
Grand Total	125	351	123	0	599	108	1061	97	10	1276	49	359	128	0	536	90	895	67	2	1054	3465	12
Apprch %	20.9%	58.6%	20.5%	0.0%		8.5%	83.2%	7.6%	0.8%		9.1%	67.0%	23.9%	0.0%		8.5%	84.9%	6.4%	0.2%			
Total %	3.6%	10.1%	3.5%	0.0%	17.3%	3.1%	30.6%	2.8%	0.3%	36.8%	1.4%	10.4%	3.7%	0.0%	15.5%	2.6%	25.8%	1.9%	0.1%	30.4%	100.0%	

PM PEAK HOUR	Adeline Street Southbound					West Grand Avenue Westbound					Adeline Street Northbound					West Grand Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	15	42	21	0	78	16	125	12	2	155	8	41	15	0	64	11	103	10	0	124	421
17:00	20	45	13	0	78	13	133	11	2	159	3	51	11	0	65	13	116	8	0	137	439
17:15	11	50	13	0	74	13	163	9	1	186	8	62	12	0	82	7	119	12	0	138	480
17:30	16	44	17	0	77	11	133	18	1	163	10	42	16	0	68	13	145	13	0	171	479
Total Volume	62	181	64	0	307	53	554	50	6	663	29	196	54	0	279	44	483	43	0	570	1819
% App Total	20.2%	59.0%	20.8%	0.0%		8.0%	83.6%	7.5%	0.9%		10.4%	70.3%	19.4%	0.0%		7.7%	84.7%	7.5%	0.0%		
PHF	.775	.905	.762	.000	.984	.828	.850	.694	.750	.891	.725	.790	.844	.000	.851	.846	.833	.827	.000	.833	.947

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-001 Maritime Street-Burma Road.ppd
Date : 10/26/2013

Unshifted Count = All Vehicles

	Maritime Street Southbound					Driveway Westbound					Maritime Street Northbound					Burma Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	0	14	6	0	20	0	0	0	0	0	7	18	0	0	25	5	0	2	0	7	52	0
14:15	2	9	9	2	22	0	0	1	0	1	3	15	1	0	19	17	0	4	0	21	63	2
14:30	0	11	12	0	23	0	0	2	0	2	1	9	0	0	10	11	0	1	0	12	47	0
14:45	2	10	8	3	23	0	0	2	0	2	7	16	1	0	24	19	0	5	0	24	73	3
Total	4	44	35	5	88	0	0	5	0	5	18	58	2	0	78	52	0	12	0	64	235	5
15:00	0	7	8	0	15	0	0	1	0	1	2	9	0	0	11	26	0	4	0	30	57	0
15:15	0	3	7	1	11	0	0	0	0	0	0	5	0	1	6	42	0	2	0	44	61	2
15:30	0	6	13	0	19	0	0	0	0	0	9	6	0	0	15	15	0	3	0	18	52	0
15:45	0	13	14	0	27	0	0	0	0	0	1	18	0	0	19	18	0	2	0	20	66	0
Total	0	29	42	1	72	0	0	1	0	1	12	38	0	1	51	101	0	11	0	112	236	2
16:00	0	9	6	1	16	0	0	3	0	3	2	15	0	0	17	15	0	1	0	16	52	1
16:15	0	11	11	0	22	0	0	1	0	1	3	13	0	0	16	14	1	5	0	20	59	0
16:30	0	10	6	1	17	0	0	0	0	0	0	13	1	0	14	17	0	2	0	19	50	1
16:45	0	3	8	0	11	0	0	0	0	0	2	34	0	0	36	15	0	1	0	16	63	0
Total	0	33	31	2	66	0	0	4	0	4	7	75	1	0	83	61	1	9	0	71	224	2
17:00	0	9	7	0	16	0	0	0	0	0	1	36	0	0	37	19	0	5	0	24	77	0
17:15	0	16	3	0	19	0	0	0	0	0	2	24	0	0	26	24	0	3	0	27	72	0
17:30	0	26	6	0	32	0	0	0	0	0	1	14	0	0	15	8	0	3	0	11	58	0
17:45	0	15	2	0	17	0	0	0	0	0	1	11	0	0	12	15	0	2	0	17	46	0
Total	0	66	18	0	84	0	0	0	0	0	5	85	0	0	90	66	0	13	0	79	253	0
Grand Total	4	172	126	8	310	0	0	10	0	10	42	256	3	1	302	280	1	45	0	326	948	9
Apprch %	1.3%	55.5%	40.6%	2.6%		0.0%	0.0%	100.0%	0.0%		13.9%	84.8%	1.0%	0.3%		85.9%	0.3%	13.8%	0.0%			
Total %	0.4%	18.1%	13.3%	0.8%	32.7%	0.0%	0.0%	1.1%	0.0%	1.1%	4.4%	27.0%	0.3%	0.1%	31.9%	29.5%	0.1%	4.7%	0.0%	34.4%	100.0%	

PM PEAK HOUR	Maritime Street Southbound					Driveway Westbound					Maritime Street Northbound					Burma Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	3	8	0	11	0	0	0	0	0	2	34	0	0	36	15	0	1	0	16	63
17:00	0	9	7	0	16	0	0	0	0	0	1	36	0	0	37	19	0	5	0	24	77
17:15	0	16	3	0	19	0	0	0	0	0	2	24	0	0	26	24	0	3	0	27	72
17:30	0	26	6	0	32	0	0	0	0	0	1	14	0	0	15	8	0	3	0	11	58
Total Volume	0	54	24	0	78	0	0	0	0	0	6	108	0	0	114	66	0	12	0	78	270
% App Total	0.0%	69.2%	30.8%	0.0%		0.0%	0.0%	0.0%	0.0%		5.3%	94.7%	0.0%	0.0%		84.6%	0.0%	15.4%	0.0%		
PHF	.000	.519	.750	.000	.609	.000	.000	.000	.000	.000	.750	.750	.000	.000	.770	.688	.000	.600	.000	.722	.877

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-002 Maritime Street-West Grand Avenue.ppd
Date : 10/26/2013

Unshifted Count = All Vehicles

	Wake Avenue Southbound					West Grand Avenue Westbound					Maritime Street Northbound					I-80 Ramps Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	9	6	4	0	19	9	109	11	0	129	11	1	12	0	24	4	40	7	1	52	224	1
14:15	5	1	1	0	7	15	104	7	0	126	16	3	16	0	35	1	51	3	3	58	226	3
14:30	7	3	5	0	15	8	136	8	1	153	6	4	11	0	21	5	43	13	3	64	253	4
14:45	12	6	3	0	21	10	118	5	0	133	15	5	18	0	38	3	29	7	2	41	233	2
Total	33	16	13	0	62	42	467	31	1	541	48	13	57	0	118	13	163	30	9	215	936	10
15:00	6	1	2	0	9	7	117	3	0	127	18	3	16	0	37	1	42	9	2	54	227	2
15:15	9	1	7	0	17	3	112	4	0	119	16	0	33	0	49	3	51	5	6	65	250	6
15:30	8	2	4	0	14	16	117	10	0	143	8	2	11	0	21	5	37	5	1	48	226	1
15:45	5	3	6	0	14	11	97	3	0	111	14	5	18	0	37	3	42	13	1	59	221	1
Total	28	7	19	0	54	37	443	20	0	500	56	10	78	0	144	12	172	32	10	226	924	10
16:00	8	4	6	0	18	2	95	3	0	100	13	4	17	0	34	2	44	8	1	55	207	1
16:15	1	4	2	0	7	7	104	3	0	114	13	2	13	0	28	2	45	12	1	60	209	1
16:30	4	1	5	0	10	3	85	2	0	90	12	6	12	0	30	2	31	11	1	45	175	1
16:45	2	0	0	0	2	9	106	2	0	117	24	3	21	0	48	0	38	3	4	45	212	4
Total	15	9	13	0	37	21	390	10	0	421	62	15	63	0	140	6	158	34	7	205	803	7
17:00	9	1	0	0	10	5	121	5	1	132	28	3	24	0	55	2	50	10	2	64	261	3
17:15	2	0	4	0	6	9	113	4	0	126	16	5	27	0	48	1	45	11	2	59	239	2
17:30	5	3	7	0	15	12	102	3	0	117	10	1	12	0	23	2	44	17	2	65	220	2
17:45	5	4	3	0	12	6	114	1	0	121	9	2	15	0	26	4	37	6	2	49	208	2
Total	21	8	14	0	43	32	450	13	1	496	63	11	78	0	152	9	176	44	8	237	928	9
Grand Total	97	40	59	0	196	132	1750	74	2	1958	229	49	276	0	554	40	669	140	34	883	3591	36
Apprch %	49.5%	20.4%	30.1%	0.0%		6.7%	89.4%	3.8%	0.1%		41.3%	8.8%	49.8%	0.0%		4.5%	75.8%	15.9%	3.9%			
Total %	2.7%	1.1%	1.6%	0.0%	5.5%	3.7%	48.7%	2.1%	0.1%	54.5%	6.4%	1.4%	7.7%	0.0%	15.4%	1.1%	18.6%	3.9%	0.9%	24.6%	100.0%	

PM PEAK HOUR	Wake Avenue Southbound					West Grand Avenue Westbound					Maritime Street Northbound					I-80 Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:30 to 15:30																					
Peak Hour For Entire Intersection Begins at 14:30																					
14:30	7	3	5	0	15	8	136	8	1	153	6	4	11	0	21	5	43	13	3	64	253
14:45	12	6	3	0	21	10	118	5	0	133	15	5	18	0	38	3	29	7	2	41	233
15:00	6	1	2	0	9	7	117	3	0	127	18	3	16	0	37	1	42	9	2	54	227
15:15	9	1	7	0	17	3	112	4	0	119	16	0	33	0	49	3	51	5	6	65	250
Total Volume	34	11	17	0	62	28	483	20	1	532	55	12	78	0	145	12	165	34	13	224	963
% App Total	54.8%	17.7%	27.4%	0.0%		5.3%	90.8%	3.8%	0.2%		37.9%	8.3%	53.8%	0.0%		5.4%	73.7%	15.2%	5.8%		
PHF	.708	.458	.607	.000	.738	.700	.888	.625	.250	.869	.764	.600	.591	.000	.740	.600	.809	.654	.542	.862	.952

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-003 Frontage Road-West Grand Avenue.ppd
Date : 10/26/2013

Unshifted Count = All Vehicles

	I-80 Ramps Southbound					West Grand Avenue Westbound					Frontage Road Northbound					West Grand Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	24	20	8	0	52	29	108	52	1	190	12	13	35	0	60	15	33	12	0	60	362	1
14:15	23	19	7	0	49	30	99	44	0	173	17	12	37	0	66	6	47	17	2	72	360	2
14:30	21	15	4	0	40	22	123	52	0	197	33	35	30	0	98	8	38	9	0	55	390	0
14:45	25	15	3	0	43	28	115	41	0	184	15	25	25	0	65	9	38	16	0	63	355	0
Total	93	69	22	0	184	109	445	189	1	744	77	85	127	0	289	38	156	54	2	250	1467	3
15:00	9	9	1	0	19	37	111	40	0	188	13	26	32	0	71	7	46	11	0	64	342	0
15:15	25	17	5	0	47	41	99	37	0	177	15	15	24	0	54	18	46	27	0	91	369	0
15:30	24	13	7	0	44	36	99	42	0	177	27	40	39	0	106	10	33	15	0	58	385	0
15:45	25	13	1	0	39	27	93	32	0	152	17	18	28	0	63	7	43	12	0	62	316	0
Total	83	52	14	0	149	141	402	151	0	694	72	99	123	0	294	42	168	65	0	275	1412	0
16:00	26	8	1	0	35	34	88	44	0	166	12	13	28	0	53	11	40	12	0	63	317	0
16:15	17	12	7	0	36	21	84	24	0	129	21	17	31	0	69	7	44	8	0	59	293	0
16:30	20	11	0	0	31	26	78	49	0	153	17	23	26	0	66	8	32	12	0	52	302	0
16:45	14	12	4	0	30	28	86	39	0	153	19	22	19	0	60	16	34	7	0	57	300	0
Total	77	43	12	0	132	109	336	156	0	601	69	75	104	0	248	42	150	39	0	231	1212	0
17:00	20	14	3	0	37	27	111	35	0	173	20	17	26	0	63	20	48	15	0	83	356	0
17:15	18	10	3	0	31	20	102	36	0	158	16	15	24	0	55	19	45	12	0	76	320	0
17:30	15	9	3	0	27	24	100	42	0	166	15	17	16	0	48	8	34	17	0	59	300	0
17:45	17	15	4	0	36	24	101	35	1	161	15	21	29	0	65	9	35	13	0	57	319	1
Total	70	48	13	0	131	95	414	148	1	658	66	70	95	0	231	56	162	57	0	275	1295	1
Grand Total	323	212	61	0	596	454	1597	644	2	2697	284	329	449	0	1062	178	636	215	2	1031	5386	4
Apprch %	54.2%	35.6%	10.2%	0.0%		16.8%	59.2%	23.9%	0.1%		26.7%	31.0%	42.3%	0.0%		17.3%	61.7%	20.9%	0.2%			
Total %	6.0%	3.9%	1.1%	0.0%	11.1%	8.4%	29.7%	12.0%	0.0%	50.1%	5.3%	6.1%	8.3%	0.0%	19.7%	3.3%	11.8%	4.0%	0.0%	19.1%	100.0%	

PM PEAK HOUR	I-80 Ramps Southbound					West Grand Avenue Westbound					Frontage Road Northbound					West Grand Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:00 to 15:00																					
Peak Hour For Entire Intersection Begins at 14:00																					
14:00	24	20	8	0	52	29	108	52	1	190	12	13	35	0	60	15	33	12	0	60	362
14:15	23	19	7	0	49	30	99	44	0	173	17	12	37	0	66	6	47	17	2	72	360
14:30	21	15	4	0	40	22	123	52	0	197	33	35	30	0	98	8	38	9	0	55	390
14:45	25	15	3	0	43	28	115	41	0	184	15	25	25	0	65	9	38	16	0	63	355
Total Volume	93	69	22	0	184	109	445	189	1	744	77	85	127	0	289	38	156	54	2	250	1467
% App Total	50.5%	37.5%	12.0%	0.0%		14.7%	59.8%	25.4%	0.1%		26.6%	29.4%	43.9%	0.0%		15.2%	62.4%	21.6%	0.8%		
PHF	.930	.863	.688	.000	.885	.908	.904	.909	.250	.944	.583	.607	.858	.000	.737	.633	.830	.794	.250	.868	.940

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-004 Campbell Street-West Grand Avenue.ppd
Date : 10/26/2013

Unshifted Count = All Vehicles

	Campbell Street Southbound					West Grand Avenue Westbound					Campbell Street Northbound					West Grand Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	0	4	25	0	29	6	159	2	1	168	11	2	8	0	21	4	88	7	2	101	319	3
14:15	1	3	21	0	25	2	142	0	1	145	7	0	6	0	13	2	104	13	2	121	304	3
14:30	1	1	23	0	25	2	159	0	1	162	11	2	7	0	20	3	83	7	3	96	303	4
14:45	1	2	21	0	24	5	164	3	0	172	14	0	2	0	16	3	86	6	4	99	311	4
Total	3	10	90	0	103	15	624	5	3	647	43	4	23	0	70	12	361	33	11	417	1237	14
15:00	0	2	30	0	32	1	147	1	1	150	5	0	5	0	10	2	83	9	3	97	289	4
15:15	0	2	24	0	26	2	139	0	2	143	14	1	7	0	22	4	92	7	5	108	299	7
15:30	0	0	27	0	27	5	133	0	0	138	18	0	5	0	23	5	87	9	0	101	289	0
15:45	0	3	27	0	30	4	117	1	0	122	5	0	3	0	8	2	91	7	1	101	261	1
Total	0	7	108	0	115	12	536	2	3	553	42	1	20	0	63	13	353	32	9	407	1138	12
16:00	0	2	23	0	25	3	131	1	0	135	14	1	3	0	18	4	90	7	5	106	284	5
16:15	0	2	19	0	21	3	108	1	1	113	3	0	7	0	10	2	89	6	2	99	243	3
16:30	1	2	20	0	23	1	126	0	0	127	9	0	6	0	15	5	62	10	6	83	248	6
16:45	0	1	16	0	17	7	127	2	0	136	19	1	6	0	26	2	64	6	3	75	254	3
Total	1	7	78	0	86	14	492	4	1	511	45	2	22	0	69	13	305	29	16	363	1029	17
17:00	1	0	23	0	24	2	136	1	0	139	2	0	3	0	5	2	95	3	1	101	269	1
17:15	0	2	25	0	27	1	136	2	0	139	8	0	3	0	11	1	83	3	2	89	266	2
17:30	1	0	17	0	18	1	138	0	0	139	21	1	8	0	30	3	64	6	0	73	260	0
17:45	0	1	21	0	22	3	115	1	1	120	13	2	8	0	23	1	82	5	0	88	253	1
Total	2	3	86	0	91	7	525	4	1	537	44	3	22	0	69	7	324	17	3	351	1048	4
Grand Total	6	27	362	0	395	48	2177	15	8	2248	174	10	87	0	271	45	1343	111	39	1538	4452	47
Apprch %	1.5%	6.8%	91.6%	0.0%		2.1%	96.8%	0.7%	0.4%		64.2%	3.7%	32.1%	0.0%		2.9%	87.3%	7.2%	2.5%			
Total %	0.1%	0.6%	8.1%	0.0%	8.9%	1.1%	48.9%	0.3%	0.2%	50.5%	3.9%	0.2%	2.0%	0.0%	6.1%	1.0%	30.2%	2.5%	0.9%	34.5%	100.0%	

PM PEAK HOUR	Campbell Street Southbound					West Grand Avenue Westbound					Campbell Street Northbound					West Grand Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:00 to 15:00																					
Peak Hour For Entire Intersection Begins at 14:00																					
14:00	0	4	25	0	29	6	159	2	1	168	11	2	8	0	21	4	88	7	2	101	319
14:15	1	3	21	0	25	2	142	0	1	145	7	0	6	0	13	2	104	13	2	121	304
14:30	1	1	23	0	25	2	159	0	1	162	11	2	7	0	20	3	83	7	3	96	303
14:45	1	2	21	0	24	5	164	3	0	172	14	0	2	0	16	3	86	6	4	99	311
Total Volume	3	10	90	0	103	15	624	5	3	647	43	4	23	0	70	12	361	33	11	417	1237
% App Total	2.9%	9.7%	87.4%	0.0%		2.3%	96.4%	0.8%	0.5%		61.4%	5.7%	32.9%	0.0%		2.9%	86.6%	7.9%	2.6%		
PHF	.750	.625	.900	.000	.888	.625	.951	.417	.750	.940	.768	.500	.719	.000	.833	.750	.868	.635	.688	.862	.969

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-005 Mandela Parkway-24th Street.ppd
Date : 10/26/2013

Unshifted Count = All Vehicles

	Mandela Parkway Southbound					24th Street Westbound					Mandela Parkway Northbound					Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	0	107	0	0	107	42	0	0	0	42	0	110	0	2	112	0	0	0	0	0	261	2
14:15	0	88	0	0	88	31	0	2	0	33	0	85	0	1	86	0	0	0	0	0	207	1
14:30	0	107	0	0	107	39	0	4	0	43	0	75	0	0	75	0	0	0	0	0	225	0
14:45	0	97	0	0	97	32	0	0	0	32	0	78	0	0	78	0	0	0	0	0	207	0
Total	0	399	0	0	399	144	0	6	0	150	0	348	0	3	351	0	0	0	0	0	900	3
15:00	0	118	0	0	118	35	0	2	0	37	0	83	0	1	84	0	0	0	0	0	239	1
15:15	0	120	0	0	120	28	0	2	0	30	0	75	0	1	76	0	0	0	0	0	226	1
15:30	0	103	0	0	103	33	0	3	0	36	0	95	0	1	96	0	0	0	0	0	235	1
15:45	0	100	0	0	100	26	0	5	0	31	0	66	0	0	66	0	0	0	0	0	197	0
Total	0	441	0	0	441	122	0	12	0	134	0	319	0	3	322	0	0	0	0	0	897	3
16:00	0	107	0	0	107	30	0	2	0	32	0	78	0	0	78	0	0	0	0	0	217	0
16:15	0	100	0	0	100	33	0	1	0	34	0	65	0	0	65	0	0	0	0	0	199	0
16:30	0	96	0	0	96	26	0	3	0	29	0	60	0	0	60	0	0	0	0	0	185	0
16:45	0	89	0	0	89	36	0	0	0	36	0	56	0	1	57	0	0	0	0	0	182	1
Total	0	392	0	0	392	125	0	6	0	131	0	259	0	1	260	0	0	0	0	0	783	1
17:00	0	89	0	0	89	34	0	0	0	34	0	57	0	0	57	0	0	0	0	0	180	0
17:15	0	58	0	0	58	26	0	3	0	29	0	71	0	0	71	0	0	0	0	0	158	0
17:30	0	112	0	0	112	20	0	4	0	24	0	72	0	2	74	0	0	0	0	0	210	2
17:45	0	92	0	0	92	24	0	2	0	26	0	73	0	1	74	0	0	0	0	0	192	1
Total	0	351	0	0	351	104	0	9	0	113	0	273	0	3	276	0	0	0	0	0	740	3
Grand Total	0	1583	0	0	1583	495	0	33	0	528	0	1199	0	10	1209	0	0	0	0	0	3320	10
Apprch %	0.0%	100.0%	0.0%	0.0%		93.8%	0.0%	6.3%	0.0%		0.0%	99.2%	0.0%	0.8%		0.0%	0.0%	0.0%	0.0%			
Total %	0.0%	47.7%	0.0%	0.0%	47.7%	14.9%	0.0%	1.0%	0.0%	15.9%	0.0%	36.1%	0.0%	0.3%	36.4%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

PM PEAK HOUR	Mandela Parkway Southbound					24th Street Westbound					Mandela Parkway Northbound					Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:45 to 15:45																					
Peak Hour For Entire Intersection Begins at 14:45																					
14:45	0	97	0	0	97	32	0	0	0	32	0	78	0	0	78	0	0	0	0	0	207
15:00	0	118	0	0	118	35	0	2	0	37	0	83	0	1	84	0	0	0	0	0	239
15:15	0	120	0	0	120	28	0	2	0	30	0	75	0	1	76	0	0	0	0	0	226
15:30	0	103	0	0	103	33	0	3	0	36	0	95	0	1	96	0	0	0	0	0	235
Total Volume	0	438	0	0	438	128	0	7	0	135	0	331	0	3	334	0	0	0	0	0	907
% App Total	0.0%	100.0%	0.0%	0.0%		94.8%	0.0%	5.2%	0.0%		0.0%	99.1%	0.0%	0.9%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.913	.000	.000	.913	.914	.000	.583	.000	.912	.000	.871	.000	.750	.870	.000	.000	.000	.000	.000	.949

All Traffic Data

(916) 771-8700
orders@atdtraffic.com

City of Oakland
All Vehicles on Unshifted Tab
Bicycles on Bank 1 Tab
Heavy Trucks on Bank 2 Tab

File Name : 13-7630-006 Mandela Parkway-West Grand Avenue
Site Code : 00000000
Start Date : 10/26/2013
Page No : 1

Groups Printed- Unshifted

	Mandela Parkway Southbound						West Grand Avenue Westbound						Mandela Parkway Northbound						Peralta Street Northeastbound					West Grand Avenue Eastbound						
Start Time	Left	Thru	Bear Right	Right	Uturns	App. Total	Left	Bear Left	Thru	Right	Uturns	App. Total	Hard Left	Left	Thru	Right	Uturns	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	Uturns	App. Total	Int. Total
14:00	22	57	19	47	4	149	8	12	100	24	0	144	0	18	73	23	0	114	0	0	0	0	0	39	50	8	0	0	97	504
14:15	21	46	16	36	4	123	8	9	89	14	0	120	1	14	46	18	0	79	0	0	0	0	0	47	41	19	1	1	109	431
14:30	19	64	11	44	2	140	20	11	101	11	1	144	0	15	47	13	0	75	0	0	0	1	1	35	37	17	6	0	95	455
14:45	14	51	10	55	0	130	9	14	102	20	0	145	0	16	54	26	0	96	0	0	0	1	1	26	43	7	5	0	81	453
Total	76	218	56	182	10	542	45	46	392	69	1	553	1	63	220	80	0	364	0	0	0	2	2	147	171	51	12	1	382	1843
15:00	24	79	13	34	2	152	16	11	105	17	0	149	0	15	54	19	0	88	0	0	0	1	1	33	42	15	5	0	95	485
15:15	27	60	7	43	5	142	9	19	78	16	0	122	0	15	55	20	0	90	0	0	0	0	0	25	59	14	1	0	99	453
15:30	20	46	19	45	1	131	11	15	85	15	0	126	0	8	54	19	0	81	0	0	0	0	0	34	47	8	3	0	92	430
15:45	27	59	17	29	0	132	9	13	70	12	0	104	0	19	42	15	0	76	0	0	0	0	0	29	42	16	6	0	93	405
Total	98	244	56	151	8	557	45	58	338	60	0	501	0	57	205	73	0	335	0	0	0	1	1	121	190	53	15	0	379	1773
16:00	27	62	10	42	3	144	4	10	66	12	0	92	0	19	61	17	0	97	0	0	0	0	0	30	46	10	3	0	89	422
16:15	20	61	13	31	1	126	9	6	67	15	0	97	0	17	52	13	0	82	0	0	1	0	1	35	49	15	4	0	103	409
16:30	16	64	16	27	0	123	7	7	87	13	0	114	0	18	45	14	1	78	0	0	0	0	0	28	34	6	1	0	69	384
16:45	16	52	11	44	0	123	7	7	71	11	0	96	0	21	34	15	0	70	0	0	0	0	0	29	33	7	0	0	69	358
Total	79	239	50	144	4	516	27	30	291	51	0	399	0	75	192	59	1	327	0	0	1	0	1	122	162	38	8	0	330	1573
17:00	15	55	6	42	0	118	11	9	77	16	1	114	0	16	41	24	0	81	0	0	0	0	0	26	53	18	0	0	97	410
17:15	13	35	10	28	0	86	2	11	98	13	0	124	0	16	38	24	0	78	0	0	0	0	0	32	43	13	1	0	89	377
17:30	15	75	8	32	1	131	13	4	91	11	0	119	1	17	60	20	0	98	0	0	0	0	0	18	40	5	4	0	67	415
17:45	16	51	13	39	0	119	10	9	66	13	1	99	0	13	51	21	1	86	0	0	0	0	0	30	48	8	6	0	92	396
Total	59	216	37	141	1	454	36	33	332	53	2	456	1	62	190	89	1	343	0	0	0	0	0	106	184	44	11	0	345	1598
Grand Total	312	917	199	618	23	2069	153	167	1353	233	3	1909	2	257	807	301	2	1369	0	0	1	3	4	496	707	186	46	1	1436	6787
Apprch %	15.1	44.3	9.6	29.9	1.1		8	8.7	70.9	12.2	0.2		0.1	18.8	58.9	22	0.1		0	0	25	75		34.5	49.2	13	3.2	0.1		
Total %	4.6	13.5	2.9	9.1	0.3	30.5	2.3	2.5	19.9	3.4	0	28.1	0	3.8	11.9	4.4	0	20.2	0	0	0	0	0.1	7.3	10.4	2.7	0.7	0	21.2	

All Traffic Data

(916) 771-8700
orders@atdtraffic.com

City of Oakland
All Vehicles on Unshifted Tab
Bicycles on Bank 1 Tab
Heavy Trucks on Bank 2 Tab

File Name : 13-7630-006 Mandela Parkway-West Grand Avenue
Site Code : 00000000
Start Date : 10/26/2013

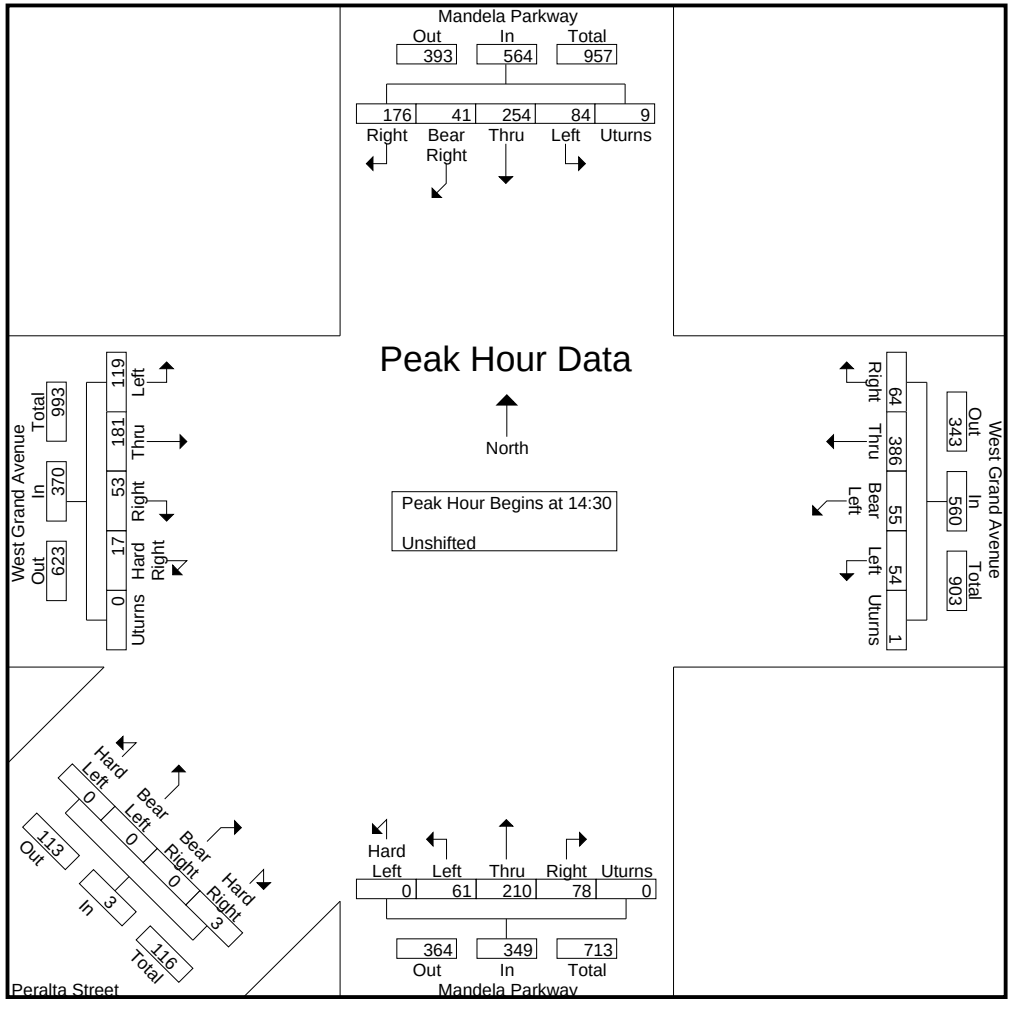
	Mandela Parkway Southbound						West Grand Avenue Westbound						Mandela Parkway Northbound						Peralta Street Northeastbound					West Grand Avenue Eastbound						
Start Time	Left	Thru	Bear Right	Right	Uturns	App. Total	Left	Bear Left	Thru	Right	Uturns	App. Total	Hard Left	Left	Thru	Right	Uturns	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	Uturns	App. Total	Int. Total
Peak Hour Analysis From 14:00 to 17:45 - Peak 1 of 1																														
Peak Hour for Entire Intersection Begins at 14:30																														
14:30	19	64	11	44	2	140	**20**	11	101	11	**1**	144	0	15	47	13	0	75	0	0	0	**1**	**1**	**35**	37	**17**	**6**	0	95	455
14:45	14	51	10	**55**	0	130	9	14	102	**20**	0	145	0	**16**	54	**26**	0	**96**	0	0	0	1	1	26	43	7	5	0	81	453
15:00	24	**79**	**13**	34	2	**152**	16	11	**105**	17	0	**149**	0	15	54	19	0	88	0	0	0	1	1	33	42	15	5	0	95	**485**
15:15	**27**	60	7	43	**5**	142	9	**19**	78	16	0	122	0	15	**55**	20	0	90	0	0	0	0	0	25	**59**	14	1	0	**99**	453
Total Volume	84	254	41	176	9	564	54	55	386	64	1	560	0	61	210	78	0	349	0	0	0	3	3	119	181	53	17	0	370	1846
% App. Total	14.9	45	7.3	31.2	1.6		9.6	9.8	68.9	11.4	0.2		0	17.5	60.2	22.3	0		0	0	0	100		32.2	48.9	14.3	4.6	0		
PHF	.778	.804	.788	.800	.450	.928	.675	.724	.919	.800	.250	.940	.000	.953	.955	.750	.000	.909	.000	.000	.000	.750	.750	.850	.767	.779	.708	.000	.934	.952

All Traffic Data

(916) 771-8700
orders@atdtraffic.com

City of Oakland
All Vehicles on Unshifted Tab
Bicycles on Bank 1 Tab
Heavy Trucks on Bank 2 Tab

File Name : 13-7630-006 Mandela Parkway-West Grand Avenue
Site Code : 00000000
Start Date : 10/26/2013
Page No : 3



ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-007 Mandela Parkway-20th Street.ppd
Date : 10/26/2013

Unshifted Count = All Vehicles

	Mandela Parkway Southbound					20th Street Westbound					Mandela Parkway Northbound					20th Street Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	1	70	3	0	74	1	0	3	0	4	0	92	1	1	94	15	0	4	0	19	191	1
14:15	2	66	3	2	73	1	0	2	0	3	1	62	6	0	69	10	0	3	0	13	158	2
14:30	4	95	2	4	105	1	0	4	0	5	0	62	9	0	71	5	0	3	0	8	189	4
14:45	5	59	2	4	70	1	0	3	0	4	2	71	2	0	75	17	1	6	0	24	173	4
Total	12	290	10	10	322	4	0	12	0	16	3	287	18	1	309	47	1	16	0	64	711	11
15:00	2	99	4	4	109	1	0	0	0	1	1	66	6	0	73	22	0	3	0	25	208	4
15:15	1	83	2	1	87	2	0	2	0	4	0	67	4	0	71	14	0	2	0	16	178	1
15:30	1	65	1	0	67	0	0	3	0	3	1	70	4	1	76	15	1	4	0	20	166	1
15:45	1	80	1	1	83	1	1	1	0	3	1	63	5	0	69	13	0	4	0	17	172	1
Total	5	327	8	6	346	4	1	6	0	11	3	266	19	1	289	64	1	13	0	78	724	7
16:00	0	74	2	2	78	1	0	4	0	5	0	78	1	0	79	7	0	3	0	10	172	2
16:15	0	81	1	1	83	0	0	1	0	1	0	72	0	0	72	15	0	2	0	17	173	1
16:30	2	76	1	0	79	2	0	1	0	3	0	60	5	0	65	9	0	4	0	13	160	0
16:45	1	68	0	1	70	1	0	2	0	3	1	56	0	0	57	14	0	3	0	17	147	1
Total	3	299	4	4	310	4	0	8	0	12	1	266	6	0	273	45	0	12	0	57	652	4
17:00	1	77	2	3	83	0	0	0	0	0	1	50	0	0	51	23	0	0	0	23	157	3
17:15	3	45	1	0	49	1	0	3	0	4	0	67	1	0	68	14	0	7	0	21	142	0
17:30	0	89	1	1	91	0	0	2	0	2	1	74	0	0	75	15	0	8	0	23	191	1
17:45	0	67	2	0	69	3	0	3	0	6	0	73	1	0	74	16	0	5	0	21	170	0
Total	4	278	6	4	292	4	0	8	0	12	2	264	2	0	268	68	0	20	0	88	660	4
Grand Total	24	1194	28	24	1270	16	1	34	0	51	9	1083	45	2	1139	224	2	61	0	287	2747	26
Apprch %	1.9%	94.0%	2.2%	1.9%		31.4%	2.0%	66.7%	0.0%		0.8%	95.1%	4.0%	0.2%		78.0%	0.7%	21.3%	0.0%			
Total %	0.9%	43.5%	1.0%	0.9%	46.2%	0.6%	0.0%	1.2%	0.0%	1.9%	0.3%	39.4%	1.6%	0.1%	41.5%	8.2%	0.1%	2.2%	0.0%	10.4%	100.0%	

PM PEAK HOUR	Mandela Parkway Southbound					20th Street Westbound					Mandela Parkway Northbound					20th Street Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:30 to 15:30																					
Peak Hour For Entire Intersection Begins at 14:30																					
14:30	4	95	2	4	105	1	0	4	0	5	0	62	9	0	71	5	0	3	0	8	189
14:45	5	59	2	4	70	1	0	3	0	4	2	71	2	0	75	17	1	6	0	24	173
15:00	2	99	4	4	109	1	0	0	0	1	1	66	6	0	73	22	0	3	0	25	208
15:15	1	83	2	1	87	2	0	2	0	4	0	67	4	0	71	14	0	2	0	16	178
Total Volume	12	336	10	13	371	5	0	9	0	14	3	266	21	0	290	58	1	14	0	73	748
% App Total	3.2%	90.6%	2.7%	3.5%		35.7%	0.0%	64.3%	0.0%		1.0%	91.7%	7.2%	0.0%		79.5%	1.4%	19.2%	0.0%		
PHF	.600	.848	.625	.813	.851	.625	.000	.563	.000	.700	.375	.937	.583	.000	.967	.659	.250	.583	.000	.730	.899

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-008 I-880 NB Off-Ramp-7th Street.ppd
Date : 10/26/2013

Unshifted Count = All Vehicles

	Frontage Road Southbound					7th Street Westbound					I-880 NB Off-Ramp Northbound					7th Street Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	25	0	38	0	63	0	19	19	0	38	12	33	29	0	74	6	8	0	0	14	189	0
14:15	22	0	36	0	58	0	22	18	0	40	8	39	26	0	73	4	7	0	0	11	182	0
14:30	20	0	27	0	47	0	31	38	0	69	8	40	31	0	79	7	5	0	0	12	207	0
14:45	14	0	37	0	51	0	35	25	0	60	17	32	31	0	80	6	10	0	0	16	207	0
Total	81	0	138	0	219	0	107	100	0	207	45	144	117	0	306	23	30	0	0	53	785	0
15:00	14	0	43	0	57	0	36	28	0	64	6	29	32	0	67	4	5	0	0	9	197	0
15:15	19	0	54	0	73	0	30	18	0	48	13	30	30	0	73	1	2	0	0	3	197	0
15:30	12	0	47	0	59	0	27	42	0	69	6	60	35	0	101	5	7	0	0	12	241	0
15:45	14	0	28	0	42	0	25	20	0	45	6	29	18	0	53	4	3	0	0	7	147	0
Total	59	0	172	0	231	0	118	108	0	226	31	148	115	0	294	14	17	0	0	31	782	0
16:00	11	0	31	0	42	0	14	14	0	28	10	36	22	0	68	1	12	0	0	13	151	0
16:15	8	0	28	0	36	0	29	24	0	53	9	32	17	0	58	3	8	0	0	11	158	0
16:30	7	0	26	0	33	0	25	30	0	55	6	31	18	0	55	2	4	0	0	6	149	0
16:45	12	0	20	0	32	0	29	26	0	55	4	26	24	0	54	6	4	0	0	10	151	0
Total	38	0	105	0	143	0	97	94	0	191	29	125	81	0	235	12	28	0	0	40	609	0
17:00	18	0	23	0	41	0	19	12	0	31	5	29	16	0	50	6	12	0	0	18	140	0
17:15	15	0	27	0	42	0	24	20	0	44	2	36	27	0	65	2	5	0	0	7	158	0
17:30	12	0	24	0	36	0	13	19	0	32	1	26	15	0	42	2	7	0	0	9	119	0
17:45	17	0	35	0	52	0	24	20	0	44	7	29	13	0	49	5	8	0	0	13	158	0
Total	62	0	109	0	171	0	80	71	0	151	15	120	71	0	206	15	32	0	0	47	575	0
Grand Total	240	0	524	0	764	0	402	373	0	775	120	537	384	0	1041	64	107	0	0	171	2751	0
Apprch %	31.4%	0.0%	68.6%	0.0%		0.0%	51.9%	48.1%	0.0%		11.5%	51.6%	36.9%	0.0%		37.4%	62.6%	0.0%	0.0%			
Total %	8.7%	0.0%	19.0%	0.0%	27.8%	0.0%	14.6%	13.6%	0.0%	28.2%	4.4%	19.5%	14.0%	0.0%	37.8%	2.3%	3.9%	0.0%	0.0%	6.2%	100.0%	

PM PEAK HOUR	Frontage Road Southbound					7th Street Westbound					I-880 NB Off-Ramp Northbound					7th Street Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:45 to 15:45																					
Peak Hour For Entire Intersection Begins at 14:45																					
14:45	14	0	37	0	51	0	35	25	0	60	17	32	31	0	80	6	10	0	0	16	207
15:00	14	0	43	0	57	0	36	28	0	64	6	29	32	0	67	4	5	0	0	9	197
15:15	19	0	54	0	73	0	30	18	0	48	13	30	30	0	73	1	2	0	0	3	197
15:30	12	0	47	0	59	0	27	42	0	69	6	60	35	0	101	5	7	0	0	12	241
Total Volume	59	0	181	0	240	0	128	113	0	241	42	151	128	0	321	16	24	0	0	40	842
% App Total	24.6%	0.0%	75.4%	0.0%		0.0%	53.1%	46.9%	0.0%		13.1%	47.0%	39.9%	0.0%		40.0%	60.0%	0.0%	0.0%		
PHF	.776	.000	.838	.000	.822	.000	.889	.673	.000	.873	.618	.629	.914	.000	.795	.667	.600	.000	.000	.625	.873

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-009 Maritime Street-7th Street.ppd
Date : 10/26/2013

Unshifted Count = All Vehicles

	Maritime Street Southbound					7th Street Westbound					Maritime Street Northbound					7th Street Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	9	2	1	0	12	0	6	11	0	17	0	2	4	0	6	0	9	0	1	10	45	1
14:15	12	2	0	0	14	4	4	9	0	17	0	2	7	0	9	4	3	0	0	7	47	0
14:30	5	2	0	0	7	6	9	7	1	23	0	1	6	0	7	1	6	0	0	7	44	1
14:45	7	5	0	0	12	2	8	14	1	25	0	3	6	0	9	4	9	1	0	14	60	1
Total	33	11	1	0	45	12	27	41	2	82	0	8	23	0	31	9	27	1	1	38	196	3
15:00	9	5	1	0	15	1	9	5	0	15	1	2	2	0	5	1	5	0	0	6	41	0
15:15	7	0	0	0	7	1	7	15	0	23	0	3	2	0	5	0	1	0	0	1	36	0
15:30	8	2	1	0	11	5	3	4	3	15	0	1	0	0	1	4	5	0	0	9	36	3
15:45	10	1	0	0	11	4	7	2	2	15	0	1	0	0	1	4	6	0	0	10	37	2
Total	34	8	2	0	44	11	26	26	5	68	1	7	4	0	12	9	17	0	0	26	150	5
16:00	6	3	0	0	9	4	4	10	0	18	0	2	3	0	5	1	7	0	0	8	40	0
16:15	9	1	0	0	10	3	9	5	0	17	0	0	2	0	2	7	11	1	0	19	48	0
16:30	6	3	1	0	10	1	7	6	0	14	1	0	3	0	4	4	9	0	0	13	41	0
16:45	12	1	0	0	13	3	7	4	1	15	0	0	2	0	2	6	12	0	0	18	48	1
Total	33	8	1	0	42	11	27	25	1	64	1	2	10	0	13	18	39	1	0	58	177	1
17:00	14	2	2	0	18	0	2	3	0	5	0	2	2	0	4	7	17	0	0	24	51	0
17:15	7	1	0	0	8	2	4	5	0	11	0	5	1	0	6	0	5	0	0	5	30	0
17:30	8	7	1	0	16	1	7	2	0	10	0	6	5	0	11	4	5	0	0	9	46	0
17:45	8	2	0	0	10	3	8	1	0	12	0	4	1	0	5	9	7	0	0	16	43	0
Total	37	12	3	0	52	6	21	11	0	38	0	17	9	0	26	20	34	0	0	54	170	0
Grand Total	137	39	7	0	183	40	101	103	8	252	2	34	46	0	82	56	117	2	1	176	693	9
Apprch %	74.9%	21.3%	3.8%	0.0%		15.9%	40.1%	40.9%	3.2%		2.4%	41.5%	56.1%	0.0%		31.8%	66.5%	1.1%	0.6%			
Total %	19.8%	5.6%	1.0%	0.0%	26.4%	5.8%	14.6%	14.9%	1.2%	36.4%	0.3%	4.9%	6.6%	0.0%	11.8%	8.1%	16.9%	0.3%	0.1%	25.4%	100.0%	

PM PEAK HOUR	Maritime Street Southbound					7th Street Westbound					Maritime Street Northbound					7th Street Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:00 to 15:00																					
Peak Hour For Entire Intersection Begins at 14:00																					
14:00	9	2	1	0	12	0	6	11	0	17	0	2	4	0	6	0	9	0	1	10	45
14:15	12	2	0	0	14	4	4	9	0	17	0	2	7	0	9	4	3	0	0	7	47
14:30	5	2	0	0	7	6	9	7	1	23	0	1	6	0	7	1	6	0	0	7	44
14:45	7	5	0	0	12	2	8	14	1	25	0	3	6	0	9	4	9	1	0	14	60
Total Volume	33	11	1	0	45	12	27	41	2	82	0	8	23	0	31	9	27	1	1	38	196
% App Total	73.3%	24.4%	2.2%	0.0%		14.6%	32.9%	50.0%	2.4%		0.0%	25.8%	74.2%	0.0%		23.7%	71.1%	2.6%	2.6%		
PHF	.688	.550	.250	.000	.804	.500	.750	.732	.500	.820	.000	.667	.821	.000	.861	.563	.750	.250	.250	.679	.817

ALL TRAFFIC DATA

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 13-7630-010 Adeline Street-West Grand Avenue.ppd
Date : 10/26/2013

Unshifted Count = All Vehicles

	Adeline Street Southbound					West Grand Avenue Westbound					Adeline Street Northbound					West Grand Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
14:00	12	28	9	1	50	8	134	10	2	154	6	32	10	0	48	7	73	7	0	87	339	3
14:15	11	26	13	0	50	8	104	9	1	122	5	22	12	0	39	11	67	5	1	84	295	2
14:30	10	40	21	0	71	8	125	11	4	148	9	23	11	0	43	3	69	3	0	75	337	4
14:45	20	28	17	0	65	14	112	10	1	137	6	28	9	0	43	5	77	9	0	91	336	1
Total	53	122	60	1	236	38	475	40	8	561	26	105	42	0	173	26	286	24	1	337	1307	10
15:00	14	30	12	0	56	9	122	10	0	141	11	27	9	0	47	12	85	1	0	98	342	0
15:15	16	31	20	0	67	8	92	17	1	118	9	20	6	0	35	5	104	6	1	116	336	2
15:30	13	46	18	0	77	13	100	10	1	124	6	29	8	0	43	8	75	5	1	89	333	2
15:45	9	31	5	0	45	6	88	14	1	109	6	18	8	0	32	5	91	6	0	102	288	1
Total	52	138	55	0	245	36	402	51	3	492	32	94	31	0	157	30	355	18	2	405	1299	5
16:00	18	37	10	0	65	7	78	12	2	99	9	22	5	0	36	10	71	8	1	90	290	3
16:15	8	46	9	0	63	7	83	9	1	100	6	27	2	0	35	10	79	7	0	96	294	1
16:30	9	32	16	0	57	8	92	9	1	110	8	20	10	0	38	11	58	2	0	71	276	1
16:45	12	31	11	0	54	9	79	4	4	96	6	18	7	0	31	10	59	3	0	72	253	4
Total	47	146	46	0	239	31	332	34	8	405	29	87	24	0	140	41	267	20	1	329	1113	9
17:00	8	30	17	0	55	10	85	10	2	107	4	21	8	0	33	4	79	4	0	87	282	2
17:15	15	26	9	0	50	12	105	10	6	133	7	33	7	0	47	7	68	7	0	82	312	6
17:30	7	32	11	0	50	7	106	5	6	124	7	32	10	0	49	11	76	2	0	89	312	6
17:45	11	23	5	0	39	19	98	14	1	132	8	27	12	0	47	7	72	10	0	89	307	1
Total	41	111	42	0	194	48	394	39	15	496	26	113	37	0	176	29	295	23	0	347	1213	15
Grand Total	193	517	203	1	914	153	1603	164	34	1954	113	399	134	0	646	126	1203	85	4	1418	4932	39
Apprch %	21.1%	56.6%	22.2%	0.1%		7.8%	82.0%	8.4%	1.7%		17.5%	61.8%	20.7%	0.0%		8.9%	84.8%	6.0%	0.3%			
Total %	3.9%	10.5%	4.1%	0.0%	18.5%	3.1%	32.5%	3.3%	0.7%	39.6%	2.3%	8.1%	2.7%	0.0%	13.1%	2.6%	24.4%	1.7%	0.1%	28.8%	100.0%	

PM PEAK HOUR	Adeline Street Southbound					West Grand Avenue Westbound					Adeline Street Northbound					West Grand Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:30 to 15:30																					
Peak Hour For Entire Intersection Begins at 14:30																					
14:30	10	40	21	0	71	8	125	11	4	148	9	23	11	0	43	3	69	3	0	75	337
14:45	20	28	17	0	65	14	112	10	1	137	6	28	9	0	43	5	77	9	0	91	336
15:00	14	30	12	0	56	9	122	10	0	141	11	27	9	0	47	12	85	1	0	98	342
15:15	16	31	20	0	67	8	92	17	1	118	9	20	6	0	35	5	104	6	1	116	336
Total Volume	60	129	70	0	259	39	451	48	6	544	35	98	35	0	168	25	335	19	1	380	1351
% App Total	23.2%	49.8%	27.0%	0.0%		7.2%	82.9%	8.8%	1.1%		20.8%	58.3%	20.8%	0.0%		6.6%	88.2%	5.0%	0.3%		
PHF	.750	.806	.833	.000	.912	.696	.902	.706	.375	.919	.795	.875	.795	.000	.894	.521	.805	.528	.250	.819	.988

APPENDIX B: LEVEL OF SERVICE CALCULATION WORKSHEETS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	0	6	0	0	0	4	431	1	0	84	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.99				1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.98	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1767	1199				1202	2735			2463	
Flt Permitted		0.76	1.00				0.69	1.00			1.00	
Satd. Flow (perm)		1408	1199				873	2735			2463	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92
Adj. Flow (vph)	69	0	6	0	0	0	4	459	1	0	89	10
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	69	2	0	0	0	4	460	0	0	93	0
Confl. Peds. (#/hr)	2		1	1		2	1		2	2		1
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	0%	33%	0%	0%	0%	50%	32%	0%	0%	49%	0%
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		29.0	29.0				31.0	31.0			31.0	
Effective Green, g (s)		29.0	29.0				31.0	31.0			31.0	
Actuated g/C Ratio		0.41	0.41				0.44	0.44			0.44	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		583	496				386	1211			1090	
v/s Ratio Prot								c0.17			0.04	
v/s Ratio Perm		c0.05	0.00				0.00					
v/c Ratio		0.12	0.01				0.01	0.38			0.09	
Uniform Delay, d1		12.6	12.0				10.9	13.1			11.3	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		0.4	0.0				0.0	0.9			0.2	
Delay (s)		13.0	12.1				11.0	14.0			11.4	
Level of Service		B	B				B	B			B	
Approach Delay (s)		13.0			0.0			13.9			11.4	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	234	70	39	536	31	242	50	148	53	20	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1504	3505	1495	1433	3359		1618	1345	1302	1517	1398	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1504	3505	1495	1433	3359		1618	1345	1302	1517	1398	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	246	74	41	564	33	255	53	156	56	21	45
RTOR Reduction (vph)	0	0	57	0	4	0	0	0	126	0	34	0
Lane Group Flow (vph)	5	246	17	41	593	0	153	155	30	56	32	0
Heavy Vehicles (%)	20%	3%	8%	26%	3%	68%	6%	76%	24%	19%	50%	9%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	1.0	16.9	16.9	4.9	20.8		14.5	14.5	14.5	18.8	18.8	
Effective Green, g (s)	1.0	16.9	16.9	4.9	20.8		14.5	14.5	14.5	18.8	18.8	
Actuated g/C Ratio	0.01	0.23	0.23	0.07	0.28		0.19	0.19	0.19	0.25	0.25	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	20	788	336	93	930		312	259	251	379	349	
v/s Ratio Prot	0.00	0.07		c0.03	c0.18		0.09	c0.12		c0.04	0.02	
v/s Ratio Perm			0.01						0.02			
v/c Ratio	0.25	0.31	0.05	0.44	0.64		0.49	0.60	0.12	0.15	0.09	
Uniform Delay, d1	36.7	24.3	22.8	33.8	23.8		27.0	27.6	25.0	21.9	21.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.5	0.2	0.1	3.3	1.4		1.2	3.7	0.2	0.8	0.5	
Delay (s)	43.2	24.5	22.9	37.1	25.3		28.2	31.3	25.2	22.7	22.1	
Level of Service	D	C	C	D	C		C	C	C	C	C	
Approach Delay (s)		24.4			26.1			28.3			22.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	75.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	283	69	143	500	167	77	138	290	105	60	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.90		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1433	3223		1626	3438	1495	1444	2823		1612	2833	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1433	3223		1626	3438	1495	1444	2823		1612	2833	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	91	292	71	147	515	172	79	142	299	108	62	14
RTOR Reduction (vph)	0	22	0	0	0	142	0	252	0	0	12	0
Lane Group Flow (vph)	91	341	0	147	515	30	79	189	0	108	64	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			3									
Heavy Vehicles (%)	26%	8%	10%	11%	5%	8%	25%	23%	11%	12%	18%	50%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.30	0.30		0.18	0.18	0.18	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	432	973		287	608	264	225	441		251	442	
v/s Ratio Prot	0.06	c0.11		0.09	c0.15		0.05	c0.07		c0.07	0.02	
v/s Ratio Perm						0.02						
v/c Ratio	0.21	0.35		0.51	0.85	0.12	0.35	0.43		0.43	0.15	
Uniform Delay, d1	25.0	26.1		35.7	38.2	33.2	36.2	36.6		36.6	35.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	1.0		6.4	13.7	0.9	4.3	3.0		5.3	0.7	
Delay (s)	26.1	27.1		42.1	51.9	34.1	40.4	39.6		41.9	35.7	
Level of Service	C	C		D	D	C	D	D		D	D	
Approach Delay (s)		26.9			46.5			39.8			39.3	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	76	600	40	18	642	10	32	0	13	2	4	171
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	82	645	43	19	690	11	34	0	14	2	4	184
Pedestrians								2			2	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1120			405							
pX, platoon unblocked	0.92						0.92	0.92		0.92	0.92	0.92
vC, conflicting volume	703			690			1402	1574	346	1236	1590	353
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	516			690			1272	1458	346	1093	1475	137
tC, single (s)	4.9			4.1			7.9	6.5	7.1	7.5	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.6			2.2			3.7	4.0	3.4	3.5	4.0	3.4
p0 queue free %	89			98			48	100	98	98	96	77
cM capacity (veh/h)	759			912			67	105	632	139	103	793

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	404	366	365	356	48	190
Volume Left	82	0	19	0	34	2
Volume Right	0	43	0	11	14	184
cSH	759	1700	912	1700	90	658
Volume to Capacity	0.11	0.22	0.02	0.21	0.54	0.29
Queue Length 95th (ft)	9	0	2	0	60	30
Control Delay (s)	3.2	0.0	0.7	0.0	84.2	12.7
Lane LOS	A		A		F	B
Approach Delay (s)	1.7		0.4		84.2	12.7
Approach LOS					F	B

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	66.2%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	150	0	0	0	0	480
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	155	0	0	0	0	495
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	247	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	247	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	100			100	
cM capacity (veh/h)	714	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	77	77	247	247
Volume Left	77	77	0	0
Volume Right	0	0	0	0
cSH	714	714	1700	1700
Volume to Capacity	0.11	0.11	0.15	0.15
Queue Length 95th (ft)	9	9	0	0
Control Delay (s)	10.7	10.7	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	10.7		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	28.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	445	69	95	440	0	0	0	0	111	370	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.91		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.98		1.00	1.00						0.97	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		4813		1770	3471						3375	
Flt Permitted		1.00		0.42	1.00						0.99	
Satd. Flow (perm)		4813		788	3471						3375	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	464	72	99	458	0	0	0	0	116	385	146
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	24	0
Lane Group Flow (vph)	0	517	0	99	458	0	0	0	0	0	623	0
Confl. Peds. (#/hr)										7		3
Confl. Bikes (#/hr)						1						36
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		51.0		51.0	51.0						49.0	
Effective Green, g (s)		51.0		51.0	51.0						49.0	
Actuated g/C Ratio		0.46		0.46	0.46						0.45	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		2231		365	1609						1503	
v/s Ratio Prot		0.11			c0.13							
v/s Ratio Perm				0.13							0.18	
v/c Ratio		0.23		0.27	0.28						0.41	
Uniform Delay, d1		17.7		18.1	18.2						20.7	
Progression Factor		1.00		0.50	0.49						1.00	
Incremental Delay, d2		0.2		1.8	0.4						0.8	
Delay (s)		18.0		10.8	9.3						21.6	
Level of Service		B		B	A						C	
Approach Delay (s)		18.0			9.6			0.0			21.6	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	65	7	4	1	0	0	0	0	6	418	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	70	8	4	1	0	0	0	0	6	449	2
Pedestrians		3						1				
Lane Width (ft)		12.0						0.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	467	466	230	281	468	0	455			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	467	466	230	281	468	0	455			0		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	86	99	99	100	100	100			100		
cM capacity (veh/h)	461	494	777	575	493	1091	1114			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	77	5	231	227
Volume Left	0	4	6	0
Volume Right	8	0	0	2
cSH	512	556	1636	1700
Volume to Capacity	0.15	0.01	0.00	0.13
Queue Length 95th (ft)	13	1	0	0
Control Delay (s)	13.3	11.5	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	13.3	11.5	0.1	
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	22.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	86	0	0	96	114	79	278	83	79	0	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.92		1.00	0.97		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1160	3195			2746		1014	2888		1570		2349
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1160	3195			2746		1014	2888		1570		2349
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	139	96	0	0	107	127	88	309	92	88	0	201
RTOR Reduction (vph)	0	0	0	0	111	0	0	20	0	0	0	174
Lane Group Flow (vph)	139	96	0	0	123	0	79	390	0	88	0	27
Confl. Peds. (#/hr)							4					4
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	40%	13%	0%	0%	18%	21%	62%	15%	13%	15%	0%	21%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		Prot
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	13.9	13.9			8.4		17.2	17.2		9.3		9.3
Effective Green, g (s)	13.9	13.9			8.4		17.2	17.2		9.3		9.3
Actuated g/C Ratio	0.20	0.20			0.12		0.25	0.25		0.14		0.14
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	234	645			335		253	722		212		317
v/s Ratio Prot	c0.12	0.03			c0.04		0.08	c0.13		c0.06		0.01
v/s Ratio Perm												
v/c Ratio	0.59	0.15			0.37		0.31	0.54		0.42		0.09
Uniform Delay, d1	24.9	22.6			27.8		21.0	22.4		27.3		26.0
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	4.0	0.1			0.7		3.2	2.9		1.3		0.1
Delay (s)	28.9	22.7			28.4		24.2	25.3		28.6		26.1
Level of Service	C	C			C		C	C		C		C
Approach Delay (s)		26.4			28.4			25.1			26.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	174	32	25	53	58	5	201	138	173	112	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	165	191	35	27	58	64	5	221	152	190	123	0
RTOR Reduction (vph)	0	0	24	0	0	56	0	104	0	0	0	0
Lane Group Flow (vph)	165	191	11	27	58	8	5	269	0	190	123	0
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	45%	52%	94%	63%	64%	50%	80%	79%	62%	50%	93%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Effective Green, g (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Actuated g/C Ratio	0.32	0.32	0.32	0.12	0.12	0.12	0.24	0.24		0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	404	771	270	138	275	132	242	476		170	264	
v/s Ratio Prot	c0.13	c0.08		0.02	0.03		0.00	c0.14		c0.16	0.07	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.41	0.25	0.04	0.20	0.21	0.06	0.02	0.57		1.12	0.47	
Uniform Delay, d1	31.5	29.7	27.7	47.1	47.2	46.3	34.7	40.0		51.5	47.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	0.8	0.3	3.1	1.7	0.9	0.2	4.8		104.1	5.8	
Delay (s)	34.6	30.5	28.0	50.2	48.9	47.2	34.8	44.8		155.6	53.1	
Level of Service	C	C	C	D	D	D	C	D		F	D	
Approach Delay (s)		32.0			48.4			44.6			115.3	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	59.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	483	43	59	554	50	29	196	54	62	181	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.91			0.91			0.95			0.95	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.97			0.97	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		4857			4989			3362			3301	
Flt Permitted		0.84			0.83			0.90			0.84	
Satd. Flow (perm)		4105			4170			3050			2808	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	508	45	62	583	53	31	206	57	65	191	67
RTOR Reduction (vph)	0	15	0	0	15	0	0	21	0	0	23	0
Lane Group Flow (vph)	0	584	0	0	683	0	0	273	0	0	300	0
Confl. Peds. (#/hr)	20		12	12		20	17		11	11		17
Confl. Bikes (#/hr)			10			8			12			9
Heavy Vehicles (%)	2%	5%	7%	2%	2%	2%	2%	3%	4%	2%	3%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.8			18.8			33.6			33.6	
Effective Green, g (s)		18.8			18.8			33.6			33.6	
Actuated g/C Ratio		0.30			0.30			0.54			0.54	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1236			1256			1642			1512	
v/s Ratio Prot												
v/s Ratio Perm		0.14			c0.16			0.09			c0.11	
v/c Ratio		0.47			0.54			0.17			0.20	
Uniform Delay, d1		17.8			18.2			7.3			7.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.5			0.2			0.3	
Delay (s)		18.0			18.7			7.5			7.7	
Level of Service		B			B			A			A	
Approach Delay (s)		18.0			18.7			7.5			7.7	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	62.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	146	9	4	596	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	0	0	151	9	4	614	0	0	0	0
Pedestrians		16			1						3	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	419	640	16	624	640	311	16			615		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	419	640	16	624	640	311	16			615		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	62	99	100			100		
cM capacity (veh/h)	362	395	1066	373	395	690	1615			973		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	100	59	209	410
Volume Left	0	0	4	0
Volume Right	0	9	0	0
cSH	395	423	1615	1700
Volume to Capacity	0.25	0.14	0.00	0.24
Queue Length 95th (ft)	25	12	0	0
Control Delay (s)	17.2	14.9	0.2	0.0
Lane LOS	C	B	A	
Approach Delay (s)	16.3		0.1	
Approach LOS	C			

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	28.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	306	0	0	448	102	87	407	111	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.91			0.91			0.95				
Frpb, ped/bikes		1.00			1.00			0.99				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.97			0.97				
Flt Protected		0.98			1.00			0.99				
Satd. Flow (prot)		4784			4862			3350				
Flt Permitted		0.67			1.00			0.99				
Satd. Flow (perm)		3277			4862			3350				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	260	319	0	0	467	106	91	424	116	0	0	0
RTOR Reduction (vph)	0	0	0	0	33	0	0	18	0	0	0	0
Lane Group Flow (vph)	0	579	0	0	540	0	0	613	0	0	0	0
Confl. Peds. (#/hr)	2					2			4	4		
Confl. Bikes (#/hr)			1						44			
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)		51.0			51.0			49.0				
Effective Green, g (s)		51.0			51.0			49.0				
Actuated g/C Ratio		0.46			0.46			0.45				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		1519			2254			1492				
v/s Ratio Prot					0.11							
v/s Ratio Perm		c0.18						0.18				
v/c Ratio		0.38			0.24			0.41				
Uniform Delay, d1		19.2			17.8			20.7				
Progression Factor		0.56			1.00			1.00				
Incremental Delay, d2		0.7			0.3			0.2				
Delay (s)		11.5			18.1			20.9				
Level of Service		B			B			C				
Approach Delay (s)		11.5			18.1			20.9			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	65	0	0	0	1	4	5	536	2	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	70	0	0	0	1	4	5	576	2	0	0	0
Pedestrians		12			1						1	
Lane Width (ft)		12.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	317	602	12	589	601	291	12			579		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	317	602	12	589	601	291	12			579		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	100	100	100	100	99	100			100		
cM capacity (veh/h)	580	410	1061	391	411	711	1604			1004		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	70	5	294	290
Volume Left	70	0	5	0
Volume Right	0	4	0	2
cSH	580	620	1604	1700
Volume to Capacity	0.12	0.01	0.00	0.17
Queue Length 95th (ft)	10	1	0	0
Control Delay (s)	12.0	10.9	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	12.0	10.9	0.1	
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	32.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	0	12	0	0	0	6	108	0	0	54	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	1.00				1.00	1.00			0.99	
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.95	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1805	1615				1543	3471			3138	
Flt Permitted		0.76	1.00				0.70	1.00			1.00	
Satd. Flow (perm)		1439	1615				1132	3471			3138	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	75	0	14	0	0	0	7	123	0	0	61	27
RTOR Reduction (vph)	0	0	8	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	75	6	0	0	0	7	123	0	0	73	0
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	17%	4%	0%	0%	13%	0%
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		30.0	30.0				30.0	30.0			30.0	
Effective Green, g (s)		30.0	30.0				30.0	30.0			30.0	
Actuated g/C Ratio		0.43	0.43				0.43	0.43			0.43	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		616	692				485	1487			1344	
v/s Ratio Prot								c0.04			0.02	
v/s Ratio Perm		c0.05	0.00				0.01					
v/c Ratio		0.12	0.01				0.01	0.08			0.05	
Uniform Delay, d1		12.1	11.5				11.5	11.8			11.7	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		0.4	0.0				0.1	0.1			0.1	
Delay (s)		12.5	11.5				11.6	12.0			11.8	
Level of Service		B	B				B	B			B	
Approach Delay (s)		12.3			0.0			11.9			11.8	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.10		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	165	34	29	483	20	55	12	78	34	11	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1357	3471	1524	1687	3409		1649	1455	1495	1433	1342	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1357	3471	1524	1687	3409		1649	1455	1495	1433	1342	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	179	37	32	525	22	60	13	85	37	12	18
RTOR Reduction (vph)	0	0	29	0	2	0	0	0	47	0	17	0
Lane Group Flow (vph)	27	179	8	32	545	0	36	37	38	37	13	0
Heavy Vehicles (%)	33%	4%	6%	7%	4%	35%	4%	50%	8%	26%	45%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	2.9	19.1	19.1	4.1	20.3		40.6	40.6	40.6	6.5	6.5	
Effective Green, g (s)	2.9	19.1	19.1	4.1	20.3		40.6	40.6	40.6	6.5	6.5	
Actuated g/C Ratio	0.03	0.21	0.21	0.05	0.22		0.45	0.45	0.45	0.07	0.07	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	43	734	322	76	766		741	654	672	103	96	
v/s Ratio Prot	c0.02	0.05		0.02	c0.16		0.02	0.03		c0.03	0.01	
v/s Ratio Perm			0.01						c0.03			
v/c Ratio	0.63	0.24	0.02	0.42	0.71		0.05	0.06	0.06	0.36	0.14	
Uniform Delay, d1	43.2	29.6	28.2	41.9	32.3		14.0	14.0	14.0	39.9	39.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	25.3	0.2	0.0	3.7	3.1		0.1	0.2	0.2	2.1	0.7	
Delay (s)	68.5	29.8	28.2	45.7	35.4		14.1	14.2	14.2	42.1	39.9	
Level of Service	E	C	C	D	D		B	B	B	D	D	
Approach Delay (s)		33.8			36.0			14.2			41.1	
Approach LOS		C			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	90.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	156	54	110	445	189	77	85	127	93	69	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.91		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	3254		1703	3505	1543	1583	3042		1736	2926	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1626	3254		1703	3505	1543	1583	3042		1736	2926	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	43	166	57	117	473	201	82	90	135	99	73	23
RTOR Reduction (vph)	0	36	0	0	0	165	0	114	0	0	19	0
Lane Group Flow (vph)	43	187	0	117	473	36	82	111	0	99	77	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1			3						
Heavy Vehicles (%)	11%	4%	13%	6%	3%	3%	14%	5%	10%	4%	12%	41%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.30	0.30		0.18	0.18	0.18	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	491	982		301	620	273	247	475		271	457	
v/s Ratio Prot	0.03	c0.06		0.07	c0.13		c0.05	0.04		c0.06	0.03	
v/s Ratio Perm						0.02						
v/c Ratio	0.09	0.19		0.39	0.76	0.13	0.33	0.23		0.37	0.17	
Uniform Delay, d1	24.0	24.8		34.9	37.6	33.3	36.0	35.5		36.2	35.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.4		3.8	8.6	1.0	3.6	1.2		3.8	0.8	
Delay (s)	24.4	25.2		38.7	46.2	34.3	39.6	36.6		40.0	35.9	
Level of Service	C	C		D	D	C	D	D		D	D	
Approach Delay (s)		25.1			42.1			37.4			38.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	361	33	18	624	5	43	4	23	3	10	90
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	24	372	34	19	643	5	44	4	24	3	10	93
Pedestrians		2										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		4.0										
Percent Blockage		0										
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1120			405							
pX, platoon unblocked	0.93						0.93	0.93		0.93	0.93	0.93
vC, conflicting volume	648			406			895	1122	203	942	1137	326
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	469			406			735	979	203	785	995	122
tC, single (s)	4.9			4.2			7.5	6.5	7.0	8.2	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.6			2.3			3.5	4.0	3.3	3.8	4.0	3.3
p0 queue free %	97			98			81	98	97	98	95	89
cM capacity (veh/h)	792			1114			236	223	798	201	219	837

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	210	220	340	327	72	106
Volume Left	24	0	19	0	44	3
Volume Right	0	34	0	5	24	93
cSH	792	1700	1114	1700	306	612
Volume to Capacity	0.03	0.13	0.02	0.19	0.24	0.17
Queue Length 95th (ft)	2	0	1	0	22	16
Control Delay (s)	1.4	0.0	0.6	0.0	20.4	12.1
Lane LOS	A		A		C	B
Approach Delay (s)	0.7		0.3		20.4	12.1
Approach LOS					C	B

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	47.7%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	131	0	0	0	0	438
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	151	0	0	0	0	503
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	252	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	252	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	100			100	
cM capacity (veh/h)	707	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	75	75	252	252
Volume Left	75	75	0	0
Volume Right	0	0	0	0
cSH	707	707	1700	1700
Volume to Capacity	0.11	0.11	0.15	0.15
Queue Length 95th (ft)	9	9	0	0
Control Delay (s)	10.7	10.7	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	10.7		0.0	
Approach LOS	B			

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	22.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	207	70	110	386	0	0	0	0	93	295	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.91		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.96		1.00	1.00						0.95	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		4677		1765	3539						3259	
Flt Permitted		1.00		0.56	1.00						0.99	
Satd. Flow (perm)		4677		1050	3539						3259	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	220	74	117	411	0	0	0	0	99	314	187
RTOR Reduction (vph)	0	43	0	0	0	0	0	0	0	0	47	0
Lane Group Flow (vph)	0	251	0	117	411	0	0	0	0	0	553	0
Confl. Peds. (#/hr)			4	4						4		2
Confl. Bikes (#/hr)			3			2						21
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		46.0		46.0	46.0						54.0	
Effective Green, g (s)		46.0		46.0	46.0						54.0	
Actuated g/C Ratio		0.42		0.42	0.42						0.49	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		1955		439	1479						1599	
v/s Ratio Prot		0.05			c0.12							
v/s Ratio Perm				0.11							0.17	
v/c Ratio		0.13		0.27	0.28						0.35	
Uniform Delay, d1		19.7		21.0	21.1						17.2	
Progression Factor		1.00		0.36	0.36						1.00	
Incremental Delay, d2		0.1		0.3	0.1						0.6	
Delay (s)		19.8		7.9	7.7						17.8	
Level of Service		B		A	A						B	
Approach Delay (s)		19.8			7.7			0.0			17.8	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	59	14	5	0	0	0	0	0	25	336	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	66	16	6	0	0	0	0	0	28	373	11
Pedestrians								1				
Lane Width (ft)								0.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	434	434	193	292	440	0	384			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	434	434	193	292	440	0	384			0		
tC, single (s)	7.7	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	100	87	98	99	100	100	100			98		
cM capacity (veh/h)	485	509	822	548	505	1091	1185			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	81	6	214	198
Volume Left	0	6	28	0
Volume Right	16	0	0	11
cSH	549	548	1636	1700
Volume to Capacity	0.15	0.01	0.02	0.12
Queue Length 95th (ft)	13	1	1	0
Control Delay (s)	12.7	11.6	1.1	0.0
Lane LOS	B	B	A	
Approach Delay (s)	12.7	11.6	0.6	
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	21.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	24	0	0	128	113	42	151	128	59	0	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.93		1.00	0.93		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1624	3471			3078		1441	2983		1543		2682
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1624	3471			3078		1441	2983		1543		2682
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	18	28	0	0	147	130	48	174	147	68	0	208
RTOR Reduction (vph)	0	0	0	0	110	0	0	95	0	0	0	192
Lane Group Flow (vph)	18	28	0	0	167	0	43	231	0	68	0	16
Confl. Peds. (#/hr)	6					6						
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	0%	4%	0%	0%	9%	7%	14%	7%	9%	17%	0%	6%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		Prot
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	2.3	2.3			8.0		18.4	18.4		4.1		4.1
Effective Green, g (s)	2.3	2.3			8.0		18.4	18.4		4.1		4.1
Actuated g/C Ratio	0.04	0.04			0.15		0.36	0.36		0.08		0.08
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	72	154			475		511	1059		122		212
v/s Ratio Prot	c0.01	0.01			c0.05		0.03	c0.08		c0.04		0.01
v/s Ratio Perm												
v/c Ratio	0.25	0.18			0.35		0.08	0.22		0.56		0.08
Uniform Delay, d1	23.9	23.8			19.6		11.1	11.7		23.0		22.1
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	1.8	0.6			0.5		0.3	0.5		5.4		0.2
Delay (s)	25.7	24.4			20.0		11.4	12.1		28.4		22.3
Level of Service	C	C			C		B	B		C		C
Approach Delay (s)		24.9			20.0			12.1			23.8	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	27	1	14	27	41	0	8	23	33	11	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	793	1357	3471	1328		2621		1703	2362	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	793	1357	3471	1328		2621		1703	2362	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	12	33	1	17	33	50	0	10	28	40	13	1
RTOR Reduction (vph)	0	0	1	0	0	32	0	21	0	0	1	0
Lane Group Flow (vph)	12	33	0	17	33	18	0	17	0	40	13	0
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			4			2						3
Heavy Vehicles (%)	0%	0%	100%	33%	4%	20%	0%	38%	17%	6%	55%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	10.0	39.0	39.0	15.0	44.0	44.0		30.0		16.0	42.0	
Effective Green, g (s)	10.0	39.0	39.0	15.0	44.0	44.0		30.0		16.0	42.0	
Actuated g/C Ratio	0.08	0.32	0.32	0.12	0.37	0.37		0.25		0.13	0.35	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Grp Cap (vph)	150	1173	257	169	1272	486		655		227	826	
v/s Ratio Prot	0.01	0.01		c0.01	0.01			c0.01		c0.02	0.01	
v/s Ratio Perm			0.00			c0.01						
v/c Ratio	0.08	0.03	0.00	0.10	0.03	0.04		0.03		0.18	0.02	
Uniform Delay, d1	50.8	27.6	27.3	46.5	24.3	24.4		34.0		46.2	25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.0	0.0	1.2	0.0	0.1		0.1		1.7	0.0	
Delay (s)	51.8	27.6	27.4	47.7	24.3	24.5		34.0		47.8	25.5	
Level of Service	D	C	C	D	C	C		C		D	C	
Approach Delay (s)		33.9			28.4			34.0			42.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	335	19	45	451	48	35	98	35	60	129	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.91			0.91			0.95			0.95	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.97			0.96	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		4949			4961			3444			3319	
Flt Permitted		0.88			0.87			0.87			0.86	
Satd. Flow (perm)		4364			4353			3040			2895	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	26	338	19	45	456	48	35	99	35	61	130	71
RTOR Reduction (vph)	0	10	0	0	19	0	0	15	0	0	31	0
Lane Group Flow (vph)	0	373	0	0	530	0	0	154	0	0	231	0
Confl. Peds. (#/hr)	6		3	3		6	6		5	5		6
Confl. Bikes (#/hr)			15			13			14			11
Heavy Vehicles (%)	0%	4%	0%	0%	3%	0%	0%	0%	0%	2%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.6			15.6			33.8			33.8	
Effective Green, g (s)		15.6			15.6			33.8			33.8	
Actuated g/C Ratio		0.26			0.26			0.57			0.57	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1146			1143			1729			1647	
v/s Ratio Prot												
v/s Ratio Perm		0.09			c0.12			0.05			c0.08	
v/c Ratio		0.33			0.46			0.09			0.14	
Uniform Delay, d1		17.7			18.4			5.8			6.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.3			0.1			0.2	
Delay (s)		17.8			18.7			5.9			6.2	
Level of Service		B			B			A			A	
Approach Delay (s)		17.8			18.7			5.9			6.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	128	7	3	331	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	0	0	147	8	3	380	0	0	0	0
Pedestrians		3			3						2	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	284	393	3	390	393	195	3			383		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	284	393	3	390	393	195	3			383		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	73	99	100			100		
cM capacity (veh/h)	509	544	1086	533	544	817	1632			1183		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	98	57	130	254
Volume Left	0	0	3	0
Volume Right	0	8	0	0
cSH	544	570	1632	1700
Volume to Capacity	0.18	0.10	0.00	0.15
Queue Length 95th (ft)	16	8	0	0
Control Delay (s)	13.1	12.0	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	12.7		0.1	
Approach LOS	B			

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	22.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	181	0	0	433	64	64	210	78	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.91			0.91			0.95				
Frpb, ped/bikes		1.00			1.00			0.99				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.98			0.97				
Flt Protected		0.98			1.00			0.99				
Satd. Flow (prot)		4824			4978			3393				
Flt Permitted		0.68			1.00			0.99				
Satd. Flow (perm)		3360			4978			3393				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	127	193	0	0	461	68	68	223	83	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	24	0	0	0	0
Lane Group Flow (vph)	0	320	0	0	512	0	0	350	0	0	0	0
Confl. Peds. (#/hr)	1					1			8			
Confl. Bikes (#/hr)			2			2			27			
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)		46.0			46.0			54.0				
Effective Green, g (s)		46.0			46.0			54.0				
Actuated g/C Ratio		0.42			0.42			0.49				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		1405			2081			1665				
v/s Ratio Prot					c0.10							
v/s Ratio Perm		0.10						0.10				
v/c Ratio		0.23			0.25			0.21				
Uniform Delay, d1		20.6			20.8			15.9				
Progression Factor		0.81			1.00			1.00				
Incremental Delay, d2		0.4			0.1			0.1				
Delay (s)		17.1			20.8			16.0				
Level of Service		B			C			B				
Approach Delay (s)		17.1			20.8			16.0			0.0	
Approach LOS		B			C			B			A	

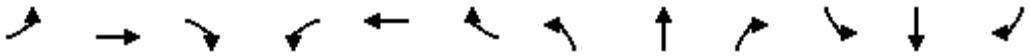
Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	1	0	0	1	9	3	266	21	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	64	1	0	0	1	10	3	296	23	0	0	0
Pedestrians		9			13							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		1			1							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	174	348	9	327	336	172	9			332		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	174	348	9	327	336	172	9			332		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	100	100	100	99	100			100		
cM capacity (veh/h)	745	568	1069	590	576	838	1612			1225		

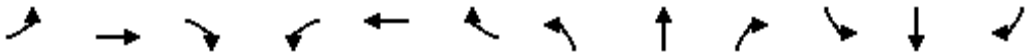
Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	66	11	151	171
Volume Left	64	0	3	0
Volume Right	0	10	0	23
cSH	741	802	1612	1700
Volume to Capacity	0.09	0.01	0.00	0.10
Queue Length 95th (ft)	7	1	0	0
Control Delay (s)	10.3	9.6	0.2	0.0
Lane LOS	B	A	A	
Approach Delay (s)	10.3	9.6	0.1	
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	26.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	127	0	19	0	0	0	24	431	1	0	84	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.97	
Flpb, ped/bikes		0.98	1.00				0.98	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.92	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1739	1164				1181	2735			2624	
Flt Permitted		0.76	1.00				0.63	1.00			1.00	
Satd. Flow (perm)		1386	1164				779	2735			2624	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92
Adj. Flow (vph)	135	0	20	0	0	0	26	459	1	0	89	110
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	61	0
Lane Group Flow (vph)	0	135	8	0	0	0	26	460	0	0	138	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	2%	0%	33%	0%	0%	0%	50%	32%	0%	0%	49%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		29.0	29.0				31.0	31.0			31.0	
Effective Green, g (s)		29.0	29.0				31.0	31.0			31.0	
Actuated g/C Ratio		0.41	0.41				0.44	0.44			0.44	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		574	482				344	1211			1162	
v/s Ratio Prot								c0.17			0.05	
v/s Ratio Perm		c0.10	0.01				0.03					
v/c Ratio		0.24	0.02				0.08	0.38			0.12	
Uniform Delay, d1		13.3	12.1				11.2	13.1			11.5	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		1.0	0.1				0.4	0.9			0.2	
Delay (s)		14.3	12.2				11.7	14.0			11.7	
Level of Service		B	B				B	B			B	
Approach Delay (s)		14.0			0.0			13.8			11.7	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



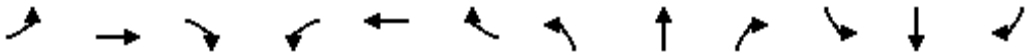
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	234	92	110	536	31	253	50	199	53	20	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1504	3505	1433	1433	3359		1618	1355	1267	1517	1398	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1504	3505	1433	1433	3359		1618	1355	1267	1517	1398	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	246	97	116	564	33	266	53	209	56	21	45
RTOR Reduction (vph)	0	0	78	0	3	0	0	0	168	0	35	0
Lane Group Flow (vph)	5	246	19	116	594	0	157	162	41	56	31	0
Confl. Peds. (#/hr)			20						20			
Heavy Vehicles (%)	20%	3%	8%	26%	3%	68%	6%	76%	24%	19%	50%	9%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	1.0	16.0	16.0	9.9	24.9		16.0	16.0	16.0	18.8	18.8	
Effective Green, g (s)	1.0	16.0	16.0	9.9	24.9		16.0	16.0	16.0	18.8	18.8	
Actuated g/C Ratio	0.01	0.20	0.20	0.12	0.31		0.20	0.20	0.20	0.23	0.23	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	18	694	284	175	1036		320	268	251	353	325	
v/s Ratio Prot	0.00	0.07		c0.08	c0.18		0.10	c0.12		c0.04	0.02	
v/s Ratio Perm			0.01						0.03			
v/c Ratio	0.28	0.35	0.07	0.66	0.57		0.49	0.60	0.17	0.16	0.10	
Uniform Delay, d1	39.5	27.9	26.3	33.8	23.4		28.7	29.5	26.8	24.7	24.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.3	0.3	0.1	9.1	0.8		1.2	3.8	0.3	1.0	0.6	
Delay (s)	47.7	28.2	26.4	42.9	24.2		29.9	33.3	27.1	25.6	24.9	
Level of Service	D	C	C	D	C		C	C	C	C	C	
Approach Delay (s)		28.0			27.2			29.8			25.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	323	72	143	557	167	81	138	290	105	60	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.90		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1433	3232		1626	3438	1495	1444	2823		1612	2725	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1433	3232		1626	3438	1495	1444	2823		1612	2725	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	99	333	74	147	574	172	84	142	299	108	62	24
RTOR Reduction (vph)	0	20	0	0	0	142	0	252	0	0	20	0
Lane Group Flow (vph)	99	387	0	147	574	30	84	189	0	108	66	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			3									
Heavy Vehicles (%)	26%	8%	10%	11%	5%	8%	25%	23%	11%	12%	18%	50%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.30	0.30		0.18	0.18	0.18	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	432	976		287	608	264	225	441		251	425	
v/s Ratio Prot	0.07	c0.12		0.09	c0.17		0.06	c0.07		c0.07	0.02	
v/s Ratio Perm						0.02						
v/c Ratio	0.23	0.40		0.51	0.94	0.12	0.37	0.43		0.43	0.15	
Uniform Delay, d1	25.1	26.6		35.7	39.0	33.2	36.3	36.6		36.6	35.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	1.2		6.4	25.0	0.9	4.7	3.0		5.3	0.8	
Delay (s)	26.4	27.8		42.1	64.1	34.1	41.0	39.6		41.9	35.8	
Level of Service	C	C		D	E	C	D	D		D	D	
Approach Delay (s)		27.5			54.7			39.9			39.2	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	66	640	40	18	699	10	32	0	13	2	4	171
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	71	688	43	19	752	11	34	0	14	2	4	184
Pedestrians								2			2	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1120			405							
pX, platoon unblocked	0.92						0.92	0.92		0.92	0.92	0.92
vC, conflicting volume	764			733			1454	1657	368	1298	1673	383
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	558			733			1311	1532	368	1140	1550	141
tC, single (s)	4.9			4.1			7.9	6.5	7.1	7.5	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.6			2.2			3.7	4.0	3.4	3.5	4.0	3.4
p0 queue free %	90			98			44	100	98	98	95	76
cM capacity (veh/h)	720			879			61	95	611	128	92	780

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	415	387	395	387	48	190
Volume Left	71	0	19	0	34	2
Volume Right	0	43	0	11	14	184
cSH	720	1700	879	1700	83	636
Volume to Capacity	0.10	0.23	0.02	0.23	0.58	0.30
Queue Length 95th (ft)	8	0	2	0	65	31
Control Delay (s)	2.9	0.0	0.7	0.0	96.5	13.1
Lane LOS	A		A		F	B
Approach Delay (s)	1.5		0.4		96.5	13.1
Approach LOS					F	B

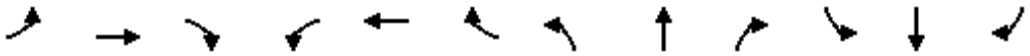
Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	150	0	0	0	0	488
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	155	0	0	0	0	503
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	252	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	252	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	100			100	
cM capacity (veh/h)	710	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	77	77	252	252
Volume Left	77	77	0	0
Volume Right	0	0	0	0
cSH	710	710	1700	1700
Volume to Capacity	0.11	0.11	0.15	0.15
Queue Length 95th (ft)	9	9	0	0
Control Delay (s)	10.7	10.7	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	10.7		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	483	72	95	490	0	0	0	0	111	370	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.91		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.98		1.00	1.00						0.96	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		4816		1770	3471						3370	
Flt Permitted		1.00		0.40	1.00						0.99	
Satd. Flow (perm)		4816		745	3471						3370	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	503	75	99	510	0	0	0	0	116	385	154
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	27	0
Lane Group Flow (vph)	0	560	0	99	510	0	0	0	0	0	628	0
Confl. Peds. (#/hr)										7		3
Confl. Bikes (#/hr)						1						36
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		51.0		51.0	51.0						49.0	
Effective Green, g (s)		51.0		51.0	51.0						49.0	
Actuated g/C Ratio		0.46		0.46	0.46						0.45	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		2232		345	1609						1501	
v/s Ratio Prot		0.12			c0.15							
v/s Ratio Perm				0.13							0.19	
v/c Ratio		0.25		0.29	0.32						0.42	
Uniform Delay, d1		17.9		18.3	18.5						20.8	
Progression Factor		1.00		0.47	0.46						1.00	
Incremental Delay, d2		0.3		2.0	0.5						0.9	
Delay (s)		18.2		10.6	9.0						21.7	
Level of Service		B		B	A						C	
Approach Delay (s)		18.2			9.2			0.0			21.7	
Approach LOS		B			A			A			C	

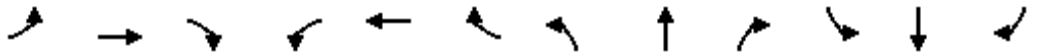
Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	65	7	4	1	0	0	0	0	6	421	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	70	8	4	1	0	0	0	0	6	453	2
Pedestrians		3						1				
Lane Width (ft)		12.0						0.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	470	470	231	283	471	0	458			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	470	470	231	283	471	0	458			0		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	86	99	99	100	100	100			100		
cM capacity (veh/h)	459	492	775	573	491	1091	1111			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	77	5	233	228
Volume Left	0	4	6	0
Volume Right	8	0	0	2
cSH	510	555	1636	1700
Volume to Capacity	0.15	0.01	0.00	0.13
Queue Length 95th (ft)	13	1	0	0
Control Delay (s)	13.3	11.6	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	13.3	11.6	0.1	
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	22.8%	ICU Level of Service	A	
Analysis Period (min)	15			



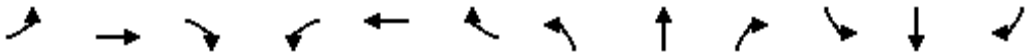
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	88	0	0	99	118	96	278	83	82	0	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.92		1.00	0.97		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1160	3195			2745		1014	2882		1570		2349
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1160	3195			2745		1014	2882		1570		2349
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	139	98	0	0	110	131	107	309	92	91	0	201
RTOR Reduction (vph)	0	0	0	0	115	0	0	20	0	0	0	173
Lane Group Flow (vph)	139	98	0	0	126	0	96	392	0	91	0	28
Confl. Peds. (#/hr)							4					4
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	40%	13%	0%	0%	18%	21%	62%	15%	13%	15%	0%	21%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	13.9	13.9			8.5		17.2	17.2		9.5		9.5
Effective Green, g (s)	13.9	13.9			8.5		17.2	17.2		9.5		9.5
Actuated g/C Ratio	0.20	0.20			0.12		0.25	0.25		0.14		0.14
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	233	642			337		252	717		215		322
v/s Ratio Prot	c0.12	0.03			c0.05		0.09	c0.14		c0.06		0.01
v/s Ratio Perm												
v/c Ratio	0.60	0.15			0.37		0.38	0.55		0.42		0.09
Uniform Delay, d1	25.1	22.7			27.9		21.5	22.6		27.3		26.0
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	4.1	0.1			0.7		4.3	3.0		1.3		0.1
Delay (s)	29.1	22.9			28.6		25.9	25.5		28.6		26.1
Level of Service	C	C			C		C	C		C		C
Approach Delay (s)		26.5			28.6			25.6			26.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	174	32	25	53	78	5	201	138	186	112	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	165	191	35	27	58	86	5	221	152	204	123	0
RTOR Reduction (vph)	0	0	24	0	0	75	0	104	0	0	0	0
Lane Group Flow (vph)	165	191	11	27	58	11	5	269	0	204	123	0
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	45%	52%	94%	63%	64%	50%	80%	79%	62%	50%	93%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Effective Green, g (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Actuated g/C Ratio	0.32	0.32	0.32	0.12	0.12	0.12	0.24	0.24		0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	404	771	270	138	275	132	242	476		170	264	
v/s Ratio Prot	c0.13	c0.08		0.02	0.03		0.00	c0.14		c0.17	0.07	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.41	0.25	0.04	0.20	0.21	0.08	0.02	0.57		1.20	0.47	
Uniform Delay, d1	31.5	29.7	27.7	47.1	47.2	46.4	34.7	40.0		51.5	47.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	0.8	0.3	3.1	1.7	1.2	0.2	4.8		133.0	5.8	
Delay (s)	34.6	30.5	28.0	50.2	48.9	47.6	34.8	44.8		184.5	53.1	
Level of Service	C	C	C	D	D	D	C	D		F	D	
Approach Delay (s)		32.0			48.5			44.6			135.1	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	64.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	498	43	59	590	50	29	196	54	62	181	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.91			0.91			0.95			0.95	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.97			0.97	
Flt Protected		0.99			1.00			0.99			0.99	
Satd. Flow (prot)		4858			4994			3362			3282	
Flt Permitted		0.80			0.83			0.90			0.84	
Satd. Flow (perm)		3911			4170			3046			2797	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	524	45	62	621	53	31	206	57	65	191	77
RTOR Reduction (vph)	0	14	0	0	14	0	0	21	0	0	28	0
Lane Group Flow (vph)	0	619	0	0	722	0	0	273	0	0	305	0
Confl. Peds. (#/hr)	20		12	12		20	17		11	11		17
Confl. Bikes (#/hr)			10			8			12			9
Heavy Vehicles (%)	2%	5%	7%	2%	2%	2%	2%	3%	4%	2%	3%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		19.5			19.5			33.5			33.5	
Effective Green, g (s)		19.5			19.5			33.5			33.5	
Actuated g/C Ratio		0.31			0.31			0.53			0.53	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1210			1290			1619			1487	
v/s Ratio Prot												
v/s Ratio Perm		0.16			c0.17			0.09			c0.11	
v/c Ratio		0.51			0.56			0.17			0.21	
Uniform Delay, d1		17.8			18.2			7.6			7.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.5			0.2			0.3	
Delay (s)		18.2			18.7			7.8			8.1	
Level of Service		B			B			A			A	
Approach Delay (s)		18.2			18.7			7.8			8.1	
Approach LOS		B			B			A			A	

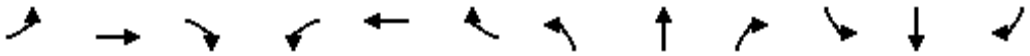
Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	146	9	4	601	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	0	0	151	9	4	620	0	0	0	0
Pedestrians		16			1						3	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	422	645	16	629	645	314	16			621		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	422	645	16	629	645	314	16			621		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	62	99	100			100		
cM capacity (veh/h)	359	392	1066	370	392	687	1615			969		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	100	59	211	413
Volume Left	0	0	4	0
Volume Right	0	9	0	0
cSH	392	420	1615	1700
Volume to Capacity	0.26	0.14	0.00	0.24
Queue Length 95th (ft)	25	12	0	0
Control Delay (s)	17.3	15.0	0.2	0.0
Lane LOS	C	B	A	
Approach Delay (s)	16.4		0.1	
Approach LOS	C			

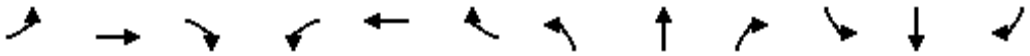
Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	28.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	255	338	0	0	493	102	91	407	111	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.91			0.91			0.95				
Frpb, ped/bikes		1.00			1.00			0.99				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.97			0.97				
Flt Protected		0.98			1.00			0.99				
Satd. Flow (prot)		4789			4872			3350				
Flt Permitted		0.67			1.00			0.99				
Satd. Flow (perm)		3253			4872			3350				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	266	352	0	0	514	106	95	424	116	0	0	0
RTOR Reduction (vph)	0	0	0	0	28	0	0	17	0	0	0	0
Lane Group Flow (vph)	0	618	0	0	592	0	0	618	0	0	0	0
Confl. Peds. (#/hr)	2					2			4	4		
Confl. Bikes (#/hr)			1						44			
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)		51.0			51.0			49.0				
Effective Green, g (s)		51.0			51.0			49.0				
Actuated g/C Ratio		0.46			0.46			0.45				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		1508			2258			1492				
v/s Ratio Prot					0.12							
v/s Ratio Perm		c0.19						0.18				
v/c Ratio		0.41			0.26			0.41				
Uniform Delay, d1		19.5			18.0			20.7				
Progression Factor		0.53			1.00			1.00				
Incremental Delay, d2		0.8			0.3			0.2				
Delay (s)		11.2			18.3			20.9				
Level of Service		B			B			C				
Approach Delay (s)		11.2			18.3			20.9			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

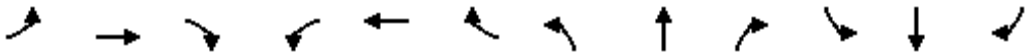
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	65	0	0	0	1	4	5	540	2	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	70	0	0	0	1	4	5	581	2	0	0	0
Pedestrians		12			1						1	
Lane Width (ft)		12.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	319	607	12	593	605	293	12			584		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	319	607	12	593	605	293	12			584		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	100	100	100	100	99	100			100		
cM capacity (veh/h)	578	408	1061	389	409	708	1604			1000		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	70	5	296	292
Volume Left	70	0	5	0
Volume Right	0	4	0	2
cSH	578	618	1604	1700
Volume to Capacity	0.12	0.01	0.00	0.17
Queue Length 95th (ft)	10	1	0	0
Control Delay (s)	12.1	10.9	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	12.1	10.9	0.1	
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	32.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	0	46	0	0	0	41	108	0	0	54	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.95	
Flpb, ped/bikes		0.98	1.00				0.98	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.88	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1773	1549				1516	3471			2951	
Flt Permitted		0.76	1.00				0.58	1.00			1.00	
Satd. Flow (perm)		1414	1549				928	3471			2951	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	256	0	52	0	0	0	47	123	0	0	61	216
RTOR Reduction (vph)	0	0	30	0	0	0	0	0	0	0	123	0
Lane Group Flow (vph)	0	256	22	0	0	0	47	123	0	0	154	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	17%	4%	0%	0%	13%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		30.0	30.0				30.0	30.0			30.0	
Effective Green, g (s)		30.0	30.0				30.0	30.0			30.0	
Actuated g/C Ratio		0.43	0.43				0.43	0.43			0.43	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		606	663				397	1487			1264	
v/s Ratio Prot								0.04			c0.05	
v/s Ratio Perm		c0.18	0.01				0.05					
v/c Ratio		0.42	0.03				0.12	0.08			0.12	
Uniform Delay, d1		14.0	11.6				12.0	11.8			12.1	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		2.2	0.1				0.6	0.1			0.2	
Delay (s)		16.1	11.7				12.6	12.0			12.3	
Level of Service		B	B				B	B			B	
Approach Delay (s)		15.4			0.0			12.1			12.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	165	73	156	483	20	84	12	208	34	11	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1357	3471	1460	1687	3409		1649	1506	1451	1433	1342	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1357	3471	1460	1687	3409		1649	1506	1451	1433	1342	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	179	79	170	525	22	91	13	226	37	12	18
RTOR Reduction (vph)	0	0	63	0	2	0	0	0	129	0	17	0
Lane Group Flow (vph)	27	179	16	170	545	0	52	52	97	37	13	0
Confl. Peds. (#/hr)			20						20			
Heavy Vehicles (%)	33%	4%	6%	7%	4%	35%	4%	50%	8%	26%	45%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	3.0	18.4	18.4	8.2	23.6		40.0	40.0	40.0	6.6	6.6	
Effective Green, g (s)	3.0	18.4	18.4	8.2	23.6		40.0	40.0	40.0	6.6	6.6	
Actuated g/C Ratio	0.03	0.20	0.20	0.09	0.25		0.43	0.43	0.43	0.07	0.07	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	43	685	288	148	863		707	646	622	101	95	
v/s Ratio Prot	0.02	0.05		c0.10	c0.16		0.03	0.03		c0.03	0.01	
v/s Ratio Perm			0.01						c0.07			
v/c Ratio	0.63	0.26	0.05	1.15	0.63		0.07	0.08	0.16	0.37	0.14	
Uniform Delay, d1	44.5	31.6	30.3	42.5	30.9		15.7	15.7	16.3	41.3	40.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	25.3	0.2	0.1	119.5	1.5		0.2	0.2	0.5	2.2	0.7	
Delay (s)	69.8	31.9	30.4	162.0	32.4		15.9	16.0	16.8	43.6	41.3	
Level of Service	E	C	C	F	C		B	B	B	D	D	
Approach Delay (s)		35.1			63.2			16.5			42.6	
Approach LOS		D			E			B			D	

Intersection Summary			
HCM 2000 Control Delay	45.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	93.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	260	61	110	548	189	85	85	127	93	69	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	3309		1703	3505	1543	1583	3042		1736	2796	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1626	3309		1703	3505	1543	1583	3042		1736	2796	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	63	277	65	117	583	201	90	90	135	99	73	40
RTOR Reduction (vph)	0	21	0	0	0	165	0	114	0	0	34	0
Lane Group Flow (vph)	63	321	0	117	583	36	90	111	0	99	79	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1			3						
Heavy Vehicles (%)	11%	4%	13%	6%	3%	3%	14%	5%	10%	4%	12%	41%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.30	0.30		0.18	0.18	0.18	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	491	999		301	620	273	247	475		271	436	
v/s Ratio Prot	0.04	c0.10		0.07	c0.17		c0.06	0.04		c0.06	0.03	
v/s Ratio Perm						0.02						
v/c Ratio	0.13	0.32		0.39	0.94	0.13	0.36	0.23		0.37	0.18	
Uniform Delay, d1	24.3	25.9		34.9	39.0	33.3	36.2	35.5		36.2	35.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.9		3.8	24.1	1.0	4.1	1.2		3.8	0.9	
Delay (s)	24.9	26.7		38.7	63.1	34.3	40.4	36.6		40.0	36.1	
Level of Service	C	C		D	E	C	D	D		D	D	
Approach Delay (s)		26.5			53.5			37.7			37.9	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	465	33	18	727	5	43	4	23	3	10	90
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	24	479	34	19	749	5	44	4	24	3	10	93
Pedestrians		2										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		4.0										
Percent Blockage		0										
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1120			405							
pX, platoon unblocked	0.91						0.91	0.91		0.91	0.91	0.91
vC, conflicting volume	755			513			1056	1336	257	1102	1350	379
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	530			513			861	1169	257	912	1185	117
tC, single (s)	4.9			4.2			7.5	6.5	7.0	8.2	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.6			2.3			3.5	4.0	3.3	3.8	4.0	3.3
p0 queue free %	97			98			76	98	97	98	94	89
cM capacity (veh/h)	727			1014			184	168	736	154	165	825

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	263	274	393	380	72	106
Volume Left	24	0	19	0	44	3
Volume Right	0	34	0	5	24	93
cSH	727	1700	1014	1700	242	544
Volume to Capacity	0.03	0.16	0.02	0.22	0.30	0.20
Queue Length 95th (ft)	3	0	1	0	30	18
Control Delay (s)	1.3	0.0	0.6	0.0	26.0	13.2
Lane LOS	A		A		D	B
Approach Delay (s)	0.6		0.3		26.0	13.2
Approach LOS					D	B

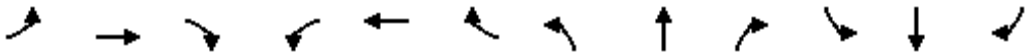
Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	50.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	131	0	0	0	0	452
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	151	0	0	0	0	520
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	260	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	260	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	100			100	
cM capacity (veh/h)	699	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	75	75	260	260
Volume Left	75	75	0	0
Volume Right	0	0	0	0
cSH	699	699	1700	1700
Volume to Capacity	0.11	0.11	0.15	0.15
Queue Length 95th (ft)	9	9	0	0
Control Delay (s)	10.8	10.8	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	10.8		0.0	
Approach LOS	B			

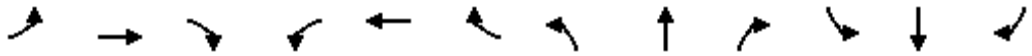
Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	304	77	110	475	0	0	0	0	93	295	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.91		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.97		1.00	1.00						0.95	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		4711		1766	3539						3251	
Flt Permitted		1.00		0.50	1.00						0.99	
Satd. Flow (perm)		4711		924	3539						3251	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	323	82	117	505	0	0	0	0	99	314	202
RTOR Reduction (vph)	0	41	0	0	0	0	0	0	0	0	54	0
Lane Group Flow (vph)	0	364	0	117	505	0	0	0	0	0	561	0
Confl. Peds. (#/hr)			4	4						4		2
Confl. Bikes (#/hr)			3			2						21
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		46.0		46.0	46.0						54.0	
Effective Green, g (s)		46.0		46.0	46.0						54.0	
Actuated g/C Ratio		0.42		0.42	0.42						0.49	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		1970		386	1479						1595	
v/s Ratio Prot		0.08			c0.14							
v/s Ratio Perm				0.13							0.17	
v/c Ratio		0.18		0.30	0.34						0.35	
Uniform Delay, d1		20.2		21.3	21.7						17.2	
Progression Factor		1.00		0.34	0.33						1.00	
Incremental Delay, d2		0.2		0.4	0.1						0.6	
Delay (s)		20.4		7.7	7.4						17.8	
Level of Service		C		A	A						B	
Approach Delay (s)		20.4			7.5			0.0			17.8	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

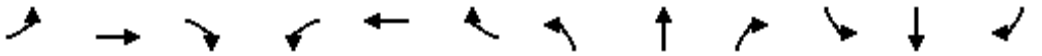
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	59	14	5	0	0	0	0	0	25	343	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	66	16	6	0	0	0	0	0	28	381	11
Pedestrians								1				
Lane Width (ft)								0.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	442	442	197	295	448	0	392			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	442	442	197	295	448	0	392			0		
tC, single (s)	7.7	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	100	87	98	99	100	100	100			98		
cM capacity (veh/h)	479	504	817	544	500	1091	1177			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	81	6	218	202
Volume Left	0	6	28	0
Volume Right	16	0	0	11
cSH	544	544	1636	1700
Volume to Capacity	0.15	0.01	0.02	0.12
Queue Length 95th (ft)	13	1	1	0
Control Delay (s)	12.8	11.7	1.0	0.0
Lane LOS	B	B	A	
Approach Delay (s)	12.8	11.7	0.5	
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	21.5%	ICU Level of Service	A	
Analysis Period (min)	15			

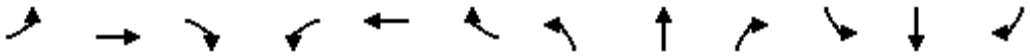


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	29	0	0	133	121	72	151	128	66	0	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.93		1.00	0.93		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1624	3471			3075		1441	2982		1543		2682
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1624	3471			3075		1441	2982		1543		2682
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	18	33	0	0	153	139	83	174	147	76	0	208
RTOR Reduction (vph)	0	0	0	0	118	0	0	96	0	0	0	192
Lane Group Flow (vph)	18	33	0	0	174	0	75	233	0	76	0	16
Confl. Peds. (#/hr)	6					6						
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	0%	4%	0%	0%	9%	7%	14%	7%	9%	17%	0%	6%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	3.5	3.5			8.1		18.4	18.4		4.1		4.1
Effective Green, g (s)	3.5	3.5			8.1		18.4	18.4		4.1		4.1
Actuated g/C Ratio	0.07	0.07			0.15		0.35	0.35		0.08		0.08
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	107	228			469		499	1033		119		207
v/s Ratio Prot	c0.01	0.01			c0.06		0.05	c0.08		c0.05		0.01
v/s Ratio Perm												
v/c Ratio	0.17	0.14			0.37		0.15	0.23		0.64		0.08
Uniform Delay, d1	23.4	23.4			20.2		12.0	12.3		23.8		22.7
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	0.7	0.3			0.5		0.6	0.5		10.7		0.2
Delay (s)	24.2	23.7			20.7		12.6	12.8		34.5		22.9
Level of Service	C	C			C		B	B		C		C
Approach Delay (s)		23.9			20.7			12.8			26.0	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	27	1	14	27	76	0	8	23	67	11	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	793	1357	3471	1328		2621		1703	2362	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	793	1357	3471	1328		2621		1703	2362	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	12	33	1	17	33	93	0	10	28	82	13	1
RTOR Reduction (vph)	0	0	1	0	0	59	0	21	0	0	1	0
Lane Group Flow (vph)	12	33	0	17	33	34	0	17	0	82	13	0
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			4			2						3
Heavy Vehicles (%)	0%	0%	100%	33%	4%	20%	0%	38%	17%	6%	55%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	10.0	39.0	39.0	15.0	44.0	44.0		30.0		16.0	42.0	
Effective Green, g (s)	10.0	39.0	39.0	15.0	44.0	44.0		30.0		16.0	42.0	
Actuated g/C Ratio	0.08	0.32	0.32	0.12	0.37	0.37		0.25		0.13	0.35	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Grp Cap (vph)	150	1173	257	169	1272	486		655		227	826	
v/s Ratio Prot	0.01	0.01		c0.01	0.01			c0.01		c0.05	0.01	
v/s Ratio Perm			0.00			c0.03						
v/c Ratio	0.08	0.03	0.00	0.10	0.03	0.07		0.03		0.36	0.02	
Uniform Delay, d1	50.8	27.6	27.3	46.5	24.3	24.7		34.0		47.3	25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.0	0.0	1.2	0.0	0.3		0.1		4.4	0.0	
Delay (s)	51.8	27.6	27.4	47.7	24.3	25.0		34.0		51.8	25.5	
Level of Service	D	C	C	D	C	C		C		D	C	
Approach Delay (s)		33.9			27.5			34.0			47.9	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	374	19	45	516	48	35	98	35	60	129	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.91			0.91			0.95			0.95	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.97			0.95	
Flt Protected		0.99			1.00			0.99			0.99	
Satd. Flow (prot)		4949			4969			3444			3301	
Flt Permitted		0.78			0.87			0.87			0.87	
Satd. Flow (perm)		3891			4342			3029			2888	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	71	378	19	45	521	48	35	99	35	61	130	87
RTOR Reduction (vph)	0	7	0	0	17	0	0	16	0	0	39	0
Lane Group Flow (vph)	0	461	0	0	597	0	0	153	0	0	239	0
Confl. Peds. (#/hr)	6		3	3		6	6		5	5		6
Confl. Bikes (#/hr)			15			13			14			11
Heavy Vehicles (%)	0%	4%	0%	0%	3%	0%	0%	0%	0%	2%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.8			16.8			33.7			33.7	
Effective Green, g (s)		16.8			16.8			33.7			33.7	
Actuated g/C Ratio		0.28			0.28			0.56			0.56	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1080			1205			1687			1608	
v/s Ratio Prot												
v/s Ratio Perm		0.12			c0.14			0.05			c0.08	
v/c Ratio		0.43			0.50			0.09			0.15	
Uniform Delay, d1		17.9			18.3			6.3			6.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.3			0.1			0.2	
Delay (s)		18.2			18.6			6.4			6.7	
Level of Service		B			B			A			A	
Approach Delay (s)		18.2			18.6			6.4			6.7	
Approach LOS		B			B			A			A	

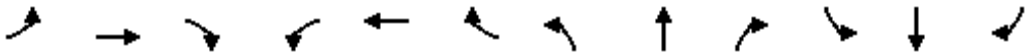
Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	128	7	3	345	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	0	0	147	8	3	397	0	0	0	0
Pedestrians		3			3						2	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	292	409	3	406	409	203	3			400		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	292	409	3	406	409	203	3			400		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	72	99	100			100		
cM capacity (veh/h)	499	532	1086	519	532	808	1632			1167		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	98	57	136	264
Volume Left	0	0	3	0
Volume Right	0	8	0	0
cSH	532	559	1632	1700
Volume to Capacity	0.18	0.10	0.00	0.16
Queue Length 95th (ft)	17	8	0	0
Control Delay (s)	13.3	12.2	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	12.9		0.1	
Approach LOS	B			

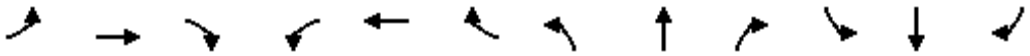
Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	22.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	133	264	0	0	514	64	72	210	78	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.91			0.91			0.95				
Frpb, ped/bikes		1.00			1.00			0.99				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.98			0.97				
Flt Protected		0.98			1.00			0.99				
Satd. Flow (prot)		4828			4993			3392				
Flt Permitted		0.68			1.00			0.99				
Satd. Flow (perm)		3324			4993			3392				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	141	281	0	0	547	68	77	223	83	0	0	0
RTOR Reduction (vph)	0	0	0	0	14	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	422	0	0	601	0	0	360	0	0	0	0
Confl. Peds. (#/hr)	1					1			8			
Confl. Bikes (#/hr)			2			2			27			
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)		46.0			46.0			54.0				
Effective Green, g (s)		46.0			46.0			54.0				
Actuated g/C Ratio		0.42			0.42			0.49				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		1390			2087			1665				
v/s Ratio Prot					0.12							
v/s Ratio Perm		c0.13						0.11				
v/c Ratio		0.30			0.29			0.22				
Uniform Delay, d1		21.3			21.2			15.9				
Progression Factor		0.63			1.00			1.00				
Incremental Delay, d2		0.6			0.1			0.1				
Delay (s)		14.0			21.2			16.0				
Level of Service		B			C			B				
Approach Delay (s)		14.0			21.2			16.0			0.0	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

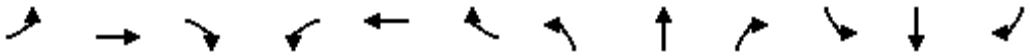
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	1	0	0	1	9	3	274	21	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	64	1	0	0	1	10	3	304	23	0	0	0
Pedestrians		9			13							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		1			1							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	178	356	9	336	345	177	9			341		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	178	356	9	336	345	177	9			341		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	100	100	100	99	100			100		
cM capacity (veh/h)	739	561	1069	582	570	833	1612			1216		

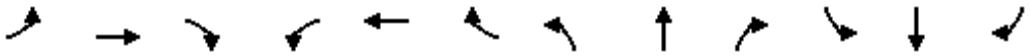
Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	66	11	156	176
Volume Left	64	0	3	0
Volume Right	0	10	0	23
cSH	735	796	1612	1700
Volume to Capacity	0.09	0.01	0.00	0.10
Queue Length 95th (ft)	7	1	0	0
Control Delay (s)	10.4	9.6	0.2	0.0
Lane LOS	B	A	A	
Approach Delay (s)	10.4	9.6	0.1	
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	26.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	0	8	0	0	0	5	552	1	0	108	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.99				1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.98	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1767	1199				1202	2735			2463	
Flt Permitted		0.76	1.00				0.67	1.00			1.00	
Satd. Flow (perm)		1408	1199				849	2735			2463	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92
Adj. Flow (vph)	88	0	9	0	0	0	5	587	1	0	115	13
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	88	4	0	0	0	5	588	0	0	121	0
Confl. Peds. (#/hr)	2		1	1		2	1		2	2		1
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	0%	33%	0%	0%	0%	50%	32%	0%	0%	49%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		29.0	29.0				31.0	31.0			31.0	
Effective Green, g (s)		29.0	29.0				31.0	31.0			31.0	
Actuated g/C Ratio		0.41	0.41				0.44	0.44			0.44	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		583	496				375	1211			1090	
v/s Ratio Prot								c0.21			0.05	
v/s Ratio Perm		c0.06	0.00				0.01					
v/c Ratio		0.15	0.01				0.01	0.49			0.11	
Uniform Delay, d1		12.8	12.0				10.9	13.8			11.4	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		0.5	0.0				0.1	1.4			0.2	
Delay (s)		13.4	12.1				11.0	15.2			11.6	
Level of Service		B	B				B	B			B	
Approach Delay (s)		13.2			0.0			15.2			11.6	
Approach LOS		B			A			B			B	

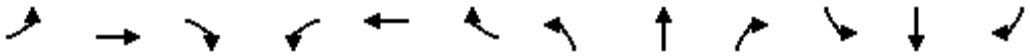
Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	300	90	50	686	40	310	64	189	68	26	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1504	3505	1495	1433	3359		1618	1346	1302	1517	1398	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1504	3505	1495	1433	3359		1618	1346	1302	1517	1398	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	316	95	53	722	42	326	67	199	72	27	58
RTOR Reduction (vph)	0	0	71	0	3	0	0	0	155	0	45	0
Lane Group Flow (vph)	6	316	24	53	761	0	196	197	44	72	40	0
Heavy Vehicles (%)	20%	3%	8%	26%	3%	68%	6%	76%	24%	19%	50%	9%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	1.0	20.8	20.8	5.6	25.4		18.7	18.7	18.7	18.8	18.8	
Effective Green, g (s)	1.0	20.8	20.8	5.6	25.4		18.7	18.7	18.7	18.8	18.8	
Actuated g/C Ratio	0.01	0.25	0.25	0.07	0.30		0.22	0.22	0.22	0.22	0.22	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	17	868	370	95	1016		360	300	290	339	313	
v/s Ratio Prot	0.00	0.09		c0.04	c0.23		0.12	c0.15		c0.05	0.03	
v/s Ratio Perm			0.02						0.03			
v/c Ratio	0.35	0.36	0.06	0.56	0.75		0.54	0.66	0.15	0.21	0.13	
Uniform Delay, d1	41.1	26.1	24.1	38.0	26.4		28.8	29.7	26.2	26.5	26.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.2	0.3	0.1	6.9	3.1		1.7	5.1	0.2	1.4	0.8	
Delay (s)	53.3	26.3	24.2	44.9	29.4		30.5	34.8	26.5	27.9	26.8	
Level of Service	D	C	C	D	C		C	C	C	C	C	
Approach Delay (s)		26.2			30.4			30.6			27.3	
Approach LOS		C			C			C			C	

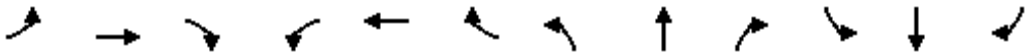
Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	83.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	362	88	183	640	214	99	177	371	134	77	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.90		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1433	3223		1626	3438	1495	1444	2823		1612	2822	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1433	3223		1626	3438	1495	1444	2823		1612	2822	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	116	373	91	189	660	221	102	182	382	138	79	19
RTOR Reduction (vph)	0	22	0	0	0	182	0	322	0	0	16	0
Lane Group Flow (vph)	116	442	0	189	660	39	102	242	0	138	82	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			3									
Heavy Vehicles (%)	26%	8%	10%	11%	5%	8%	25%	23%	11%	12%	18%	50%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.30	0.30		0.18	0.18	0.18	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	432	973		287	608	264	225	441		251	440	
v/s Ratio Prot	0.08	c0.14		0.12	c0.19		0.07	c0.09		c0.09	0.03	
v/s Ratio Perm						0.03						
v/c Ratio	0.27	0.45		0.66	1.09	0.15	0.45	0.55		0.55	0.19	
Uniform Delay, d1	25.4	27.1		36.8	39.5	33.4	36.8	37.4		37.4	35.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	1.5		11.3	61.9	1.2	6.5	4.8		8.4	0.9	
Delay (s)	27.0	28.6		48.1	101.4	34.6	43.2	42.2		45.8	36.1	
Level of Service	C	C		D	F	C	D	D		D	D	
Approach Delay (s)		28.3			78.2			42.4			41.8	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	54.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	97	768	51	23	822	13	41	0	17	3	5	197
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	104	826	55	25	884	14	44	0	18	3	5	212
Pedestrians								2			2	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1120			405							
pX, platoon unblocked	0.90						0.90	0.90		0.90	0.90	0.90
vC, conflicting volume	900			883			1770	2013	442	1582	2034	451
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	659			883			1629	1900	442	1419	1923	158
tC, single (s)	4.9			4.1			7.9	6.5	7.1	7.5	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.6			2.2			3.7	4.0	3.4	3.5	4.0	3.4
p0 queue free %	84			97			0	100	97	96	89	72
cM capacity (veh/h)	636			774			28	51	546	73	49	744

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	517	468	467	456	62	220
Volume Left	104	0	25	0	44	3
Volume Right	0	55	0	14	18	212
cSH	636	1700	774	1700	39	502
Volume to Capacity	0.16	0.28	0.03	0.27	1.58	0.44
Queue Length 95th (ft)	15	0	2	0	162	55
Control Delay (s)	4.4	0.0	0.9	0.0	514.4	17.6
Lane LOS	A		A		F	C
Approach Delay (s)	2.3		0.5		514.4	17.6
Approach LOS					F	C

Intersection Summary				
Average Delay	17.7			
Intersection Capacity Utilization	78.8%	ICU Level of Service	D	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	192	0	0	0	0	614
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	198	0	0	0	0	633
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	316	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	316	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	69	100			100	
cM capacity (veh/h)	646	1091			1636	

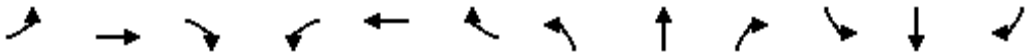
Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	99	99	316	316
Volume Left	99	99	0	0
Volume Right	0	0	0	0
cSH	646	646	1700	1700
Volume to Capacity	0.15	0.15	0.19	0.19
Queue Length 95th (ft)	13	13	0	0
Control Delay (s)	11.6	11.6	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	11.6		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	570	88	122	563	0	0	0	0	142	474	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.91		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.98		1.00	1.00						0.97	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		4813		1770	3471						3376	
Flt Permitted		1.00		0.35	1.00						0.99	
Satd. Flow (perm)		4813		643	3471						3376	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	594	92	127	586	0	0	0	0	148	494	186
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	24	0
Lane Group Flow (vph)	0	667	0	127	586	0	0	0	0	0	804	0
Confl. Peds. (#/hr)										7		3
Confl. Bikes (#/hr)						1						36
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		51.0		51.0	51.0						49.0	
Effective Green, g (s)		51.0		51.0	51.0						49.0	
Actuated g/C Ratio		0.46		0.46	0.46						0.45	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		2231		298	1609						1503	
v/s Ratio Prot		0.14			0.17							
v/s Ratio Perm				c0.20							0.24	
v/c Ratio		0.30		0.43	0.36						0.53	
Uniform Delay, d1		18.4		19.7	19.0						22.2	
Progression Factor		1.00		0.51	0.46						1.00	
Incremental Delay, d2		0.3		4.2	0.6						1.4	
Delay (s)		18.7		14.2	9.3						23.6	
Level of Service		B		B	A						C	
Approach Delay (s)		18.7			10.2			0.0			23.6	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

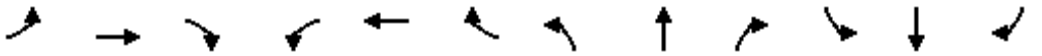
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	83	9	5	1	0	0	0	0	8	535	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	89	10	5	1	0	0	0	0	9	575	3
Pedestrians		3						1				
Lane Width (ft)		12.0						0.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	598	597	293	360	599	0	581			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	598	597	293	360	599	0	581			0		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	79	99	99	100	100	100			99		
cM capacity (veh/h)	370	416	707	471	415	1091	1000			1636		

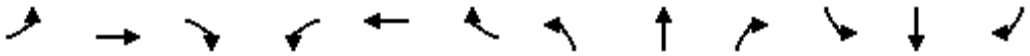
Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	99	6	296	291
Volume Left	0	5	9	0
Volume Right	10	0	0	3
cSH	433	461	1636	1700
Volume to Capacity	0.23	0.01	0.01	0.17
Queue Length 95th (ft)	22	1	0	0
Control Delay (s)	15.8	12.9	0.3	0.0
Lane LOS	C	B	A	
Approach Delay (s)	15.8	12.9	0.1	
Approach LOS	C	B		

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	27.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	98	0	0	109	130	90	317	95	90	0	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.92		1.00	0.97		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1160	3195			2745		1014	2888		1570		2349
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1160	3195			2745		1014	2888		1570		2349
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	159	109	0	0	121	144	100	352	106	100	0	229
RTOR Reduction (vph)	0	0	0	0	126	0	0	21	0	0	0	197
Lane Group Flow (vph)	159	109	0	0	139	0	90	447	0	100	0	32
Confl. Peds. (#/hr)							4					4
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	40%	13%	0%	0%	18%	21%	62%	15%	13%	15%	0%	21%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	15.7	15.7			8.9		17.2	17.2		10.0		10.0
Effective Green, g (s)	15.7	15.7			8.9		17.2	17.2		10.0		10.0
Actuated g/C Ratio	0.22	0.22			0.12		0.24	0.24		0.14		0.14
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	253	698			340		242	691		218		327
v/s Ratio Prot	c0.14	0.03			c0.05		0.09	c0.15		c0.06		0.01
v/s Ratio Perm												
v/c Ratio	0.63	0.16			0.41		0.37	0.65		0.46		0.10
Uniform Delay, d1	25.4	22.7			29.0		22.8	24.6		28.4		27.0
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	4.8	0.1			0.8		4.3	4.6		1.5		0.1
Delay (s)	30.2	22.8			29.8		27.1	29.2		29.9		27.1
Level of Service	C	C			C		C	C		C		C
Approach Delay (s)		27.2			29.8			28.9			28.0	
Approach LOS		C			C			C			C	

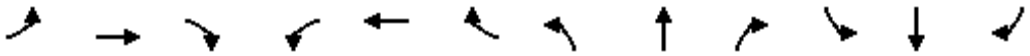
Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	71.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	171	198	36	28	60	66	6	229	157	197	128	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	188	218	40	31	66	73	7	252	173	216	141	0
RTOR Reduction (vph)	0	0	27	0	0	64	0	102	0	0	0	0
Lane Group Flow (vph)	188	218	13	31	66	9	7	323	0	216	141	0
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	45%	52%	94%	63%	64%	50%	80%	79%	62%	50%	93%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Effective Green, g (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Actuated g/C Ratio	0.32	0.32	0.32	0.12	0.12	0.12	0.24	0.24		0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	404	771	270	138	275	132	242	476		170	264	
v/s Ratio Prot	c0.15	c0.09		0.03	0.03		0.01	c0.16		c0.18	0.08	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.47	0.28	0.05	0.22	0.24	0.07	0.03	0.68		1.27	0.53	
Uniform Delay, d1	32.2	30.1	27.8	47.3	47.4	46.3	34.7	41.3		51.5	47.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	0.9	0.3	3.7	2.1	1.0	0.2	7.6		159.7	7.5	
Delay (s)	36.0	31.0	28.1	51.0	49.4	47.3	35.0	48.9		211.2	55.4	
Level of Service	D	C	C	D	D	D	C	D		F	E	
Approach Delay (s)		32.9			48.8			48.7			149.6	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	69.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

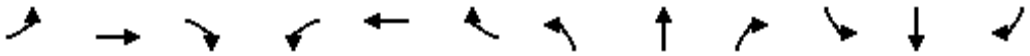
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	618	55	76	709	64	37	251	69	79	232	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.91			0.91			0.95			0.95	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.97			0.97	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		4858			4989			3362			3300	
Flt Permitted		0.80			0.79			0.88			0.81	
Satd. Flow (perm)		3922			3955			2991			2694	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	59	651	58	80	746	67	39	264	73	83	244	86
RTOR Reduction (vph)	0	14	0	0	14	0	0	22	0	0	25	0
Lane Group Flow (vph)	0	754	0	0	879	0	0	354	0	0	388	0
Confl. Peds. (#/hr)	20		12	12		20	17		11	11		17
Confl. Bikes (#/hr)			10			8			12			9
Heavy Vehicles (%)	2%	5%	7%	2%	2%	2%	2%	3%	4%	2%	3%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		23.2			23.2			33.4			33.4	
Effective Green, g (s)		23.2			23.2			33.4			33.4	
Actuated g/C Ratio		0.35			0.35			0.50			0.50	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1366			1377			1499			1351	
v/s Ratio Prot												
v/s Ratio Perm		0.19			c0.22			0.12			c0.14	
v/c Ratio		0.55			0.64			0.24			0.29	
Uniform Delay, d1		17.5			18.2			9.4			9.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.5			1.0			0.4			0.5	
Delay (s)		18.0			19.2			9.8			10.2	
Level of Service		B			B			A			B	
Approach Delay (s)		18.0			19.2			9.8			10.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

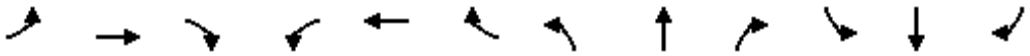
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	187	12	5	763	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	0	0	193	12	5	787	0	0	0	0
Pedestrians		16			1						3	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	531	814	16	798	814	397	16			788		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	531	814	16	798	814	397	16			788		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	38	98	100			100		
cM capacity (veh/h)	216	313	1066	279	313	607	1615			840		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	129	77	267	524
Volume Left	0	0	5	0
Volume Right	0	12	0	0
cSH	313	340	1615	1700
Volume to Capacity	0.41	0.23	0.00	0.31
Queue Length 95th (ft)	48	21	0	0
Control Delay (s)	24.3	18.6	0.2	0.0
Lane LOS	C	C	A	
Approach Delay (s)	22.2		0.1	
Approach LOS	C			

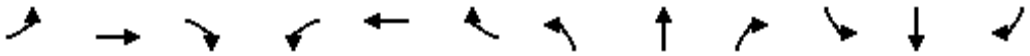
Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	34.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	392	0	0	573	131	111	521	142	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.91			0.91			0.95				
Frpb, ped/bikes		1.00			1.00			0.99				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.97			0.97				
Flt Protected		0.98			1.00			0.99				
Satd. Flow (prot)		4784			4862			3350				
Flt Permitted		0.66			1.00			0.99				
Satd. Flow (perm)		3215			4862			3350				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	333	408	0	0	597	136	116	543	148	0	0	0
RTOR Reduction (vph)	0	0	0	0	34	0	0	18	0	0	0	0
Lane Group Flow (vph)	0	741	0	0	699	0	0	789	0	0	0	0
Confl. Peds. (#/hr)	2					2			4	4		
Confl. Bikes (#/hr)			1						44			
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)		51.0			51.0			49.0				
Effective Green, g (s)		51.0			51.0			49.0				
Actuated g/C Ratio		0.46			0.46			0.45				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		1490			2254			1492				
v/s Ratio Prot					0.14							
v/s Ratio Perm		c0.23						0.24				
v/c Ratio		1.24dl			0.31			0.53				
Uniform Delay, d1		20.6			18.5			22.1				
Progression Factor		0.56			1.00			1.00				
Incremental Delay, d2		1.1			0.4			0.3				
Delay (s)		12.6			18.8			22.5				
Level of Service		B			B			C				
Approach Delay (s)		12.6			18.8			22.5			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

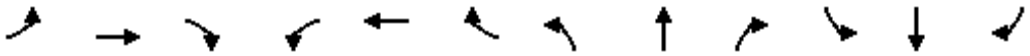
dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	83	0	0	0	1	5	6	686	3	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	89	0	0	0	1	5	6	738	3	0	0	0
Pedestrians		12			1						1	
Lane Width (ft)		12.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	401	767	12	753	765	372	12			742		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	401	767	12	753	765	372	12			742		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	82	100	100	100	100	99	100			100		
cM capacity (veh/h)	503	330	1061	298	331	630	1604			874		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	89	6	375	372
Volume Left	89	0	6	0
Volume Right	0	5	0	3
cSH	503	548	1604	1700
Volume to Capacity	0.18	0.01	0.00	0.22
Queue Length 95th (ft)	16	1	0	0
Control Delay (s)	13.7	11.7	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	13.7	11.7	0.1	
Approach LOS	B	B		

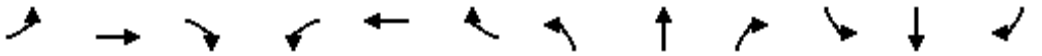
Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	37.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	0	15	0	0	0	8	138	0	0	69	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	1.00				1.00	1.00			0.99	
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.95	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1805	1615				1543	3471			3138	
Flt Permitted		0.76	1.00				0.68	1.00			1.00	
Satd. Flow (perm)		1439	1615				1105	3471			3138	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	95	0	17	0	0	0	9	157	0	0	78	35
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	20	0
Lane Group Flow (vph)	0	95	7	0	0	0	9	157	0	0	93	0
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	17%	4%	0%	0%	13%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		30.0	30.0				30.0	30.0			30.0	
Effective Green, g (s)		30.0	30.0				30.0	30.0			30.0	
Actuated g/C Ratio		0.43	0.43				0.43	0.43			0.43	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		616	692				473	1487			1344	
v/s Ratio Prot								c0.05			0.03	
v/s Ratio Perm		c0.07	0.00				0.01					
v/c Ratio		0.15	0.01				0.02	0.11			0.07	
Uniform Delay, d1		12.2	11.5				11.5	12.0			11.8	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		0.5	0.0				0.1	0.1			0.1	
Delay (s)		12.8	11.5				11.6	12.1			11.9	
Level of Service		B	B				B	B			B	
Approach Delay (s)		12.6			0.0			12.1			11.9	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	19.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



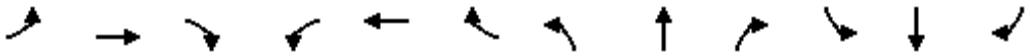
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	211	44	37	618	26	70	15	100	44	14	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1357	3471	1524	1687	3410		1649	1457	1495	1433	1343	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1357	3471	1524	1687	3410		1649	1457	1495	1433	1343	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	229	48	40	672	28	76	16	109	48	15	24
RTOR Reduction (vph)	0	0	35	0	2	0	0	0	64	0	22	0
Lane Group Flow (vph)	35	229	13	40	698	0	46	46	45	48	17	0
Heavy Vehicles (%)	33%	4%	6%	7%	4%	35%	4%	50%	8%	26%	45%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	4.5	26.1	26.1	4.1	25.7		40.9	40.9	40.9	7.3	7.3	
Effective Green, g (s)	4.5	26.1	26.1	4.1	25.7		40.9	40.9	40.9	7.3	7.3	
Actuated g/C Ratio	0.05	0.27	0.27	0.04	0.26		0.42	0.42	0.42	0.07	0.07	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	62	920	404	70	890		685	605	621	106	99	
v/s Ratio Prot	c0.03	0.07		0.02	c0.20		0.03	c0.03		c0.03	0.01	
v/s Ratio Perm			0.01						0.03			
v/c Ratio	0.56	0.25	0.03	0.57	0.78		0.07	0.08	0.07	0.45	0.17	
Uniform Delay, d1	46.0	28.4	26.8	46.3	33.8		17.3	17.3	17.3	43.6	42.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.2	0.1	0.0	10.8	4.6		0.2	0.2	0.2	3.1	0.8	
Delay (s)	57.2	28.6	26.8	57.1	38.3		17.5	17.6	17.6	46.7	43.5	
Level of Service	E	C	C	E	D		B	B	B	D	D	
Approach Delay (s)		31.5			39.4			17.5			45.3	
Approach LOS		C			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	200	69	141	570	242	99	109	163	119	88	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.91		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	3255		1703	3505	1543	1583	3043		1736	2923	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1626	3255		1703	3505	1543	1583	3043		1736	2923	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	54	213	73	150	606	257	105	116	173	127	94	30
RTOR Reduction (vph)	0	35	0	0	0	211	0	146	0	0	25	0
Lane Group Flow (vph)	54	251	0	150	606	46	105	143	0	127	99	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1			3						
Heavy Vehicles (%)	11%	4%	13%	6%	3%	3%	14%	5%	10%	4%	12%	41%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.30	0.30		0.18	0.18	0.18	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	491	983		301	620	273	247	475		271	456	
v/s Ratio Prot	0.03	c0.08		0.09	c0.17		c0.07	0.05		c0.07	0.03	
v/s Ratio Perm						0.03						
v/c Ratio	0.11	0.26		0.50	0.98	0.17	0.43	0.30		0.47	0.22	
Uniform Delay, d1	24.2	25.3		35.7	39.3	33.5	36.6	35.9		36.9	35.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.6		5.8	31.0	1.3	5.3	1.6		5.7	1.1	
Delay (s)	24.6	26.0		41.4	70.3	34.8	41.9	37.5		42.6	36.5	
Level of Service	C	C		D	E	C	D	D		D	D	
Approach Delay (s)		25.8			57.0			38.7			39.6	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	462	42	23	799	6	55	5	29	4	13	115
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	33	476	43	24	824	6	57	5	30	4	13	119
Pedestrians		2										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		4.0										
Percent Blockage		0										
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1120			405							
pX, platoon unblocked	0.90						0.90	0.90		0.90	0.90	0.90
vC, conflicting volume	830			520			1150	1441	260	1211	1460	417
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	599			520			954	1275	260	1021	1296	142
tC, single (s)	4.9			4.2			7.5	6.5	7.0	8.2	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.6			2.3			3.5	4.0	3.3	3.8	4.0	3.3
p0 queue free %	95			98			60	96	96	97	90	85
cM capacity (veh/h)	673			1009			143	141	733	122	137	791

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	271	281	436	418	92	136
Volume Left	33	0	24	0	57	4
Volume Right	0	43	0	6	30	119
cSH	673	1700	1009	1700	194	484
Volume to Capacity	0.05	0.17	0.02	0.25	0.47	0.28
Queue Length 95th (ft)	4	0	2	0	57	29
Control Delay (s)	1.8	0.0	0.7	0.0	39.2	15.3
Lane LOS	A		A		E	C
Approach Delay (s)	0.9		0.4		39.2	15.3
Approach LOS					E	C

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	168	0	0	0	0	561
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	193	0	0	0	0	645
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	322	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	322	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	70	100			100	
cM capacity (veh/h)	638	1091			1636	

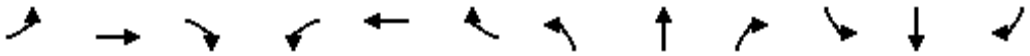
Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	97	97	322	322
Volume Left	97	97	0	0
Volume Right	0	0	0	0
cSH	638	638	1700	1700
Volume to Capacity	0.15	0.15	0.19	0.19
Queue Length 95th (ft)	13	13	0	0
Control Delay (s)	11.6	11.6	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	11.6		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	265	90	141	494	0	0	0	0	119	378	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.91		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.96		1.00	1.00						0.95	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		4676		1766	3539						3260	
Flt Permitted		1.00		0.52	1.00						0.99	
Satd. Flow (perm)		4676		958	3539						3260	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	282	96	150	526	0	0	0	0	127	402	239
RTOR Reduction (vph)	0	56	0	0	0	0	0	0	0	0	47	0
Lane Group Flow (vph)	0	322	0	150	526	0	0	0	0	0	721	0
Confl. Peds. (#/hr)			4	4						4		2
Confl. Bikes (#/hr)			3			2						21
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		46.0		46.0	46.0						54.0	
Effective Green, g (s)		46.0		46.0	46.0						54.0	
Actuated g/C Ratio		0.42		0.42	0.42						0.49	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		1955		400	1479						1600	
v/s Ratio Prot		0.07			0.15							
v/s Ratio Perm				c0.16							0.22	
v/c Ratio		0.16		0.38	0.36						0.45	
Uniform Delay, d1		20.0		22.1	21.9						18.3	
Progression Factor		1.00		0.36	0.34						1.00	
Incremental Delay, d2		0.2		0.6	0.1						0.9	
Delay (s)		20.2		8.5	7.6						19.2	
Level of Service		C		A	A						B	
Approach Delay (s)		20.2			7.8			0.0			19.2	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

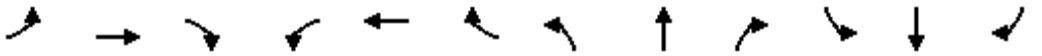
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	1	18	6	0	12	0	0	0	32	430	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	82	1	20	7	0	13	0	0	0	36	478	14
Pedestrians								1				
Lane Width (ft)								0.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	569	556	247	332	563	0	492			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	569	556	247	332	563	0	492			0		
tC, single (s)	7.7	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	78	100	97	99	100	99	100			98		
cM capacity (veh/h)	381	432	759	562	428	1091	1082			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	103	20	274	253
Volume Left	82	7	36	0
Volume Right	20	13	0	14
cSH	422	830	1636	1700
Volume to Capacity	0.24	0.02	0.02	0.15
Queue Length 95th (ft)	24	2	2	0
Control Delay (s)	16.3	9.4	1.1	0.0
Lane LOS	C	A	A	
Approach Delay (s)	16.3	9.4	0.6	
Approach LOS	C	A		

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	31.1%	ICU Level of Service	A	
Analysis Period (min)	15			

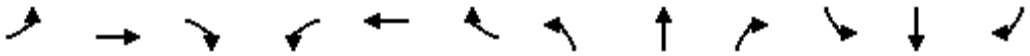


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	27	0	0	146	129	48	172	146	67	0	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.93		1.00	0.93		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1624	3471			3079		1441	2982		1543		2682
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1624	3471			3079		1441	2982		1543		2682
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	21	31	0	0	168	148	55	198	168	77	0	237
RTOR Reduction (vph)	0	0	0	0	125	0	0	110	0	0	0	219
Lane Group Flow (vph)	21	31	0	0	191	0	49	262	0	77	0	18
Confl. Peds. (#/hr)	6					6						
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	0%	4%	0%	0%	9%	7%	14%	7%	9%	17%	0%	6%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	3.6	3.6			8.4		18.4	18.4		4.1		4.1
Effective Green, g (s)	3.6	3.6			8.4		18.4	18.4		4.1		4.1
Actuated g/C Ratio	0.07	0.07			0.16		0.34	0.34		0.08		0.08
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	109	233			483		495	1025		118		205
v/s Ratio Prot	c0.01	0.01			c0.06		0.03	c0.09		c0.05		0.01
v/s Ratio Perm												
v/c Ratio	0.19	0.13			0.40		0.10	0.26		0.65		0.09
Uniform Delay, d1	23.6	23.5			20.3		11.9	12.6		24.0		23.0
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	0.9	0.3			0.5		0.4	0.6		12.2		0.2
Delay (s)	24.4	23.7			20.8		12.3	13.2		36.2		23.2
Level of Service	C	C			C		B	B		D		C
Approach Delay (s)		24.0			20.8			13.1			26.4	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	53.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	31	1	16	31	47	0	9	26	38	13	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	793	1357	3471	1328		2621		1703	2356	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	793	1357	3471	1328		2621		1703	2356	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	13	38	1	20	38	57	0	11	32	46	16	1
RTOR Reduction (vph)	0	0	1	0	0	36	0	24	0	0	1	0
Lane Group Flow (vph)	13	38	0	20	38	21	0	19	0	46	16	0
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			4			2						3
Heavy Vehicles (%)	0%	0%	100%	33%	4%	20%	0%	38%	17%	6%	55%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	10.0	39.0	39.0	15.0	44.0	44.0		30.0		16.0	42.0	
Effective Green, g (s)	10.0	39.0	39.0	15.0	44.0	44.0		30.0		16.0	42.0	
Actuated g/C Ratio	0.08	0.32	0.32	0.12	0.37	0.37		0.25		0.13	0.35	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Grp Cap (vph)	150	1173	257	169	1272	486		655		227	824	
v/s Ratio Prot	0.01	0.01		c0.01	0.01			c0.01		c0.03	0.01	
v/s Ratio Perm			0.00			c0.02						
v/c Ratio	0.09	0.03	0.00	0.12	0.03	0.04		0.03		0.20	0.02	
Uniform Delay, d1	50.8	27.6	27.3	46.6	24.3	24.5		34.0		46.3	25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.1	0.0	1.4	0.0	0.2		0.1		2.0	0.0	
Delay (s)	51.9	27.7	27.4	48.1	24.4	24.6		34.1		48.3	25.6	
Level of Service	D	C	C	D	C	C		C		D	C	
Approach Delay (s)		33.7			28.6			34.1			42.2	
Approach LOS		C			C			C			D	

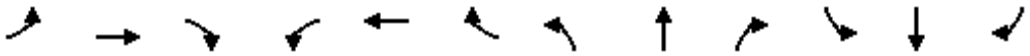
Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	429	24	58	577	61	45	125	45	77	165	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.91			0.91			0.95			0.95	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.97			0.96	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		4950			4961			3443			3319	
Flt Permitted		0.86			0.85			0.85			0.84	
Satd. Flow (perm)		4278			4250			2952			2819	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	33	433	24	59	583	62	45	126	45	78	167	91
RTOR Reduction (vph)	0	9	0	0	18	0	0	21	0	0	37	0
Lane Group Flow (vph)	0	481	0	0	686	0	0	195	0	0	299	0
Confl. Peds. (#/hr)	6		3	3		6	6		5	5		6
Confl. Bikes (#/hr)			15			13			14			11
Heavy Vehicles (%)	0%	4%	0%	0%	3%	0%	0%	0%	0%	2%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.7			18.7			33.6			33.6	
Effective Green, g (s)		18.7			18.7			33.6			33.6	
Actuated g/C Ratio		0.30			0.30			0.54			0.54	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1284			1275			1592			1520	
v/s Ratio Prot												
v/s Ratio Perm		0.11			c0.16			0.07			c0.11	
v/c Ratio		0.37			0.54			0.12			0.20	
Uniform Delay, d1		17.2			18.2			7.1			7.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.4			0.2			0.3	
Delay (s)		17.4			18.6			7.2			7.7	
Level of Service		B			B			A			A	
Approach Delay (s)		17.4			18.6			7.2			7.7	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

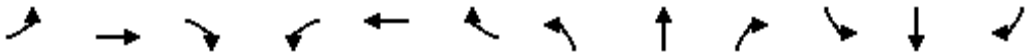
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	164	9	4	424	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	0	0	189	10	5	487	0	0	0	0
Pedestrians		3			3						2	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	362	503	3	500	503	249	3			490		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	362	503	3	500	503	249	3			490		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	60	99	100			100		
cM capacity (veh/h)	388	472	1086	444	472	756	1632			1081		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	126	73	167	325
Volume Left	0	0	5	0
Volume Right	0	10	0	0
cSH	472	498	1632	1700
Volume to Capacity	0.27	0.15	0.00	0.19
Queue Length 95th (ft)	27	13	0	0
Control Delay (s)	15.4	13.5	0.2	0.0
Lane LOS	C	B	A	
Approach Delay (s)	14.7		0.1	
Approach LOS	B			

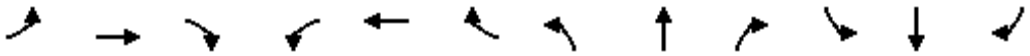
Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	27.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	152	232	0	0	554	82	82	269	100	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.91			0.91			0.95				
Frpb, ped/bikes		1.00			1.00			0.99				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.98			0.97				
Flt Protected		0.98			1.00			0.99				
Satd. Flow (prot)		4824			4978			3393				
Flt Permitted		0.66			1.00			0.99				
Satd. Flow (perm)		3245			4978			3393				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	162	247	0	0	589	87	87	286	106	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	24	0	0	0	0
Lane Group Flow (vph)	0	409	0	0	659	0	0	455	0	0	0	0
Confl. Peds. (#/hr)	1					1			8			
Confl. Bikes (#/hr)			2			2			27			
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)		46.0			46.0			54.0				
Effective Green, g (s)		46.0			46.0			54.0				
Actuated g/C Ratio		0.42			0.42			0.49				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		1357			2081			1665				
v/s Ratio Prot					c0.13							
v/s Ratio Perm		0.13						0.13				
v/c Ratio		0.30			0.32			0.27				
Uniform Delay, d1		21.3			21.5			16.5				
Progression Factor		0.82			1.00			1.00				
Incremental Delay, d2		0.6			0.1			0.1				
Delay (s)		18.0			21.5			16.6				
Level of Service		B			C			B				
Approach Delay (s)		18.0			21.5			16.6			0.0	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

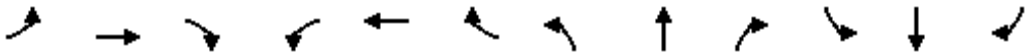
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	76	0	0	1	0	4	340	27	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	84	0	0	1	0	4	378	30	0	0	0
Pedestrians		9			13							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		1			1							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	207	439	9	457	424	217	9			421		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	207	439	9	457	424	217	9			421		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	83	100	100	100	100	100			100		
cM capacity (veh/h)	714	504	1069	417	514	785	1612			1137		

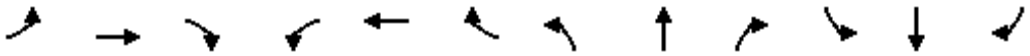
Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	84	1	193	219
Volume Left	0	0	4	0
Volume Right	0	0	0	30
cSH	504	514	1612	1700
Volume to Capacity	0.17	0.00	0.00	0.13
Queue Length 95th (ft)	15	0	0	0
Control Delay (s)	13.6	12.0	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	13.6	12.0	0.1	
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	22.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	0	21	0	0	0	25	552	1	0	108	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.97	
Flpb, ped/bikes		0.98	1.00				0.98	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.93	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1739	1164				1181	2735			2599	
Flt Permitted		0.76	1.00				0.61	1.00			1.00	
Satd. Flow (perm)		1386	1164				758	2735			2599	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92
Adj. Flow (vph)	154	0	22	0	0	0	27	587	1	0	115	113
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	63	0
Lane Group Flow (vph)	0	154	9	0	0	0	27	588	0	0	165	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	2%	0%	33%	0%	0%	0%	50%	32%	0%	0%	49%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		29.0	29.0				31.0	31.0			31.0	
Effective Green, g (s)		29.0	29.0				31.0	31.0			31.0	
Actuated g/C Ratio		0.41	0.41				0.44	0.44			0.44	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		574	482				335	1211			1150	
v/s Ratio Prot								c0.21			0.06	
v/s Ratio Perm		c0.11	0.01				0.04					
v/c Ratio		0.27	0.02				0.08	0.49			0.14	
Uniform Delay, d1		13.5	12.1				11.3	13.8			11.6	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		1.1	0.1				0.5	1.4			0.3	
Delay (s)		14.7	12.2				11.7	15.2			11.9	
Level of Service		B	B				B	B			B	
Approach Delay (s)		14.3			0.0			15.1			11.9	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	300	112	121	686	40	321	64	240	68	26	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1504	3505	1435	1433	3359		1618	1356	1265	1517	1398	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1504	3505	1435	1433	3359		1618	1356	1265	1517	1398	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	316	118	127	722	42	338	67	253	72	27	58
RTOR Reduction (vph)	0	0	94	0	3	0	0	0	197	0	46	0
Lane Group Flow (vph)	6	316	24	127	761	0	199	206	56	72	39	0
Confl. Peds. (#/hr)			20						20			
Heavy Vehicles (%)	20%	3%	8%	26%	3%	68%	6%	76%	24%	19%	50%	9%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	1.1	18.5	18.5	12.9	30.3		19.8	19.8	19.8	18.6	18.6	
Effective Green, g (s)	1.1	18.5	18.5	12.9	30.3		19.8	19.8	19.8	18.6	18.6	
Actuated g/C Ratio	0.01	0.21	0.21	0.14	0.34		0.22	0.22	0.22	0.21	0.21	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	18	722	295	205	1133		356	298	278	314	289	
v/s Ratio Prot	0.00	0.09		c0.09	c0.23		0.12	c0.15		c0.05	0.03	
v/s Ratio Perm			0.02						0.04			
v/c Ratio	0.33	0.44	0.08	0.62	0.67		0.56	0.69	0.20	0.23	0.13	
Uniform Delay, d1	44.0	31.1	28.8	36.1	25.5		31.1	32.2	28.5	29.6	29.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.6	0.4	0.1	5.5	1.6		1.9	6.8	0.4	1.7	1.0	
Delay (s)	54.6	31.5	28.9	41.6	27.1		33.0	38.9	28.9	31.3	30.0	
Level of Service	D	C	C	D	C		C	D	C	C	C	
Approach Delay (s)		31.1			29.1			33.3			30.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	402	91	183	697	214	103	177	371	134	77	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.90		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1433	3230		1626	3438	1495	1444	2823		1612	2744	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1433	3230		1626	3438	1495	1444	2823		1612	2744	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	125	414	94	189	719	221	106	182	382	138	79	28
RTOR Reduction (vph)	0	20	0	0	0	182	0	322	0	0	24	0
Lane Group Flow (vph)	125	488	0	189	719	39	106	242	0	138	83	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			3									
Heavy Vehicles (%)	26%	8%	10%	11%	5%	8%	25%	23%	11%	12%	18%	50%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.30	0.30		0.18	0.18	0.18	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	432	975		287	608	264	225	441		251	428	
v/s Ratio Prot	0.09	c0.15		0.12	c0.21		0.07	c0.09		c0.09	0.03	
v/s Ratio Perm						0.03						
v/c Ratio	0.29	0.50		0.66	1.18	0.15	0.47	0.55		0.55	0.19	
Uniform Delay, d1	25.6	27.5		36.8	39.5	33.4	36.9	37.4		37.4	35.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	1.8		11.3	98.2	1.2	6.9	4.8		8.4	1.0	
Delay (s)	27.3	29.4		48.1	137.7	34.6	43.8	42.2		45.8	36.3	
Level of Service	C	C		D	F	C	D	D		D	D	
Approach Delay (s)		29.0			102.5			42.5			41.6	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	64.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	87	808	51	23	879	13	41	0	17	3	5	197
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	94	869	55	25	945	14	44	0	18	3	5	212
Pedestrians								2			2	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1120			405							
pX, platoon unblocked	0.88						0.88	0.88		0.88	0.88	0.88
vC, conflicting volume	961			926			1822	2096	464	1643	2116	482
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	693			926			1667	1977	464	1465	2000	151
tC, single (s)	4.9			4.1			7.9	6.5	7.1	7.5	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.6			2.2			3.7	4.0	3.4	3.5	4.0	3.4
p0 queue free %	85			97			0	100	97	95	88	71
cM capacity (veh/h)	604			745			26	45	528	67	44	742

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	528	489	497	487	62	220
Volume Left	94	0	25	0	44	3
Volume Right	0	55	0	14	18	212
cSH	604	1700	745	1700	36	482
Volume to Capacity	0.15	0.29	0.03	0.29	1.73	0.46
Queue Length 95th (ft)	14	0	3	0	169	59
Control Delay (s)	4.2	0.0	0.9	0.0	592.8	18.6
Lane LOS	A		A		F	C
Approach Delay (s)	2.2		0.5		592.8	18.6
Approach LOS					F	C

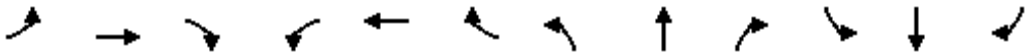
Intersection Summary				
Average Delay	19.2			
Intersection Capacity Utilization	81.2%	ICU Level of Service	D	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	192	0	0	0	0	622
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	198	0	0	0	0	641
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	321	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	321	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	69	100			100	
cM capacity (veh/h)	642	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	99	99	321	321
Volume Left	99	99	0	0
Volume Right	0	0	0	0
cSH	642	642	1700	1700
Volume to Capacity	0.15	0.15	0.19	0.19
Queue Length 95th (ft)	14	14	0	0
Control Delay (s)	11.6	11.6	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	11.6		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	608	91	122	613	0	0	0	0	142	474	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.91		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.98		1.00	1.00						0.97	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		4815		1770	3471						3371	
Flt Permitted		1.00		0.33	1.00						0.99	
Satd. Flow (perm)		4815		607	3471						3371	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	633	95	127	639	0	0	0	0	148	494	195
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	710	0	127	639	0	0	0	0	0	811	0
Confl. Peds. (#/hr)										7		3
Confl. Bikes (#/hr)						1						36
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		51.0		51.0	51.0						49.0	
Effective Green, g (s)		51.0		51.0	51.0						49.0	
Actuated g/C Ratio		0.46		0.46	0.46						0.45	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		2232		281	1609						1501	
v/s Ratio Prot		0.15			0.18							
v/s Ratio Perm				c0.21							0.24	
v/c Ratio		0.32		0.45	0.40						0.54	
Uniform Delay, d1		18.6		20.0	19.4						22.3	
Progression Factor		1.00		0.49	0.44						1.00	
Incremental Delay, d2		0.4		4.9	0.7						1.4	
Delay (s)		18.9		14.8	9.2						23.7	
Level of Service		B		B	A						C	
Approach Delay (s)		18.9			10.1			0.0			23.7	
Approach LOS		B			B			A			C	

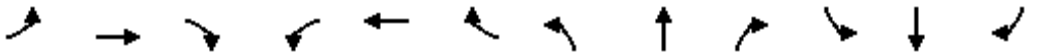
Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	83	9	5	1	0	0	0	0	8	538	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	89	10	5	1	0	0	0	0	9	578	3
Pedestrians		3						1				
Lane Width (ft)		12.0						0.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	601	600	295	362	602	0	585			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	601	600	295	362	602	0	585			0		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	78	99	99	100	100	100			99		
cM capacity (veh/h)	368	414	706	470	413	1091	997			1636		

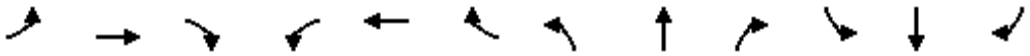
Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	99	6	298	292
Volume Left	0	5	9	0
Volume Right	10	0	0	3
cSH	431	459	1636	1700
Volume to Capacity	0.23	0.01	0.01	0.17
Queue Length 95th (ft)	22	1	0	0
Control Delay (s)	15.8	13.0	0.3	0.0
Lane LOS	C	B	A	
Approach Delay (s)	15.8	13.0	0.1	
Approach LOS	C	B		

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	27.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	100	0	0	112	134	107	317	95	93	0	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.92		1.00	0.97		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1160	3195			2744		1014	2883		1570		2349
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1160	3195			2744		1014	2883		1570		2349
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	159	111	0	0	124	149	119	352	106	103	0	229
RTOR Reduction (vph)	0	0	0	0	131	0	0	21	0	0	0	197
Lane Group Flow (vph)	159	111	0	0	142	0	107	449	0	103	0	32
Confl. Peds. (#/hr)							4					4
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	40%	13%	0%	0%	18%	21%	62%	15%	13%	15%	0%	21%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	15.8	15.8			8.9		17.2	17.2		10.1		10.1
Effective Green, g (s)	15.8	15.8			8.9		17.2	17.2		10.1		10.1
Actuated g/C Ratio	0.22	0.22			0.12		0.24	0.24		0.14		0.14
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	254	701			339		242	688		220		329
v/s Ratio Prot	c0.14	0.03			c0.05		0.11	c0.16		c0.07		0.01
v/s Ratio Perm												
v/c Ratio	0.63	0.16			0.42		0.44	0.65		0.47		0.10
Uniform Delay, d1	25.4	22.7			29.2		23.3	24.7		28.5		27.0
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	4.8	0.1			0.8		5.8	4.8		1.6		0.1
Delay (s)	30.2	22.8			30.0		29.1	29.5		30.1		27.1
Level of Service	C	C			C		C	C		C		C
Approach Delay (s)		27.2			30.0			29.4			28.0	
Approach LOS		C			C			C			C	

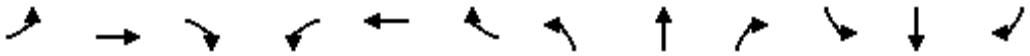
Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	171	198	36	28	60	86	6	229	157	210	128	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	188	218	40	31	66	95	7	252	173	231	141	0
RTOR Reduction (vph)	0	0	27	0	0	83	0	102	0	0	0	0
Lane Group Flow (vph)	188	218	13	31	66	12	7	323	0	231	141	0
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	45%	52%	94%	63%	64%	50%	80%	79%	62%	50%	93%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Effective Green, g (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Actuated g/C Ratio	0.32	0.32	0.32	0.12	0.12	0.12	0.24	0.24		0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	404	771	270	138	275	132	242	476		170	264	
v/s Ratio Prot	c0.15	c0.09		0.03	0.03		0.01	c0.16		c0.19	0.08	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.47	0.28	0.05	0.22	0.24	0.09	0.03	0.68		1.36	0.53	
Uniform Delay, d1	32.2	30.1	27.8	47.3	47.4	46.5	34.7	41.3		51.5	47.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	0.9	0.3	3.7	2.1	1.3	0.2	7.6		194.7	7.5	
Delay (s)	36.0	31.0	28.1	51.0	49.4	47.8	35.0	48.9		246.2	55.4	
Level of Service	D	C	C	D	D	D	C	D		F	E	
Approach Delay (s)		32.9			48.9			48.7			173.9	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	76.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

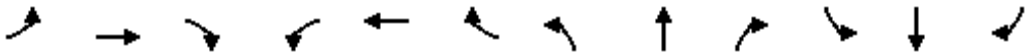
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	633	55	76	745	64	37	251	69	79	232	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.91			0.91			0.95			0.95	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.97			0.97	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		4858			4993			3362			3285	
Flt Permitted		0.75			0.79			0.88			0.81	
Satd. Flow (perm)		3682			3945			2985			2686	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	666	58	80	784	67	39	264	73	83	244	96
RTOR Reduction (vph)	0	13	0	0	13	0	0	23	0	0	29	0
Lane Group Flow (vph)	0	788	0	0	918	0	0	353	0	0	394	0
Confl. Peds. (#/hr)	20		12	12		20	17		11	11		17
Confl. Bikes (#/hr)			10			8			12			9
Heavy Vehicles (%)	2%	5%	7%	2%	2%	2%	2%	3%	4%	2%	3%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		24.1			24.1			33.3			33.3	
Effective Green, g (s)		24.1			24.1			33.3			33.3	
Actuated g/C Ratio		0.36			0.36			0.49			0.49	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1316			1410			1474			1327	
v/s Ratio Prot												
v/s Ratio Perm		0.21			c0.23			0.12			c0.15	
v/c Ratio		0.60			0.65			0.24			0.30	
Uniform Delay, d1		17.7			18.1			9.8			10.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			1.1			0.4			0.6	
Delay (s)		18.4			19.2			10.2			10.7	
Level of Service		B			B			B			B	
Approach Delay (s)		18.4			19.2			10.2			10.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		

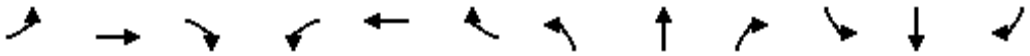
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	187	12	5	768	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	0	0	193	12	5	792	0	0	0	0
Pedestrians		16			1						3	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	534	819	16	803	819	400	16			793		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	534	819	16	803	819	400	16			793		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	38	98	100			100		
cM capacity (veh/h)	214	311	1066	277	311	605	1615			836		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	129	77	269	528
Volume Left	0	0	5	0
Volume Right	0	12	0	0
cSH	311	338	1615	1700
Volume to Capacity	0.41	0.23	0.00	0.31
Queue Length 95th (ft)	49	21	0	0
Control Delay (s)	24.5	18.8	0.2	0.0
Lane LOS	C	C	A	
Approach Delay (s)	22.3		0.1	
Approach LOS	C			

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	34.4%	ICU Level of Service	A	
Analysis Period (min)	15			

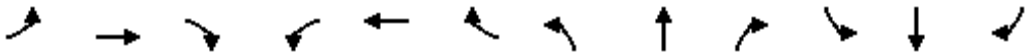


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	325	424	0	0	618	131	115	521	142	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.91			0.91			0.95				
Frpb, ped/bikes		1.00			1.00			0.99				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.97			0.97				
Flt Protected		0.98			1.00			0.99				
Satd. Flow (prot)		4788			4870			3350				
Flt Permitted		0.66			1.00			0.99				
Satd. Flow (perm)		3217			4870			3350				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	339	442	0	0	644	136	120	543	148	0	0	0
RTOR Reduction (vph)	0	0	0	0	30	0	0	17	0	0	0	0
Lane Group Flow (vph)	0	781	0	0	751	0	0	794	0	0	0	0
Confl. Peds. (#/hr)	2					2			4	4		
Confl. Bikes (#/hr)			1						44			
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)		51.0			51.0			49.0				
Effective Green, g (s)		51.0			51.0			49.0				
Actuated g/C Ratio		0.46			0.46			0.45				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		1491			2257			1492				
v/s Ratio Prot					0.15							
v/s Ratio Perm		c0.24						0.24				
v/c Ratio		1.35dl			0.33			0.53				
Uniform Delay, d1		20.9			18.7			22.2				
Progression Factor		0.54			1.00			1.00				
Incremental Delay, d2		1.3			0.4			0.4				
Delay (s)		12.5			19.1			22.5				
Level of Service		B			B			C				
Approach Delay (s)		12.5			19.1			22.5			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

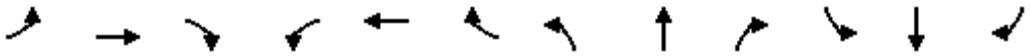
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	83	0	0	0	1	5	6	690	3	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	89	0	0	0	1	5	6	742	3	0	0	0
Pedestrians		12			1						1	
Lane Width (ft)		12.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	403	771	12	757	769	375	12			746		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	403	771	12	757	769	375	12			746		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	82	100	100	100	100	99	100			100		
cM capacity (veh/h)	501	328	1061	296	329	628	1604			870		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	89	6	377	374
Volume Left	89	0	6	0
Volume Right	0	5	0	3
cSH	501	545	1604	1700
Volume to Capacity	0.18	0.01	0.00	0.22
Queue Length 95th (ft)	16	1	0	0
Control Delay (s)	13.7	11.7	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	13.7	11.7	0.1	
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	37.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	243	0	49	0	0	0	43	138	0	0	69	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.95	
Flpb, ped/bikes		0.98	1.00				0.98	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.89	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1773	1549				1517	3471			2963	
Flt Permitted		0.76	1.00				0.57	1.00			1.00	
Satd. Flow (perm)		1414	1549				907	3471			2963	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	276	0	56	0	0	0	49	157	0	0	78	224
RTOR Reduction (vph)	0	0	32	0	0	0	0	0	0	0	128	0
Lane Group Flow (vph)	0	276	24	0	0	0	49	157	0	0	174	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	17%	4%	0%	0%	13%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		30.0	30.0				30.0	30.0			30.0	
Effective Green, g (s)		30.0	30.0				30.0	30.0			30.0	
Actuated g/C Ratio		0.43	0.43				0.43	0.43			0.43	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		606	663				388	1487			1269	
v/s Ratio Prot								0.05			c0.06	
v/s Ratio Perm		c0.20	0.02				0.05					
v/c Ratio		0.46	0.04				0.13	0.11			0.14	
Uniform Delay, d1		14.2	11.6				12.1	12.0			12.1	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		2.5	0.1				0.7	0.1			0.2	
Delay (s)		16.7	11.7				12.8	12.1			12.4	
Level of Service		B	B				B	B			B	
Approach Delay (s)		15.8			0.0			12.3			12.4	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

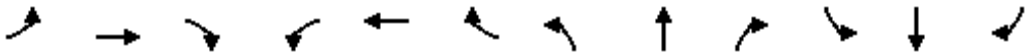
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	211	83	164	618	26	99	15	230	44	14	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1357	3471	1468	1687	3410		1649	1502	1449	1433	1343	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1357	3471	1468	1687	3410		1649	1502	1449	1433	1343	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	229	90	178	672	28	108	16	250	48	15	24
RTOR Reduction (vph)	0	0	69	0	2	0	0	0	149	0	22	0
Lane Group Flow (vph)	35	229	21	178	698	0	62	62	101	48	17	0
Confl. Peds. (#/hr)			20						20			
Heavy Vehicles (%)	33%	4%	6%	7%	4%	35%	4%	50%	8%	26%	45%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	4.6	23.8	23.8	8.3	27.5		40.4	40.4	40.4	7.3	7.3	
Effective Green, g (s)	4.6	23.8	23.8	8.3	27.5		40.4	40.4	40.4	7.3	7.3	
Actuated g/C Ratio	0.05	0.24	0.24	0.08	0.28		0.40	0.40	0.40	0.07	0.07	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	62	827	350	140	939		667	608	586	104	98	
v/s Ratio Prot	0.03	0.07		c0.11	c0.20		0.04	0.04		c0.03	0.01	
v/s Ratio Perm			0.01						c0.07			
v/c Ratio	0.56	0.28	0.06	1.27	0.74		0.09	0.10	0.17	0.46	0.17	
Uniform Delay, d1	46.6	31.0	29.4	45.8	32.9		18.4	18.4	19.0	44.4	43.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.2	0.2	0.1	166.4	3.2		0.3	0.3	0.6	3.2	0.8	
Delay (s)	57.9	31.2	29.4	212.1	36.1		18.6	18.8	19.6	47.6	44.2	
Level of Service	E	C	C	F	D		B	B	B	D	D	
Approach Delay (s)		33.4			71.8			19.3			46.1	
Approach LOS		C			E			B			D	

Intersection Summary			
HCM 2000 Control Delay	50.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	99.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	304	76	141	673	242	107	109	163	119	88	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	3300		1703	3505	1543	1583	3043		1736	2819	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1626	3300		1703	3505	1543	1583	3043		1736	2819	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	323	81	150	716	257	114	116	173	127	94	47
RTOR Reduction (vph)	0	23	0	0	0	211	0	146	0	0	40	0
Lane Group Flow (vph)	74	381	0	150	716	46	114	143	0	127	101	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1			3						
Heavy Vehicles (%)	11%	4%	13%	6%	3%	3%	14%	5%	10%	4%	12%	41%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.30	0.30		0.18	0.18	0.18	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	491	996		301	620	273	247	475		271	440	
v/s Ratio Prot	0.05	c0.12		0.09	c0.20		c0.07	0.05		c0.07	0.04	
v/s Ratio Perm						0.03						
v/c Ratio	0.15	0.38		0.50	1.15	0.17	0.46	0.30		0.47	0.23	
Uniform Delay, d1	24.5	26.4		35.7	39.5	33.5	36.8	35.9		36.9	35.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.1		5.8	87.0	1.3	6.1	1.6		5.7	1.2	
Delay (s)	25.1	27.5		41.4	126.5	34.8	42.9	37.5		42.6	36.7	
Level of Service	C	C		D	F	C	D	D		D	D	
Approach Delay (s)		27.2			94.2			39.0			39.5	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	63.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	566	42	23	902	6	55	5	29	4	13	115
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	33	584	43	24	930	6	57	5	30	4	13	119
Pedestrians		2										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		4.0										
Percent Blockage		0										
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1120			405							
pX, platoon unblocked	0.88						0.88	0.88		0.88	0.88	0.88
vC, conflicting volume	936			627			1311	1655	313	1371	1673	470
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	655			627			1080	1471	313	1148	1492	125
tC, single (s)	4.9			4.2			7.5	6.5	7.0	8.2	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.6			2.3			3.5	4.0	3.3	3.8	4.0	3.3
p0 queue free %	95			97			48	95	96	96	87	85
cM capacity (veh/h)	619			918			109	104	676	92	101	790

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	325	335	489	471	92	136
Volume Left	33	0	24	0	57	4
Volume Right	0	43	0	6	30	119
cSH	619	1700	918	1700	149	415
Volume to Capacity	0.05	0.20	0.03	0.28	0.61	0.33
Queue Length 95th (ft)	4	0	2	0	82	35
Control Delay (s)	1.8	0.0	0.7	0.0	61.5	17.8
Lane LOS	A		A		F	C
Approach Delay (s)	0.9		0.4		61.5	17.8
Approach LOS					F	C

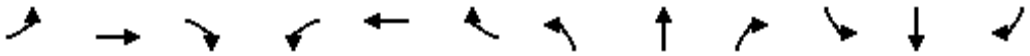
Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	168	0	0	0	0	575
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	193	0	0	0	0	661
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	330	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	330	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	69	100			100	
cM capacity (veh/h)	631	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	97	97	330	330
Volume Left	97	97	0	0
Volume Right	0	0	0	0
cSH	631	631	1700	1700
Volume to Capacity	0.15	0.15	0.19	0.19
Queue Length 95th (ft)	13	13	0	0
Control Delay (s)	11.7	11.7	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	11.7		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	362	97	141	583	0	0	0	0	119	378	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.91		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.97		1.00	1.00						0.95	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		4705		1766	3539						3253	
Flt Permitted		1.00		0.44	1.00						0.99	
Satd. Flow (perm)		4705		825	3539						3253	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	385	103	150	620	0	0	0	0	127	402	254
RTOR Reduction (vph)	0	44	0	0	0	0	0	0	0	0	52	0
Lane Group Flow (vph)	0	444	0	150	620	0	0	0	0	0	731	0
Confl. Peds. (#/hr)			4	4						4		2
Confl. Bikes (#/hr)			3			2						21
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		46.0		46.0	46.0						54.0	
Effective Green, g (s)		46.0		46.0	46.0						54.0	
Actuated g/C Ratio		0.42		0.42	0.42						0.49	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		1967		345	1479						1596	
v/s Ratio Prot		0.09			0.18							
v/s Ratio Perm				c0.18							0.22	
v/c Ratio		0.23		0.43	0.42						0.46	
Uniform Delay, d1		20.6		22.8	22.6						18.4	
Progression Factor		1.00		0.35	0.32						1.00	
Incremental Delay, d2		0.3		0.8	0.2						0.9	
Delay (s)		20.8		8.9	7.5						19.3	
Level of Service		C		A	A						B	
Approach Delay (s)		20.8			7.8			0.0			19.3	
Approach LOS		C			A			A			B	

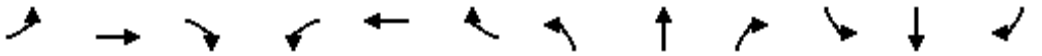
Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	1	18	6	0	12	0	0	0	32	437	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	82	1	20	7	0	13	0	0	0	36	486	14
Pedestrians								1				
Lane Width (ft)								0.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	577	564	251	335	571	0	500			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	577	564	251	335	571	0	500			0		
tC, single (s)	7.7	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	78	100	97	99	100	99	100			98		
cM capacity (veh/h)	376	428	755	558	424	1091	1075			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	103	20	278	257
Volume Left	82	7	36	0
Volume Right	20	13	0	14
cSH	417	828	1636	1700
Volume to Capacity	0.25	0.02	0.02	0.15
Queue Length 95th (ft)	24	2	2	0
Control Delay (s)	16.5	9.5	1.1	0.0
Lane LOS	C	A	A	
Approach Delay (s)	16.5	9.5	0.6	
Approach LOS	C	A		

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	31.3%	ICU Level of Service	A	
Analysis Period (min)	15			

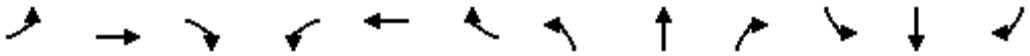


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	32	0	0	151	137	78	172	146	74	0	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.93		1.00	0.93		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1624	3471			3076		1441	2981		1543		2682
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1624	3471			3076		1441	2981		1543		2682
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	21	37	0	0	174	157	90	198	168	85	0	237
RTOR Reduction (vph)	0	0	0	0	132	0	0	111	0	0	0	219
Lane Group Flow (vph)	21	37	0	0	199	0	81	264	0	85	0	18
Confl. Peds. (#/hr)	6					6						
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	0%	4%	0%	0%	9%	7%	14%	7%	9%	17%	0%	6%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	3.6	3.6			8.7		18.4	18.4		4.1		4.1
Effective Green, g (s)	3.6	3.6			8.7		18.4	18.4		4.1		4.1
Actuated g/C Ratio	0.07	0.07			0.16		0.34	0.34		0.08		0.08
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	108	232			497		492	1019		117		204
v/s Ratio Prot	c0.01	0.01			c0.06		0.06	c0.09		c0.06		0.01
v/s Ratio Perm												
v/c Ratio	0.19	0.16			0.40		0.16	0.26		0.73		0.09
Uniform Delay, d1	23.7	23.7			20.2		12.3	12.8		24.3		23.1
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	0.9	0.3			0.5		0.7	0.6		20.0		0.2
Delay (s)	24.6	24.0			20.7		13.1	13.4		44.3		23.3
Level of Service	C	C			C		B	B		D		C
Approach Delay (s)		24.2			20.7			13.3			28.8	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	31	1	16	31	82	0	9	26	72	13	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	793	1357	3471	1328		2621		1703	2356	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	793	1357	3471	1328		2621		1703	2356	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	13	38	1	20	38	100	0	11	32	88	16	1
RTOR Reduction (vph)	0	0	1	0	0	63	0	24	0	0	1	0
Lane Group Flow (vph)	13	38	0	20	38	37	0	19	0	88	16	0
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			4			2						3
Heavy Vehicles (%)	0%	0%	100%	33%	4%	20%	0%	38%	17%	6%	55%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	10.0	39.0	39.0	15.0	44.0	44.0		30.0		16.0	42.0	
Effective Green, g (s)	10.0	39.0	39.0	15.0	44.0	44.0		30.0		16.0	42.0	
Actuated g/C Ratio	0.08	0.32	0.32	0.12	0.37	0.37		0.25		0.13	0.35	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Grp Cap (vph)	150	1173	257	169	1272	486		655		227	824	
v/s Ratio Prot	0.01	0.01		c0.01	0.01			c0.01		c0.05	0.01	
v/s Ratio Perm			0.00			c0.03						
v/c Ratio	0.09	0.03	0.00	0.12	0.03	0.08		0.03		0.39	0.02	
Uniform Delay, d1	50.8	27.6	27.3	46.6	24.3	24.8		34.0		47.5	25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.1	0.0	1.4	0.0	0.3		0.1		4.9	0.0	
Delay (s)	51.9	27.7	27.4	48.1	24.4	25.1		34.1		52.5	25.6	
Level of Service	D	C	C	D	C	C		C		D	C	
Approach Delay (s)		33.7			27.8			34.1			48.1	
Approach LOS		C			C			C			D	

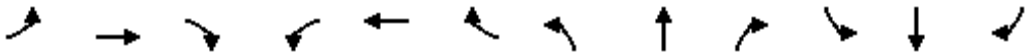
Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	468	24	58	642	61	45	125	45	77	165	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.91			0.91			0.95			0.95	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.97			0.95	
Flt Protected		0.99			1.00			0.99			0.99	
Satd. Flow (prot)		4950			4967			3443			3304	
Flt Permitted		0.75			0.85			0.85			0.84	
Satd. Flow (perm)		3742			4227			2940			2815	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	78	473	24	59	648	62	45	126	45	78	167	107
RTOR Reduction (vph)	0	8	0	0	16	0	0	21	0	0	49	0
Lane Group Flow (vph)	0	567	0	0	753	0	0	195	0	0	303	0
Confl. Peds. (#/hr)	6		3	3		6	6		5	5		6
Confl. Bikes (#/hr)			15			13			14			11
Heavy Vehicles (%)	0%	4%	0%	0%	3%	0%	0%	0%	0%	2%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		19.8			19.8			33.5			33.5	
Effective Green, g (s)		19.8			19.8			33.5			33.5	
Actuated g/C Ratio		0.31			0.31			0.53			0.53	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1170			1322			1555			1489	
v/s Ratio Prot												
v/s Ratio Perm		0.15			c0.18			0.07			c0.11	
v/c Ratio		0.48			0.57			0.13			0.20	
Uniform Delay, d1		17.6			18.2			7.5			7.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.6			0.2			0.3	
Delay (s)		17.9			18.8			7.7			8.2	
Level of Service		B			B			A			A	
Approach Delay (s)		17.9			18.8			7.7			8.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

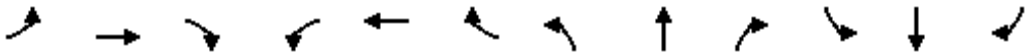
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	164	9	4	438	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	0	0	189	10	5	503	0	0	0	0
Pedestrians		3			3						2	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	371	519	3	516	519	257	3			506		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	371	519	3	516	519	257	3			506		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	59	99	100			100		
cM capacity (veh/h)	379	462	1086	433	462	747	1632			1066		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	126	73	172	336
Volume Left	0	0	5	0
Volume Right	0	10	0	0
cSH	462	488	1632	1700
Volume to Capacity	0.27	0.15	0.00	0.20
Queue Length 95th (ft)	27	13	0	0
Control Delay (s)	15.7	13.7	0.2	0.0
Lane LOS	C	B	A	
Approach Delay (s)	14.9		0.1	
Approach LOS	B			

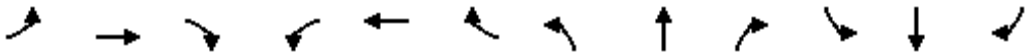
Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	27.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	166	315	0	0	635	82	90	269	100	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.91			0.91			0.95				
Frpb, ped/bikes		1.00			1.00			0.99				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.98			0.97				
Flt Protected		0.98			1.00			0.99				
Satd. Flow (prot)		4827			4990			3393				
Flt Permitted		0.65			1.00			0.99				
Satd. Flow (perm)		3212			4990			3393				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	177	335	0	0	676	87	96	286	106	0	0	0
RTOR Reduction (vph)	0	0	0	0	15	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	512	0	0	748	0	0	465	0	0	0	0
Confl. Peds. (#/hr)	1					1			8			
Confl. Bikes (#/hr)			2			2			27			
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)		46.0			46.0			54.0				
Effective Green, g (s)		46.0			46.0			54.0				
Actuated g/C Ratio		0.42			0.42			0.49				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		1343			2086			1665				
v/s Ratio Prot					0.15							
v/s Ratio Perm		c0.16						0.14				
v/c Ratio		0.38			0.36			0.28				
Uniform Delay, d1		22.1			21.9			16.5				
Progression Factor		0.65			1.00			1.00				
Incremental Delay, d2		0.8			0.1			0.1				
Delay (s)		15.2			22.0			16.6				
Level of Service		B			C			B				
Approach Delay (s)		15.2			22.0			16.6			0.0	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

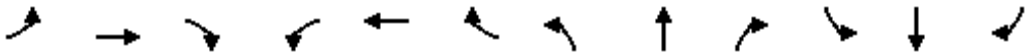
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	76	0	0	1	0	4	348	27	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	84	0	0	1	0	4	387	30	0	0	0
Pedestrians		9			13							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		1			1							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	212	448	9	466	433	221	9			430		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	212	448	9	466	433	221	9			430		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	83	100	100	100	100	100			100		
cM capacity (veh/h)	708	498	1069	411	508	780	1612			1128		

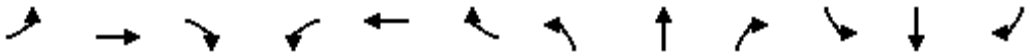
Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	84	1	198	223
Volume Left	0	0	4	0
Volume Right	0	0	0	30
cSH	498	508	1612	1700
Volume to Capacity	0.17	0.00	0.00	0.13
Queue Length 95th (ft)	15	0	0	0
Control Delay (s)	13.7	12.1	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	13.7	12.1	0.1	
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	22.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	0	21	0	0	0	25	552	1	0	108	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.97	
Flpb, ped/bikes		0.98	1.00				0.98	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.93	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1739	1164				1181	2735			2599	
Flt Permitted		0.76	1.00				0.61	1.00			1.00	
Satd. Flow (perm)		1386	1164				758	2735			2599	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92
Adj. Flow (vph)	154	0	22	0	0	0	27	587	1	0	115	113
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	63	0
Lane Group Flow (vph)	0	154	9	0	0	0	27	588	0	0	165	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	2%	0%	33%	0%	0%	0%	50%	32%	0%	0%	49%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		29.0	29.0				31.0	31.0			31.0	
Effective Green, g (s)		29.0	29.0				31.0	31.0			31.0	
Actuated g/C Ratio		0.41	0.41				0.44	0.44			0.44	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		574	482				335	1211			1150	
v/s Ratio Prot								c0.21			0.06	
v/s Ratio Perm		c0.11	0.01				0.04					
v/c Ratio		0.27	0.02				0.08	0.49			0.14	
Uniform Delay, d1		13.5	12.1				11.3	13.8			11.6	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		1.1	0.1				0.5	1.4			0.3	
Delay (s)		14.7	12.2				11.7	15.2			11.9	
Level of Service		B	B				B	B			B	
Approach Delay (s)		14.3			0.0			15.1			11.9	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

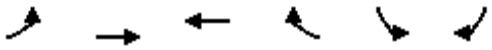


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	302	112	121	688	40	321	64	240	68	26	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1504	3505	1435	1433	3360		1618	1356	1265	1517	1398	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1504	3505	1435	1433	3360		1618	1356	1265	1517	1398	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	318	118	127	724	42	338	67	253	72	27	58
RTOR Reduction (vph)	0	0	94	0	3	0	0	0	197	0	46	0
Lane Group Flow (vph)	6	318	24	127	763	0	199	206	56	72	39	0
Confl. Peds. (#/hr)			20						20			
Heavy Vehicles (%)	20%	3%	8%	26%	3%	68%	6%	76%	24%	19%	50%	9%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	1.1	18.5	18.5	12.9	30.3		19.8	19.8	19.8	18.6	18.6	
Effective Green, g (s)	1.1	18.5	18.5	12.9	30.3		19.8	19.8	19.8	18.6	18.6	
Actuated g/C Ratio	0.01	0.21	0.21	0.14	0.34		0.22	0.22	0.22	0.21	0.21	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	18	722	295	205	1133		356	298	278	314	289	
v/s Ratio Prot	0.00	0.09		c0.09	c0.23		0.12	c0.15		c0.05	0.03	
v/s Ratio Perm			0.02						0.04			
v/c Ratio	0.33	0.44	0.08	0.62	0.67		0.56	0.69	0.20	0.23	0.13	
Uniform Delay, d1	44.0	31.1	28.8	36.1	25.5		31.1	32.2	28.5	29.6	29.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.6	0.4	0.1	5.5	1.6		1.9	6.8	0.4	1.7	1.0	
Delay (s)	54.6	31.6	28.9	41.6	27.1		33.0	38.9	28.9	31.3	30.0	
Level of Service	D	C	C	D	C		C	D	C	C	C	
Approach Delay (s)		31.2			29.2			33.3			30.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	404	91	186	699	217	103	177	374	137	77	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.90		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1433	3188		1626	3438	1495	1444	2823		1612	2744	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1433	3188		1626	3438	1495	1444	2823		1612	2744	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	125	416	94	192	721	224	106	182	386	141	79	28
RTOR Reduction (vph)	0	20	0	0	0	184	0	326	0	0	24	0
Lane Group Flow (vph)	125	490	0	192	721	40	106	242	0	141	83	0
Confl. Peds. (#/hr)			20	1								
Confl. Bikes (#/hr)			75									
Heavy Vehicles (%)	26%	8%	10%	11%	5%	8%	25%	23%	11%	12%	18%	50%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.30	0.30		0.18	0.18	0.18	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	432	963		287	608	264	225	441		251	428	
v/s Ratio Prot	0.09	c0.15		0.12	c0.21		0.07	c0.09		c0.09	0.03	
v/s Ratio Perm						0.03						
v/c Ratio	0.29	0.51		0.67	1.19	0.15	0.47	0.55		0.56	0.19	
Uniform Delay, d1	25.6	27.6		36.9	39.5	33.4	36.9	37.4		37.5	35.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	1.9		11.7	99.5	1.2	6.9	4.9		8.8	1.0	
Delay (s)	27.3	29.5		48.6	139.0	34.6	43.8	42.2		46.3	36.3	
Level of Service	C	C		D	F	C	D	D		D	D	
Approach Delay (s)		29.1			103.2			42.5			41.9	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	64.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	104	859	902	36	3	203
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	112	924	970	39	3	218
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1120	405			
pX, platoon unblocked	0.88				0.88	0.88
vC, conflicting volume	1011				1677	506
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	736				1494	162
tC, single (s)	4.9				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.6				3.5	3.4
p0 queue free %	81				96	70
cM capacity (veh/h)	575				82	725

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	420	616	647	362	222
Volume Left	112	0	0	0	3
Volume Right	0	0	0	39	218
cSH	575	1700	1700	1700	651
Volume to Capacity	0.19	0.36	0.38	0.21	0.34
Queue Length 95th (ft)	18	0	0	0	38
Control Delay (s)	5.6	0.0	0.0	0.0	13.4
Lane LOS	A				B
Approach Delay (s)	2.3		0.0		13.4
Approach LOS					B

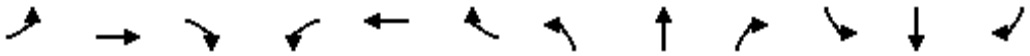
Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	192	0	0	0	0	629
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	198	0	0	0	0	648
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	324	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	324	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	69	100			100	
cM capacity (veh/h)	639	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	99	99	324	324
Volume Left	99	99	0	0
Volume Right	0	0	0	0
cSH	639	639	1700	1700
Volume to Capacity	0.15	0.15	0.19	0.19
Queue Length 95th (ft)	14	14	0	0
Control Delay (s)	11.7	11.7	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	11.7		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	591	142	133	634	0	0	0	0	145	477	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.95		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.97		1.00	1.00						0.97	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3325		1770	3471						3371	
Flt Permitted		1.00		0.28	1.00						0.99	
Satd. Flow (perm)		3325		516	3471						3371	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	616	148	139	660	0	0	0	0	151	497	196
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	745	0	139	660	0	0	0	0	0	818	0
Confl. Peds. (#/hr)										7		3
Confl. Bikes (#/hr)						1						36
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		51.0		51.0	51.0						49.0	
Effective Green, g (s)		51.0		51.0	51.0						49.0	
Actuated g/C Ratio		0.46		0.46	0.46						0.45	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		1541		239	1609						1501	
v/s Ratio Prot		0.22			0.19							
v/s Ratio Perm				c0.27							0.24	
v/c Ratio		0.48		0.58	0.41						0.54	
Uniform Delay, d1		20.4		21.7	19.5						22.3	
Progression Factor		1.00		0.51	0.43						1.00	
Incremental Delay, d2		1.1		8.7	0.7						1.4	
Delay (s)		21.5		19.7	9.1						23.8	
Level of Service		C		B	A						C	
Approach Delay (s)		21.5			11.0			0.0			23.8	
Approach LOS		C			B			A			C	

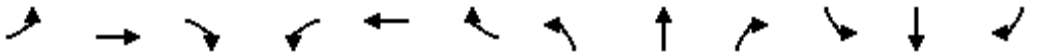
Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	38	86	9	5	1	0	0	0	0	8	540	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	41	92	10	5	1	0	0	0	0	9	581	3
Pedestrians		3						1				
Lane Width (ft)		12.0						0.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	603	602	296	364	604	0	587			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	603	602	296	364	604	0	587			0		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	78	99	99	100	100	100			99		
cM capacity (veh/h)	367	413	705	464	412	1091	996			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	143	6	299	294
Volume Left	41	5	9	0
Volume Right	10	0	0	3
cSH	410	454	1636	1700
Volume to Capacity	0.35	0.01	0.01	0.17
Queue Length 95th (ft)	38	1	0	0
Control Delay (s)	18.4	13.0	0.3	0.0
Lane LOS	C	B	A	
Approach Delay (s)	18.4	13.0	0.1	
Approach LOS	C	B		

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	28.9%	ICU Level of Service	A	
Analysis Period (min)	15			



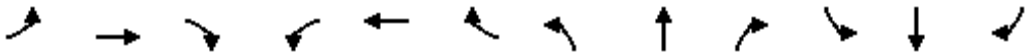
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	100	0	0	112	134	107	320	95	93	0	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.92		1.00	0.97		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1160	3195			2744		1014	2884		1570		2349
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1160	3195			2744		1014	2884		1570		2349
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	159	111	0	0	124	149	119	356	106	103	0	232
RTOR Reduction (vph)	0	0	0	0	131	0	0	21	0	0	0	199
Lane Group Flow (vph)	159	111	0	0	142	0	107	453	0	103	0	33
Confl. Peds. (#/hr)							4					4
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	40%	13%	0%	0%	18%	21%	62%	15%	13%	15%	0%	21%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	15.8	15.8			8.9		17.2	17.2		10.1		10.1
Effective Green, g (s)	15.8	15.8			8.9		17.2	17.2		10.1		10.1
Actuated g/C Ratio	0.22	0.22			0.12		0.24	0.24		0.14		0.14
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	254	701			339		242	688		220		329
v/s Ratio Prot	c0.14	0.03			c0.05		0.11	c0.16		c0.07		0.01
v/s Ratio Perm												
v/c Ratio	0.63	0.16			0.42		0.44	0.66		0.47		0.10
Uniform Delay, d1	25.4	22.7			29.2		23.3	24.8		28.5		27.0
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	4.8	0.1			0.8		5.8	4.9		1.6		0.1
Delay (s)	30.2	22.8			30.0		29.1	29.7		30.1		27.1
Level of Service	C	C			C		C	C		C		C
Approach Delay (s)		27.2			30.0			29.5			28.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	171	198	36	28	60	86	6	229	157	210	128	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	188	218	40	31	66	95	7	252	173	231	141	0
RTOR Reduction (vph)	0	0	27	0	0	83	0	102	0	0	0	0
Lane Group Flow (vph)	188	218	13	31	66	12	7	323	0	231	141	0
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	45%	52%	94%	63%	64%	50%	80%	79%	62%	50%	93%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Effective Green, g (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Actuated g/C Ratio	0.32	0.32	0.32	0.12	0.12	0.12	0.24	0.24		0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	404	771	270	138	275	132	242	476		170	264	
v/s Ratio Prot	c0.15	c0.09		0.03	0.03		0.01	c0.16		c0.19	0.08	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.47	0.28	0.05	0.22	0.24	0.09	0.03	0.68		1.36	0.53	
Uniform Delay, d1	32.2	30.1	27.8	47.3	47.4	46.5	34.7	41.3		51.5	47.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	0.9	0.3	3.7	2.1	1.3	0.2	7.6		194.7	7.5	
Delay (s)	36.0	31.0	28.1	51.0	49.4	47.8	35.0	48.9		246.2	55.4	
Level of Service	D	C	C	D	D	D	C	D		F	E	
Approach Delay (s)		32.9			48.9			48.7			173.9	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	76.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

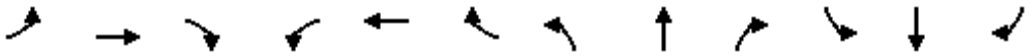
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	638	55	76	755	64	37	251	69	79	232	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.91			0.91			0.95			0.95	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.97			0.97	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		4859			4994			3362			3285	
Flt Permitted		0.75			0.79			0.88			0.81	
Satd. Flow (perm)		3675			3944			2985			2686	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	672	58	80	795	67	39	264	73	83	244	96
RTOR Reduction (vph)	0	13	0	0	13	0	0	23	0	0	29	0
Lane Group Flow (vph)	0	794	0	0	929	0	0	353	0	0	394	0
Confl. Peds. (#/hr)	20		12	12		20	17		11	11		17
Confl. Bikes (#/hr)			10			8			12			9
Heavy Vehicles (%)	2%	5%	7%	2%	2%	2%	2%	3%	4%	2%	3%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		24.2			24.2			33.3			33.3	
Effective Green, g (s)		24.2			24.2			33.3			33.3	
Actuated g/C Ratio		0.36			0.36			0.49			0.49	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1317			1413			1472			1325	
v/s Ratio Prot												
v/s Ratio Perm		0.22			c0.24			0.12			c0.15	
v/c Ratio		0.60			0.66			0.24			0.30	
Uniform Delay, d1		17.7			18.2			9.8			10.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.8			1.1			0.4			0.6	
Delay (s)		18.5			19.3			10.2			10.7	
Level of Service		B			B			B			B	
Approach Delay (s)		18.5			19.3			10.2			10.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	67.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

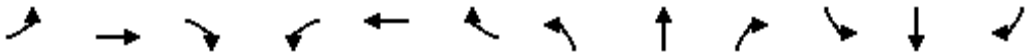
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	187	12	5	768	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	0	0	193	12	5	792	0	0	0	0
Pedestrians		16			1						3	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	534	819	16	803	819	400	16			793		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	534	819	16	803	819	400	16			793		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	38	98	100			100		
cM capacity (veh/h)	214	311	1066	277	311	605	1615			836		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	129	77	269	528
Volume Left	0	0	5	0
Volume Right	0	12	0	0
cSH	311	338	1615	1700
Volume to Capacity	0.41	0.23	0.00	0.31
Queue Length 95th (ft)	49	21	0	0
Control Delay (s)	24.5	18.8	0.2	0.0
Lane LOS	C	C	A	
Approach Delay (s)	22.3		0.1	
Approach LOS	C			

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	34.4%	ICU Level of Service	A	
Analysis Period (min)	15			

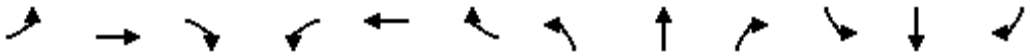


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	325	410	0	0	628	131	138	521	162	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.91			0.95			0.95				
Frpb, ped/bikes		1.00			1.00			0.99				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.97			0.97				
Flt Protected		0.98			1.00			0.99				
Satd. Flow (prot)		4786			3390			3339				
Flt Permitted		0.66			1.00			0.99				
Satd. Flow (perm)		3237			3390			3339				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	339	427	0	0	654	136	144	543	169	0	0	0
RTOR Reduction (vph)	0	0	0	0	16	0	0	19	0	0	0	0
Lane Group Flow (vph)	0	766	0	0	774	0	0	837	0	0	0	0
Confl. Peds. (#/hr)	2					2			4	4		
Confl. Bikes (#/hr)			1						44			
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)		51.0			51.0			49.0				
Effective Green, g (s)		51.0			51.0			49.0				
Actuated g/C Ratio		0.46			0.46			0.45				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		1500			1571			1487				
v/s Ratio Prot					0.23							
v/s Ratio Perm		c0.24						0.25				
v/c Ratio		1.54dl			0.49			0.56				
Uniform Delay, d1		20.7			20.5			22.6				
Progression Factor		0.48			1.00			1.00				
Incremental Delay, d2		1.1			1.1			0.5				
Delay (s)		11.0			21.6			23.1				
Level of Service		B			C			C				
Approach Delay (s)		11.0			21.6			23.1			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

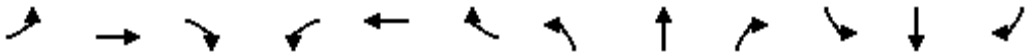
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	124	0	0	0	1	5	6	692	3	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	133	0	0	0	1	5	6	744	3	0	0	0
Pedestrians		12			1						1	
Lane Width (ft)		12.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	404	773	12	760	772	376	12			748		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	404	773	12	760	772	376	12			748		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	100	100	100	100	99	100			100		
cM capacity (veh/h)	500	327	1061	295	328	627	1604			869		

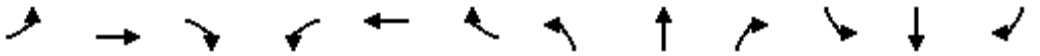
Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	133	6	378	375
Volume Left	133	0	6	0
Volume Right	0	5	0	3
cSH	500	544	1604	1700
Volume to Capacity	0.27	0.01	0.00	0.22
Queue Length 95th (ft)	27	1	0	0
Control Delay (s)	14.8	11.7	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	14.8	11.7	0.1	
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	39.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	243	0	49	0	0	0	43	138	0	0	69	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.95	
Flpb, ped/bikes		0.98	1.00				0.98	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.89	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1773	1549				1517	3471			2963	
Flt Permitted		0.76	1.00				0.57	1.00			1.00	
Satd. Flow (perm)		1414	1549				907	3471			2963	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	276	0	56	0	0	0	49	157	0	0	78	224
RTOR Reduction (vph)	0	0	32	0	0	0	0	0	0	0	128	0
Lane Group Flow (vph)	0	276	24	0	0	0	49	157	0	0	174	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	17%	4%	0%	0%	13%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		30.0	30.0				30.0	30.0			30.0	
Effective Green, g (s)		30.0	30.0				30.0	30.0			30.0	
Actuated g/C Ratio		0.43	0.43				0.43	0.43			0.43	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		606	663				388	1487			1269	
v/s Ratio Prot								0.05			c0.06	
v/s Ratio Perm		c0.20	0.02				0.05					
v/c Ratio		0.46	0.04				0.13	0.11			0.14	
Uniform Delay, d1		14.2	11.6				12.1	12.0			12.1	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		2.5	0.1				0.7	0.1			0.2	
Delay (s)		16.7	11.7				12.8	12.1			12.4	
Level of Service		B	B				B	B			B	
Approach Delay (s)		15.8			0.0			12.3			12.4	
Approach LOS		B			A			B			B	

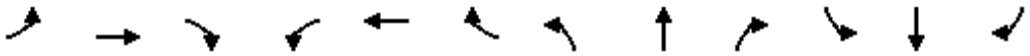
Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	216	83	164	623	26	99	15	230	44	14	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1357	3471	1468	1687	3410		1649	1502	1449	1433	1343	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1357	3471	1468	1687	3410		1649	1502	1449	1433	1343	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	235	90	178	677	28	108	16	250	48	15	24
RTOR Reduction (vph)	0	0	68	0	2	0	0	0	149	0	22	0
Lane Group Flow (vph)	35	235	22	178	703	0	62	62	101	48	17	0
Confl. Peds. (#/hr)			20						20			
Heavy Vehicles (%)	33%	4%	6%	7%	4%	35%	4%	50%	8%	26%	45%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	4.6	24.0	24.0	8.3	27.7		40.4	40.4	40.4	7.3	7.3	
Effective Green, g (s)	4.6	24.0	24.0	8.3	27.7		40.4	40.4	40.4	7.3	7.3	
Actuated g/C Ratio	0.05	0.24	0.24	0.08	0.28		0.40	0.40	0.40	0.07	0.07	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	62	833	352	140	944		666	606	585	104	98	
v/s Ratio Prot	0.03	0.07		c0.11	c0.21		0.04	0.04		c0.03	0.01	
v/s Ratio Perm			0.01						c0.07			
v/c Ratio	0.56	0.28	0.06	1.27	0.74		0.09	0.10	0.17	0.46	0.17	
Uniform Delay, d1	46.7	31.0	29.3	45.9	32.9		18.5	18.5	19.1	44.5	43.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.2	0.2	0.1	166.4	3.2		0.3	0.3	0.6	3.2	0.8	
Delay (s)	58.0	31.2	29.4	212.2	36.1		18.7	18.9	19.7	47.7	44.3	
Level of Service	E	C	C	F	D		B	B	B	D	D	
Approach Delay (s)		33.3			71.6			19.4			46.2	
Approach LOS		C			E			B			D	

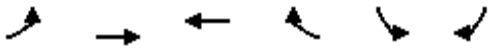
Intersection Summary			
HCM 2000 Control Delay	50.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	308	76	151	678	250	107	109	173	127	88	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	3256		1703	3505	1543	1583	3033		1736	2819	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1626	3256		1703	3505	1543	1583	3033		1736	2819	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	328	81	161	721	266	114	116	184	135	94	47
RTOR Reduction (vph)	0	22	0	0	0	219	0	155	0	0	40	0
Lane Group Flow (vph)	74	387	0	161	721	47	114	145	0	135	101	0
Confl. Peds. (#/hr)			20	1								
Confl. Bikes (#/hr)			75			3						
Heavy Vehicles (%)	11%	4%	13%	6%	3%	3%	14%	5%	10%	4%	12%	41%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		17.0	17.0	17.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.30	0.30		0.18	0.18	0.18	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	491	983		301	620	273	247	473		271	440	
v/s Ratio Prot	0.05	c0.12		0.09	c0.21		c0.07	0.05		c0.08	0.04	
v/s Ratio Perm						0.03						
v/c Ratio	0.15	0.39		0.53	1.16	0.17	0.46	0.31		0.50	0.23	
Uniform Delay, d1	24.5	26.5		35.9	39.5	33.5	36.8	35.9		37.1	35.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.2		6.7	90.2	1.4	6.1	1.7		6.4	1.2	
Delay (s)	25.1	27.7		42.6	129.7	34.9	42.9	37.6		43.5	36.7	
Level of Service	C	C		D	F	C	D	D		D	D	
Approach Delay (s)		27.3			95.5			39.0			40.0	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	64.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	54	608	932	52	4	163
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	56	627	961	54	4	168
Pedestrians		2				
Lane Width (ft)		12.0				
Walking Speed (ft/s)		4.0				
Percent Blockage		0				
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1120	405			
pX, platoon unblocked	0.87				0.87	0.87
vC, conflicting volume	1014				1412	509
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	710				1169	127
tC, single (s)	4.9				7.5	7.0
tC, 2 stage (s)						
tF (s)	2.6				3.8	3.3
p0 queue free %	90				96	78
cM capacity (veh/h)	576				114	776

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	265	418	641	374	172
Volume Left	56	0	0	0	4
Volume Right	0	0	0	54	168
cSH	576	1700	1700	1700	681
Volume to Capacity	0.10	0.25	0.38	0.22	0.25
Queue Length 95th (ft)	8	0	0	0	25
Control Delay (s)	3.5	0.0	0.0	0.0	12.1
Lane LOS	A				B
Approach Delay (s)	1.4		0.0		12.1
Approach LOS					B

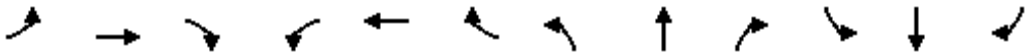
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	168	0	0	0	0	595
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	193	0	0	0	0	684
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	342	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	342	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	69	100			100	
cM capacity (veh/h)	620	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	97	97	342	342
Volume Left	97	97	0	0
Volume Right	0	0	0	0
cSH	620	620	1700	1700
Volume to Capacity	0.16	0.16	0.20	0.20
Queue Length 95th (ft)	14	14	0	0
Control Delay (s)	11.9	11.9	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	11.9		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	333	139	154	629	0	0	0	0	127	386	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.95		1.00	0.95						0.95	
Frpb, ped/bikes		0.99		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.96		1.00	1.00						0.95	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3235		1767	3539						3253	
Flt Permitted		1.00		0.41	1.00						0.99	
Satd. Flow (perm)		3235		756	3539						3253	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	354	148	164	669	0	0	0	0	135	411	260
RTOR Reduction (vph)	0	42	0	0	0	0	0	0	0	0	52	0
Lane Group Flow (vph)	0	460	0	164	669	0	0	0	0	0	754	0
Confl. Peds. (#/hr)			4	4						4		2
Confl. Bikes (#/hr)			3			2						21
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		46.0		46.0	46.0						54.0	
Effective Green, g (s)		46.0		46.0	46.0						54.0	
Actuated g/C Ratio		0.42		0.42	0.42						0.49	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		1352		316	1479						1596	
v/s Ratio Prot		0.14			0.19							
v/s Ratio Perm				c0.22							0.23	
v/c Ratio		0.34		0.52	0.45						0.47	
Uniform Delay, d1		21.7		23.8	23.0						18.6	
Progression Factor		1.00		0.36	0.35						1.00	
Incremental Delay, d2		0.7		1.3	0.2						1.0	
Delay (s)		22.4		9.9	8.2						19.6	
Level of Service		C		A	A						B	
Approach Delay (s)		22.4			8.6			0.0			19.6	
Approach LOS		C			A			A			B	

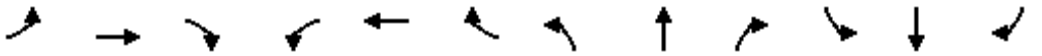
Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	63	18	6	0	12	0	0	0	32	445	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	82	70	20	7	0	13	0	0	0	36	494	14
Pedestrians								1				
Lane Width (ft)								0.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	586	573	255	374	580	0	509			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	586	573	255	374	580	0	509			0		
tC, single (s)	7.7	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	78	83	97	99	100	99	100			98		
cM capacity (veh/h)	370	423	750	458	419	1091	1066			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	172	20	283	262
Volume Left	82	7	36	0
Volume Right	20	13	0	14
cSH	416	747	1636	1700
Volume to Capacity	0.41	0.03	0.02	0.15
Queue Length 95th (ft)	50	2	2	0
Control Delay (s)	19.6	10.0	1.1	0.0
Lane LOS	C	A	A	
Approach Delay (s)	19.6	10.0	0.6	
Approach LOS	C	A		

Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	33.4%	ICU Level of Service	A	
Analysis Period (min)	15			

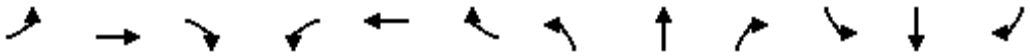


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	32	0	0	152	137	78	182	147	74	0	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.93		1.00	0.93		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1624	3471			3077		1441	2988		1543		2682
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1624	3471			3077		1441	2988		1543		2682
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	21	37	0	0	175	157	90	209	169	85	0	248
RTOR Reduction (vph)	0	0	0	0	132	0	0	111	0	0	0	229
Lane Group Flow (vph)	21	37	0	0	200	0	81	276	0	85	0	19
Confl. Peds. (#/hr)	6					6						
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	0%	4%	0%	0%	9%	7%	14%	7%	9%	17%	0%	6%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	3.6	3.6			8.7		18.5	18.5		4.1		4.1
Effective Green, g (s)	3.6	3.6			8.7		18.5	18.5		4.1		4.1
Actuated g/C Ratio	0.07	0.07			0.16		0.34	0.34		0.08		0.08
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	108	231			496		494	1025		117		204
v/s Ratio Prot	c0.01	0.01			c0.07		0.06	c0.09		c0.06		0.01
v/s Ratio Perm												
v/c Ratio	0.19	0.16			0.40		0.16	0.27		0.73		0.09
Uniform Delay, d1	23.8	23.7			20.3		12.3	12.8		24.4		23.2
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	0.9	0.3			0.5		0.7	0.6		20.0		0.2
Delay (s)	24.7	24.1			20.8		13.0	13.5		44.3		23.4
Level of Service	C	C			C		B	B		D		C
Approach Delay (s)		24.3			20.8			13.4			28.7	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	53.9	Sum of lost time (s)	19.0
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	31	1	16	31	82	0	9	26	72	13	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	793	1357	3471	1328		2621		1703	2356	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	793	1357	3471	1328		2621		1703	2356	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	13	38	1	20	38	100	0	11	32	88	16	1
RTOR Reduction (vph)	0	0	1	0	0	63	0	24	0	0	1	0
Lane Group Flow (vph)	13	38	0	20	38	37	0	19	0	88	16	0
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			4			2						3
Heavy Vehicles (%)	0%	0%	100%	33%	4%	20%	0%	38%	17%	6%	55%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	10.0	39.0	39.0	15.0	44.0	44.0		30.0		16.0	42.0	
Effective Green, g (s)	10.0	39.0	39.0	15.0	44.0	44.0		30.0		16.0	42.0	
Actuated g/C Ratio	0.08	0.32	0.32	0.12	0.37	0.37		0.25		0.13	0.35	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Grp Cap (vph)	150	1173	257	169	1272	486		655		227	824	
v/s Ratio Prot	0.01	0.01		c0.01	0.01			c0.01		c0.05	0.01	
v/s Ratio Perm			0.00			c0.03						
v/c Ratio	0.09	0.03	0.00	0.12	0.03	0.08		0.03		0.39	0.02	
Uniform Delay, d1	50.8	27.6	27.3	46.6	24.3	24.8		34.0		47.5	25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.1	0.0	1.4	0.0	0.3		0.1		4.9	0.0	
Delay (s)	51.9	27.7	27.4	48.1	24.4	25.1		34.1		52.5	25.6	
Level of Service	D	C	C	D	C	C		C		D	C	
Approach Delay (s)		33.7			27.8			34.1			48.1	
Approach LOS		C			C			C			D	

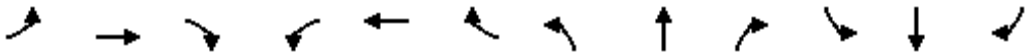
Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	483	24	58	670	61	45	125	45	77	165	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.91			0.91			0.95			0.95	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.97			0.95	
Flt Protected		0.99			1.00			0.99			0.99	
Satd. Flow (prot)		4951			4970			3443			3304	
Flt Permitted		0.75			0.85			0.84			0.84	
Satd. Flow (perm)		3733			4233			2938			2813	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	78	488	24	59	677	62	45	126	45	78	167	107
RTOR Reduction (vph)	0	7	0	0	16	0	0	21	0	0	50	0
Lane Group Flow (vph)	0	583	0	0	782	0	0	195	0	0	302	0
Confl. Peds. (#/hr)	6		3	3		6	6		5	5		6
Confl. Bikes (#/hr)			15			13			14			11
Heavy Vehicles (%)	0%	4%	0%	0%	3%	0%	0%	0%	0%	2%	4%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		20.6			20.6			33.5			33.5	
Effective Green, g (s)		20.6			20.6			33.5			33.5	
Actuated g/C Ratio		0.32			0.32			0.52			0.52	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1199			1360			1535			1470	
v/s Ratio Prot												
v/s Ratio Perm		0.16			c0.18			0.07			c0.11	
v/c Ratio		0.49			0.58			0.13			0.21	
Uniform Delay, d1		17.5			18.1			7.8			8.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.6			0.2			0.3	
Delay (s)		17.8			18.7			8.0			8.5	
Level of Service		B			B			A			A	
Approach Delay (s)		17.8			18.7			8.0			8.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

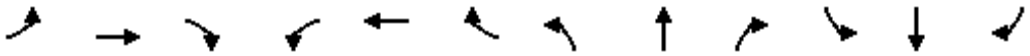
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	164	9	4	438	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	0	0	189	10	5	503	0	0	0	0
Pedestrians		3			3						2	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	371	519	3	516	519	257	3			506		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	371	519	3	516	519	257	3			506		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	59	99	100			100		
cM capacity (veh/h)	379	462	1086	433	462	747	1632			1066		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	126	73	172	336
Volume Left	0	0	5	0
Volume Right	0	10	0	0
cSH	462	488	1632	1700
Volume to Capacity	0.27	0.15	0.00	0.20
Queue Length 95th (ft)	27	13	0	0
Control Delay (s)	15.7	13.7	0.2	0.0
Lane LOS	C	B	A	
Approach Delay (s)	14.9		0.1	
Approach LOS	B			

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	27.9%	ICU Level of Service	A	
Analysis Period (min)	15			

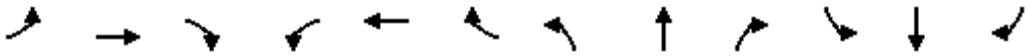


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	166	293	0	0	663	82	121	269	137	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.91			0.95			0.95				
Frpb, ped/bikes		1.00			1.00			0.99				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.98			0.96				
Flt Protected		0.98			1.00			0.99				
Satd. Flow (prot)		4826			3476			3359				
Flt Permitted		0.66			1.00			0.99				
Satd. Flow (perm)		3245			3476			3359				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	177	312	0	0	705	87	129	286	146	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	32	0	0	0	0
Lane Group Flow (vph)	0	489	0	0	783	0	0	529	0	0	0	0
Confl. Peds. (#/hr)	1					1			8			
Confl. Bikes (#/hr)			2			2			27			
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)		46.0			46.0			54.0				
Effective Green, g (s)		46.0			46.0			54.0				
Actuated g/C Ratio		0.42			0.42			0.49				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		1357			1453			1648				
v/s Ratio Prot					c0.23							
v/s Ratio Perm		0.15						0.16				
v/c Ratio		0.95dl			0.54			0.32				
Uniform Delay, d1		21.9			24.0			16.9				
Progression Factor		0.65			1.00			1.00				
Incremental Delay, d2		0.7			0.4			0.1				
Delay (s)		15.0			24.4			17.0				
Level of Service		B			C			B				
Approach Delay (s)		15.0			24.4			17.0			0.0	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

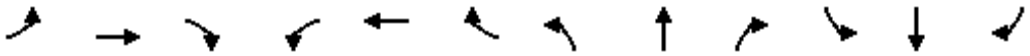
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	62	76	0	0	1	0	4	354	27	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	69	84	0	0	1	0	4	393	30	0	0	0
Pedestrians		9			13							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		1			1							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	215	454	9	472	439	225	9			436		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	215	454	9	472	439	225	9			436		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	83	100	100	100	100	100			100		
cM capacity (veh/h)	705	494	1069	406	504	776	1612			1122		

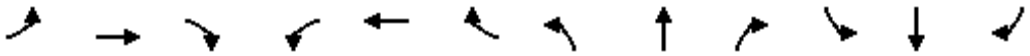
Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	153	1	201	227
Volume Left	69	0	4	0
Volume Right	0	0	0	30
cSH	571	504	1612	1700
Volume to Capacity	0.27	0.00	0.00	0.13
Queue Length 95th (ft)	27	0	0	0
Control Delay (s)	13.6	12.2	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	13.6	12.2	0.1	
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	32.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	0	10	0	0	0	7	724	2	0	141	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.99				1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.99	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1767	1199				1202	2735			2461	
Flt Permitted		0.76	1.00				0.65	1.00			1.00	
Satd. Flow (perm)		1408	1199				820	2735			2461	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	115	0	11	0	0	0	7	762	2	0	148	16
RTOR Reduction (vph)	0	0	7	0	0	0	0	1	0	0	9	0
Lane Group Flow (vph)	0	115	4	0	0	0	7	763	0	0	155	0
Confl. Peds. (#/hr)	2		1	1		2	1		2	2		1
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	0%	33%	0%	0%	0%	50%	32%	0%	0%	49%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		25.0	25.0				30.0	30.0			30.0	
Effective Green, g (s)		25.0	25.0				30.0	30.0			30.0	
Actuated g/C Ratio		0.38	0.38				0.46	0.46			0.46	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		541	461				378	1262			1135	
v/s Ratio Prot								c0.28			0.06	
v/s Ratio Perm		c0.08	0.00				0.01					
v/c Ratio		0.21	0.01				0.02	0.60			0.14	
Uniform Delay, d1		13.4	12.4				9.5	13.1			10.1	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		0.9	0.0				0.1	2.2			0.3	
Delay (s)		14.3	12.4				9.6	15.2			10.3	
Level of Service		B	B				A	B			B	
Approach Delay (s)		14.1			0.0			15.2			10.3	
Approach LOS		B			A			B			B	

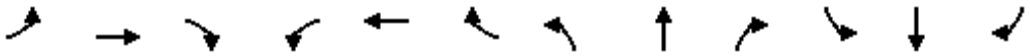
Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	393	118	66	900	52	407	84	249	89	34	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1504	3505	1495	1433	3360		1618	1346	1302	1517	1397	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1504	3505	1495	1433	3360		1618	1346	1302	1517	1397	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	414	124	69	947	55	428	88	262	94	36	76
RTOR Reduction (vph)	0	0	86	0	4	0	0	0	193	0	68	0
Lane Group Flow (vph)	8	414	38	69	998	0	257	259	69	94	44	0
Heavy Vehicles (%)	20%	3%	8%	26%	3%	68%	6%	76%	24%	19%	50%	9%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	0.7	24.1	24.1	5.6	29.0		20.9	20.9	20.9	8.2	8.2	
Effective Green, g (s)	0.7	24.1	24.1	5.6	29.0		20.9	20.9	20.9	8.2	8.2	
Actuated g/C Ratio	0.01	0.31	0.31	0.07	0.37		0.27	0.27	0.27	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	13	1071	457	101	1236		429	356	345	157	145	
v/s Ratio Prot	0.01	0.12		c0.05	c0.30		0.16	c0.19		c0.06	0.03	
v/s Ratio Perm			0.03						0.05			
v/c Ratio	0.62	0.39	0.08	0.68	0.81		0.60	0.73	0.20	0.60	0.30	
Uniform Delay, d1	38.9	21.5	19.5	35.7	22.4		25.3	26.4	22.5	33.7	32.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	64.0	0.2	0.1	17.4	4.0		2.3	7.2	0.3	15.7	5.3	
Delay (s)	103.0	21.8	19.6	53.1	26.3		27.5	33.6	22.8	49.5	38.0	
Level of Service	F	C	B	D	C		C	C	C	D	D	
Approach Delay (s)		22.5			28.1			27.9			43.2	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	475	116	240	840	281	129	232	487	176	101	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.90		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1433	3223		1626	3438	1495	1444	2823		1612	2822	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1433	3223		1626	3438	1495	1444	2823		1612	2822	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	153	490	120	247	866	290	133	239	502	181	104	25
RTOR Reduction (vph)	0	23	0	0	0	241	0	349	0	0	21	0
Lane Group Flow (vph)	153	587	0	247	866	49	133	392	0	181	108	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			3									
Heavy Vehicles (%)	26%	8%	10%	11%	5%	8%	25%	23%	11%	12%	18%	50%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.31	0.31		0.17	0.17	0.17	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	437	983		273	579	251	228	445		254	445	
v/s Ratio Prot	0.11	c0.18		0.15	c0.25		0.09	c0.14		c0.11	0.04	
v/s Ratio Perm						0.03						
v/c Ratio	0.35	0.60		0.90	1.50	0.19	0.58	0.88		0.71	0.24	
Uniform Delay, d1	25.7	28.0		38.8	39.5	34.0	37.1	39.1		38.0	35.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	2.7		34.6	232.1	1.7	10.5	21.3		15.7	1.3	
Delay (s)	27.9	30.7		73.4	271.6	35.7	47.6	60.4		53.6	36.3	
Level of Service	C	C		E	F	D	D	E		D	D	
Approach Delay (s)		30.1			187.9			58.4			46.4	
Approach LOS		C			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	105.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	128	1008	67	30	1079	17	54	0	22	3	7	232
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	135	1061	71	32	1136	18	57	0	23	3	7	244
Pedestrians								2			2	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1120			405							
pX, platoon unblocked	0.88			0.97			0.89	0.89	0.97	0.89	0.89	0.88
vC, conflicting volume	1156			1134			2247	2587	568	2033	2613	579
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	901			1077			2009	2390	494	1770	2419	244
tC, single (s)	4.9			4.1			7.9	6.5	7.1	7.5	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.6			2.2			3.7	4.0	3.4	3.5	4.0	3.4
p0 queue free %	72			95			0	100	95	91	63	62
cM capacity (veh/h)	485			635			9	21	489	35	20	640

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	665	601	599	586	80	255
Volume Left	135	0	32	0	57	3
Volume Right	0	71	0	18	23	244
cSH	485	1700	635	1700	12	303
Volume to Capacity	0.28	0.35	0.05	0.34	6.66	0.84
Queue Length 95th (ft)	28	0	4	0	Err	180
Control Delay (s)	8.0	0.0	1.4	0.0	Err	56.8
Lane LOS	A		A		F	F
Approach Delay (s)	4.2		0.7		Err	56.8
Approach LOS					F	F

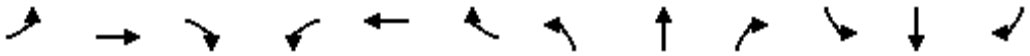
Intersection Summary			
Average Delay	294.5		
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	252	0	0	0	0	806
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	260	0	0	0	0	831
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	415	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	415	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	54	100			100	
cM capacity (veh/h)	560	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	130	130	415	415
Volume Left	130	130	0	0
Volume Right	0	0	0	0
cSH	560	560	1700	1700
Volume to Capacity	0.23	0.23	0.24	0.24
Queue Length 95th (ft)	22	22	0	0
Control Delay (s)	13.4	13.4	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	13.4		0.0	
Approach LOS	B			

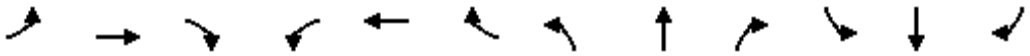
Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	748	116	160	739	0	0	0	0	186	622	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.91		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.98		1.00	1.00						0.97	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		4813		1770	3471						3372	
Flt Permitted		1.00		0.28	1.00						0.99	
Satd. Flow (perm)		4813		516	3471						3372	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	779	121	167	770	0	0	0	0	194	648	245
RTOR Reduction (vph)	0	20	0	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	880	0	167	770	0	0	0	0	0	1061	0
Confl. Peds. (#/hr)										7		3
Confl. Bikes (#/hr)						1						36
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		59.0		59.0	59.0						36.0	
Effective Green, g (s)		59.0		59.0	59.0						36.0	
Actuated g/C Ratio		0.56		0.56	0.56						0.34	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		2704		289	1950						1156	
v/s Ratio Prot		0.18			0.22							
v/s Ratio Perm				c0.32							0.31	
v/c Ratio		0.33		0.58	0.39						0.92	
Uniform Delay, d1		12.3		14.9	12.9						33.1	
Progression Factor		1.00		0.63	0.48						1.00	
Incremental Delay, d2		0.3		7.5	0.5						12.9	
Delay (s)		12.7		16.8	6.7						46.0	
Level of Service		B		B	A						D	
Approach Delay (s)		12.7			8.5			0.0			46.0	
Approach LOS		B			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	112.9%	ICU Level of Service	H
Analysis Period (min)	15		

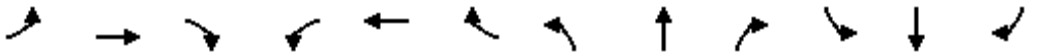
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	109	12	7	2	0	0	0	0	10	702	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	115	13	7	2	0	0	0	0	11	739	3
Pedestrians		3						1				
Lane Width (ft)		12.0						0.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	766	765	375	462	766	0	745			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	766	765	375	462	766	0	745			0		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	66	98	98	99	100	100			99		
cM capacity (veh/h)	278	333	627	348	332	1091	870			1636		

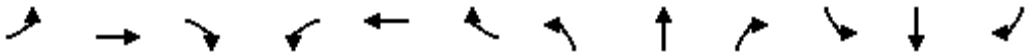
Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	127	9	380	373
Volume Left	0	7	11	0
Volume Right	13	0	0	3
cSH	349	344	1636	1700
Volume to Capacity	0.36	0.03	0.01	0.22
Queue Length 95th (ft)	41	2	0	0
Control Delay (s)	21.1	15.7	0.3	0.0
Lane LOS	C	C	A	
Approach Delay (s)	21.1	15.7	0.1	
Approach LOS	C	C		

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	33.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	168	115	0	0	129	153	106	373	111	106	0	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.92		1.00	0.97		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1160	3195			2746		1014	2889		1570		2349
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1160	3195			2746		1014	2889		1570		2349
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	177	121	0	0	136	161	112	393	117	112	0	256
RTOR Reduction (vph)	0	0	0	0	141	0	0	21	0	0	0	220
Lane Group Flow (vph)	177	121	0	0	156	0	101	500	0	112	0	36
Confl. Peds. (#/hr)							4					4
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	40%	13%	0%	0%	18%	21%	62%	15%	13%	15%	0%	21%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	17.1	17.1			9.3		18.1	18.1		10.7		10.7
Effective Green, g (s)	17.1	17.1			9.3		18.1	18.1		10.7		10.7
Actuated g/C Ratio	0.23	0.23			0.12		0.24	0.24		0.14		0.14
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	263	726			339		244	695		223		334
v/s Ratio Prot	c0.15	0.04			c0.06		0.10	c0.17		c0.07		0.02
v/s Ratio Perm												
v/c Ratio	0.67	0.17			0.46		0.41	0.72		0.50		0.11
Uniform Delay, d1	26.5	23.3			30.6		24.1	26.2		29.8		28.1
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	6.6	0.1			1.0		5.1	6.3		1.8		0.1
Delay (s)	33.1	23.4			31.6		29.2	32.6		31.6		28.2
Level of Service	C	C			C		C	C		C		C
Approach Delay (s)		29.2			31.6			32.0			29.3	
Approach LOS		C			C			C			C	

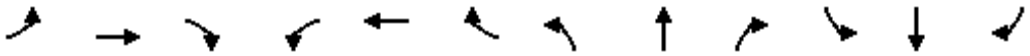
Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	75.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	201	233	43	34	71	78	7	269	185	232	150	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	212	245	45	36	75	82	7	283	195	244	158	0
RTOR Reduction (vph)	0	0	30	0	0	72	0	102	0	0	0	0
Lane Group Flow (vph)	212	245	15	36	75	10	7	376	0	244	158	0
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	45%	52%	94%	63%	64%	50%	80%	79%	62%	50%	93%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Effective Green, g (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Actuated g/C Ratio	0.32	0.32	0.32	0.12	0.12	0.12	0.24	0.24		0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	404	771	270	138	275	132	242	476		170	264	
v/s Ratio Prot	c0.17	c0.10		0.03	0.03		0.01	c0.19		c0.20	0.08	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.52	0.32	0.05	0.26	0.27	0.08	0.03	0.79		1.44	0.60	
Uniform Delay, d1	33.0	30.5	27.8	47.5	47.6	46.4	34.7	42.6		51.5	48.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.8	1.1	0.4	4.5	2.4	1.1	0.2	12.5		226.1	9.6	
Delay (s)	37.8	31.6	28.2	52.0	50.0	47.5	35.0	55.1		277.6	57.9	
Level of Service	D	C	C	D	D	D	C	E		F	E	
Approach Delay (s)		33.9			49.3			54.8			191.3	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	82.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	811	72	99	931	84	49	329	91	104	304	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3378		1770	3471		1770	1770		1770	1724	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3378		1770	3471		1770	1770		1770	1724	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	78	854	76	104	980	88	52	346	96	109	320	114
RTOR Reduction (vph)	0	7	0	0	7	0	0	10	0	0	13	0
Lane Group Flow (vph)	78	923	0	104	1061	0	52	432	0	109	421	0
Confl. Peds. (#/hr)	20		12	12		20	17		11	11		17
Confl. Bikes (#/hr)			10			8			12			9
Heavy Vehicles (%)	2%	5%	7%	2%	2%	2%	2%	3%	4%	2%	3%	9%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.4	34.8		4.0	33.4		3.9	33.1		4.0	33.2	
Effective Green, g (s)	5.4	34.8		4.0	33.4		3.9	33.1		4.0	33.2	
Actuated g/C Ratio	0.06	0.37		0.04	0.36		0.04	0.35		0.04	0.35	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	101	1251		75	1234		73	623		75	609	
v/s Ratio Prot	0.04	0.27		c0.06	c0.31		0.03	0.24		c0.06	c0.24	
v/s Ratio Perm												
v/c Ratio	0.77	0.74		1.39	0.86		0.71	0.69		1.45	0.69	
Uniform Delay, d1	43.6	25.6		45.0	28.1		44.4	26.0		45.0	26.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	29.9	2.3		237.1	6.2		27.8	6.2		263.6	6.3	
Delay (s)	73.5	27.9		282.1	34.3		72.3	32.3		308.5	32.3	
Level of Service	E	C		F	C		E	C		F	C	
Approach Delay (s)		31.4			56.3			36.5			87.7	
Approach LOS		C			E			D			F	

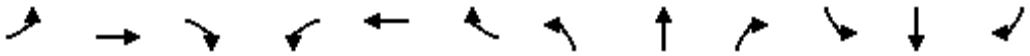
Intersection Summary			
HCM 2000 Control Delay	50.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	93.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	245	15	7	1001	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	0	0	253	15	7	1032	0	0	0	0
Pedestrians		16			1						3	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	691	1063	16	1047	1063	520	16			1033		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	691	1063	16	1047	1063	520	16			1033		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	100	100	0	97	100			100		
cM capacity (veh/h)	0	224	1066	184	224	506	1615			680		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	168	100	351	688
Volume Left	0	0	7	0
Volume Right	0	15	0	0
cSH	224	245	1615	1700
Volume to Capacity	0.75	0.41	0.00	0.40
Queue Length 95th (ft)	130	47	0	0
Control Delay (s)	57.9	29.4	0.2	0.0
Lane LOS	F	D	A	
Approach Delay (s)	47.3		0.1	
Approach LOS	E			

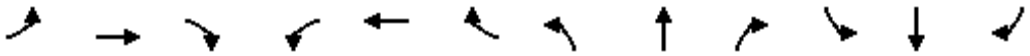
Intersection Summary				
Average Delay	9.8			
Intersection Capacity Utilization	42.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	420	514	0	0	753	171	146	684	186	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0				
Lane Util. Factor	1.00	0.95			0.91			0.95				
Frpb, ped/bikes	1.00	1.00			1.00			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.97			0.97				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1702	3406			4862			3347				
Flt Permitted	0.26	1.00			1.00			0.99				
Satd. Flow (perm)	458	3406			4862			3347				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	438	535	0	0	784	178	152	712	194	0	0	0
RTOR Reduction (vph)	0	0	0	0	29	0	0	18	0	0	0	0
Lane Group Flow (vph)	438	535	0	0	933	0	0	1040	0	0	0	0
Confl. Peds. (#/hr)	2					2			4	4		
Confl. Bikes (#/hr)			1						44			
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	59.0	59.0			59.0			36.0				
Effective Green, g (s)	59.0	59.0			59.0			36.0				
Actuated g/C Ratio	0.56	0.56			0.56			0.34				
Clearance Time (s)	5.0	5.0			5.0			5.0				
Vehicle Extension (s)	3.0	3.0			3.0			3.0				
Lane Grp Cap (vph)	257	1913			2731			1147				
v/s Ratio Prot		0.16			0.19							
v/s Ratio Perm	c0.96							0.31				
v/c Ratio	1.70	0.28			0.34			0.91				
Uniform Delay, d1	23.0	12.0			12.5			32.9				
Progression Factor	0.83	0.51			1.00			1.00				
Incremental Delay, d2	331.7	0.3			0.3			10.3				
Delay (s)	350.7	6.5			12.8			43.2				
Level of Service	F	A			B			D				
Approach Delay (s)		161.4			12.8			43.2			0.0	
Approach LOS		F			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	71.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	112.9%	ICU Level of Service	H
Analysis Period (min)	15		

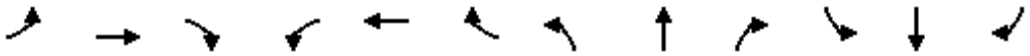
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	109	0	0	0	2	7	8	900	3	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	115	0	0	0	2	7	8	947	3	0	0	0
Pedestrians		12			1						1	
Lane Width (ft)		12.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	512	980	12	967	979	477	12			952		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	512	980	12	967	979	477	12			952		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	72	100	100	100	99	99	99			100		
cM capacity (veh/h)	414	248	1061	209	248	539	1604			730		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	115	9	482	477
Volume Left	115	0	8	0
Volume Right	0	7	0	3
cSH	414	428	1604	1700
Volume to Capacity	0.28	0.02	0.01	0.28
Queue Length 95th (ft)	28	2	0	0
Control Delay (s)	17.0	13.6	0.2	0.0
Lane LOS	C	B	A	
Approach Delay (s)	17.0	13.6	0.1	
Approach LOS	C	B		

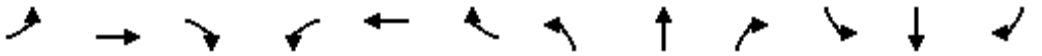
Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	44.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	0	20	0	0	0	10	181	0	0	91	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	1.00				1.00	1.00			0.99	
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.95	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1805	1615				1543	3471			3139	
Flt Permitted		0.76	1.00				0.66	1.00			1.00	
Satd. Flow (perm)		1439	1615				1079	3471			3139	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	117	0	21	0	0	0	11	191	0	0	96	42
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	23	0
Lane Group Flow (vph)	0	117	8	0	0	0	11	191	0	0	115	0
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	17%	4%	0%	0%	13%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		26.0	26.0				29.0	29.0			29.0	
Effective Green, g (s)		26.0	26.0				29.0	29.0			29.0	
Actuated g/C Ratio		0.40	0.40				0.45	0.45			0.45	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		575	646				481	1548			1400	
v/s Ratio Prot								c0.06			0.04	
v/s Ratio Perm		c0.08	0.01				0.01					
v/c Ratio		0.20	0.01				0.02	0.12			0.08	
Uniform Delay, d1		12.7	11.8				10.1	10.5			10.3	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		0.8	0.0				0.1	0.2			0.1	
Delay (s)		13.5	11.8				10.2	10.7			10.5	
Level of Service		B	B				B	B			B	
Approach Delay (s)		13.3			0.0			10.7			10.5	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

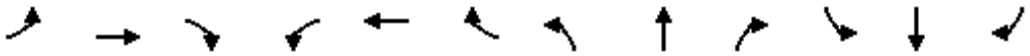
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	277	57	49	811	34	92	20	131	57	18	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1357	3471	1524	1687	3409		1649	1456	1495	1433	1344	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1357	3471	1524	1687	3409		1649	1456	1495	1433	1344	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	292	60	52	854	36	97	21	138	60	19	31
RTOR Reduction (vph)	0	0	41	0	3	0	0	0	90	0	29	0
Lane Group Flow (vph)	44	292	19	52	887	0	58	60	48	60	21	0
Heavy Vehicles (%)	33%	4%	6%	7%	4%	35%	4%	50%	8%	26%	45%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	4.6	31.2	31.2	6.3	32.9		35.0	35.0	35.0	8.1	8.1	
Effective Green, g (s)	4.6	31.2	31.2	6.3	32.9		35.0	35.0	35.0	8.1	8.1	
Actuated g/C Ratio	0.05	0.31	0.31	0.06	0.33		0.35	0.35	0.35	0.08	0.08	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	62	1076	472	105	1114		573	506	520	115	108	
v/s Ratio Prot	c0.03	0.08		0.03	c0.26		0.04	c0.04		c0.04	0.02	
v/s Ratio Perm			0.01						0.03			
v/c Ratio	0.71	0.27	0.04	0.50	0.80		0.10	0.12	0.09	0.52	0.20	
Uniform Delay, d1	47.3	26.1	24.2	45.6	30.8		22.2	22.3	22.1	44.4	43.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	31.0	0.1	0.0	3.6	4.0		0.4	0.5	0.4	4.2	0.9	
Delay (s)	78.3	26.3	24.3	49.3	34.8		22.5	22.8	22.5	48.6	44.1	
Level of Service	E	C	C	D	C		C	C	C	D	D	
Approach Delay (s)		31.8			35.6			22.5			46.6	
Approach LOS		C			D			C			D	

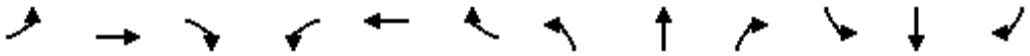
Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	100.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	262	91	185	748	318	129	143	213	156	116	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.91		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	3252		1703	3505	1543	1583	3043		1736	2923	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1626	3252		1703	3505	1543	1583	3043		1736	2923	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	71	276	96	195	787	335	136	151	224	164	122	39
RTOR Reduction (vph)	0	36	0	0	0	279	0	189	0	0	32	0
Lane Group Flow (vph)	71	336	0	195	787	56	136	186	0	164	129	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1			3						
Heavy Vehicles (%)	11%	4%	13%	6%	3%	3%	14%	5%	10%	4%	12%	41%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.31	0.31		0.17	0.17	0.17	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	496	992		286	590	259	249	480		274	461	
v/s Ratio Prot	0.04	c0.10		0.11	c0.22		c0.09	0.06		c0.09	0.04	
v/s Ratio Perm						0.04						
v/c Ratio	0.14	0.34		0.68	1.33	0.22	0.55	0.39		0.60	0.28	
Uniform Delay, d1	24.0	25.6		37.1	39.5	34.1	36.9	35.9		37.2	35.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.9		12.4	161.6	1.9	8.4	2.4		9.3	1.5	
Delay (s)	24.6	26.5		49.5	201.1	36.0	45.2	38.2		46.5	36.8	
Level of Service	C	C		D	F	D	D	D		D	D	
Approach Delay (s)		26.2			136.7			40.1			41.7	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	86.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	606	55	30	1048	8	72	7	39	5	17	151
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	57	625	57	31	1080	8	74	7	40	5	18	156
Pedestrians		2										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		4.0										
Percent Blockage		0										
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1120			405							
pX, platoon unblocked	0.87						0.87	0.87		0.87	0.87	0.87
vC, conflicting volume	1089			681			1535	1917	341	1616	1941	546
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	810			681			1321	1759	341	1414	1787	188
tC, single (s)	4.9			4.2			7.5	6.5	7.0	8.2	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.6			2.3			3.5	4.0	3.3	3.8	4.0	3.3
p0 queue free %	89			96			0	89	94	90	72	78
cM capacity (veh/h)	522			874			55	64	649	49	62	713

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	369	369	571	548	122	178
Volume Left	57	0	31	0	74	5
Volume Right	0	57	0	8	40	156
cSH	522	1700	874	1700	79	294
Volume to Capacity	0.11	0.22	0.04	0.32	1.53	0.61
Queue Length 95th (ft)	9	0	3	0	247	92
Control Delay (s)	3.4	0.0	1.0	0.0	384.1	34.5
Lane LOS	A		A		F	D
Approach Delay (s)	1.7		0.5		384.1	34.5
Approach LOS					F	D

Intersection Summary				
Average Delay	25.3			
Intersection Capacity Utilization	81.1%	ICU Level of Service	D	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	220	0	0	0	0	736
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	232	0	0	0	0	775
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	387	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	387	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	60	100			100	
cM capacity (veh/h)	581	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	116	116	387	387
Volume Left	116	116	0	0
Volume Right	0	0	0	0
cSH	581	581	1700	1700
Volume to Capacity	0.20	0.20	0.23	0.23
Queue Length 95th (ft)	18	18	0	0
Control Delay (s)	12.7	12.7	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	12.7		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	348	118	185	648	0	0	0	0	156	496	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.91		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.96		1.00	1.00						0.95	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		4678		1767	3539						3259	
Flt Permitted		1.00		0.46	1.00						0.99	
Satd. Flow (perm)		4678		857	3539						3259	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	366	124	195	682	0	0	0	0	164	522	312
RTOR Reduction (vph)	0	69	0	0	0	0	0	0	0	0	62	0
Lane Group Flow (vph)	0	421	0	195	682	0	0	0	0	0	936	0
Confl. Peds. (#/hr)			4	4						4		2
Confl. Bikes (#/hr)			3			2						21
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		38.0		38.0	38.0						37.0	
Effective Green, g (s)		38.0		38.0	38.0						37.0	
Actuated g/C Ratio		0.45		0.45	0.45						0.44	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		2091		383	1582						1418	
v/s Ratio Prot		0.09			0.19							
v/s Ratio Perm				c0.23							0.29	
v/c Ratio		0.20		0.51	0.43						0.66	
Uniform Delay, d1		14.3		16.8	16.1						19.0	
Progression Factor		1.00		0.41	0.36						1.00	
Incremental Delay, d2		0.2		1.0	0.2						2.4	
Delay (s)		14.5		7.9	5.9						21.4	
Level of Service		B		A	A						C	
Approach Delay (s)		14.5			6.4			0.0			21.4	
Approach LOS		B			A			A			C	

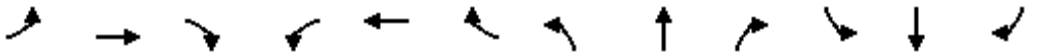
Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	97	2	24	8	0	15	0	0	0	42	564	17
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	102	2	25	8	0	16	0	0	0	44	594	18
Pedestrians								1				
Lane Width (ft)								0.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	707	691	307	413	700	0	612			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	707	691	307	413	700	0	612			0		
tC, single (s)	7.7	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	66	99	96	98	100	99	100			97		
cM capacity (veh/h)	300	360	695	483	356	1091	977			1636		

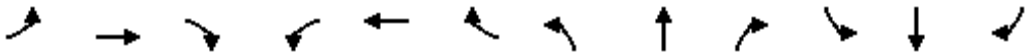
Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	129	24	341	315
Volume Left	102	8	44	0
Volume Right	25	16	0	18
cSH	339	759	1636	1700
Volume to Capacity	0.38	0.03	0.03	0.19
Queue Length 95th (ft)	44	2	2	0
Control Delay (s)	22.1	9.9	1.1	0.0
Lane LOS	C	A	A	
Approach Delay (s)	22.1	9.9	0.6	
Approach LOS	C	A		

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	37.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	32	0	0	172	151	56	202	172	79	0	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.93		1.00	0.93		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1624	3471			3080		1441	2982		1543		2682
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1624	3471			3080		1441	2982		1543		2682
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	34	0	0	181	159	59	213	181	83	0	256
RTOR Reduction (vph)	0	0	0	0	133	0	0	125	0	0	0	231
Lane Group Flow (vph)	22	34	0	0	207	0	53	275	0	83	0	25
Confl. Peds. (#/hr)	6					6						
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	0%	4%	0%	0%	9%	7%	14%	7%	9%	17%	0%	6%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	3.6	3.6			8.8		16.4	16.4		5.1		5.1
Effective Green, g (s)	3.6	3.6			8.8		16.4	16.4		5.1		5.1
Actuated g/C Ratio	0.07	0.07			0.17		0.31	0.31		0.10		0.10
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	110	236			512		446	924		148		258
v/s Ratio Prot	c0.01	0.01			c0.07		0.04	c0.09		c0.05		0.01
v/s Ratio Perm												
v/c Ratio	0.20	0.14			0.41		0.12	0.30		0.56		0.10
Uniform Delay, d1	23.3	23.2			19.7		13.1	13.9		22.8		21.8
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	0.9	0.3			0.5		0.5	0.8		4.8		0.2
Delay (s)	24.2	23.5			20.2		13.6	14.7		27.6		22.0
Level of Service	C	C			C		B	B		C		C
Approach Delay (s)		23.8			20.2			14.6			23.3	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	52.9	Sum of lost time (s)	19.0
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	36	1	19	36	55	0	11	31	44	15	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	794	1357	3471	1328		2621		1703	2356	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	794	1357	3471	1328		2621		1703	2356	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	38	1	20	38	58	0	12	33	46	16	1
RTOR Reduction (vph)	0	0	1	0	0	35	0	23	0	0	1	0
Lane Group Flow (vph)	14	38	0	20	38	23	0	22	0	46	16	0
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			4			2						3
Heavy Vehicles (%)	0%	0%	100%	33%	4%	20%	0%	38%	17%	6%	55%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	4.0	39.0	39.0	5.0	40.0	40.0		30.0		6.0	32.0	
Effective Green, g (s)	4.0	39.0	39.0	5.0	40.0	40.0		30.0		6.0	32.0	
Actuated g/C Ratio	0.04	0.39	0.39	0.05	0.40	0.40		0.30		0.06	0.32	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Grp Cap (vph)	72	1407	309	67	1388	531		786		102	753	
v/s Ratio Prot	0.01	0.01		c0.01	0.01			c0.01		c0.03	0.01	
v/s Ratio Perm			0.00			c0.02						
v/c Ratio	0.19	0.03	0.00	0.30	0.03	0.04		0.03		0.45	0.02	
Uniform Delay, d1	46.4	18.8	18.6	45.8	18.2	18.3		24.7		45.4	23.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	5.9	0.0	0.0	11.0	0.0	0.2		0.1		13.7	0.1	
Delay (s)	52.4	18.8	18.6	56.9	18.2	18.5		24.8		59.1	23.3	
Level of Service	D	B	B	E	B	B		C		E	C	
Approach Delay (s)		27.7			25.0			24.8			49.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.08		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	563	32	76	758	81	59	165	59	101	217	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3443		1805	3447		1805	1813		1770	1737	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3443		1805	3447		1805	1813		1770	1737	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	44	569	32	77	766	82	60	167	60	102	219	119
RTOR Reduction (vph)	0	5	0	0	9	0	0	13	0	0	18	0
Lane Group Flow (vph)	44	596	0	77	839	0	60	214	0	102	320	0
Confl. Peds. (#/hr)	6		3	3		6	6		5	5		6
Confl. Bikes (#/hr)			15			13			14			11
Heavy Vehicles (%)	0%	4%	0%	0%	3%	0%	0%	0%	0%	2%	4%	0%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	3.3	27.5		4.1	28.3		4.4	34.2		4.1	33.9	
Effective Green, g (s)	3.3	27.5		4.1	28.3		4.4	34.2		4.1	33.9	
Actuated g/C Ratio	0.04	0.31		0.05	0.32		0.05	0.39		0.05	0.39	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	67	1077		84	1109		90	705		82	669	
v/s Ratio Prot	0.02	0.17		c0.04	c0.24		0.03	0.12		c0.06	c0.18	
v/s Ratio Perm												
v/c Ratio	0.66	0.55		0.92	0.76		0.67	0.30		1.24	0.48	
Uniform Delay, d1	41.7	25.1		41.7	26.7		41.0	18.6		41.9	20.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.8	0.6		70.2	3.0		17.1	1.1		178.6	2.4	
Delay (s)	62.6	25.7		112.0	29.7		58.1	19.7		220.5	22.8	
Level of Service	E	C		F	C		E	B		F	C	
Approach Delay (s)		28.2			36.5			27.7			68.6	
Approach LOS		C			D			C			E	

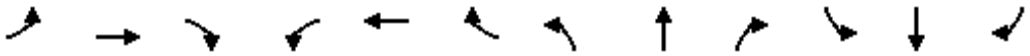
Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	87.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	215	12	5	556	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	0	226	13	5	585	0	0	0	0
Pedestrians		3			3						2	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	434	602	3	599	602	298	3			588		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	434	602	3	599	602	298	3			588		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	45	98	100			100		
cM capacity (veh/h)	283	414	1086	377	414	703	1632			994		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	151	88	200	390
Volume Left	0	0	5	0
Volume Right	0	13	0	0
cSH	414	440	1632	1700
Volume to Capacity	0.36	0.20	0.00	0.23
Queue Length 95th (ft)	41	18	0	0
Control Delay (s)	18.6	15.2	0.2	0.0
Lane LOS	C	C	A	
Approach Delay (s)	17.4		0.1	
Approach LOS	C			

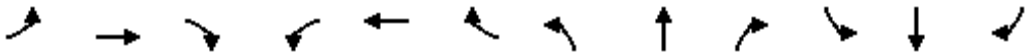
Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	33.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	304	0	0	727	108	108	353	131	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0				
Lane Util. Factor	1.00	0.95			0.91			0.95				
Frpb, ped/bikes	1.00	1.00			1.00			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.98			0.97				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1752	3374			4977			3394				
Flt Permitted	0.27	1.00			1.00			0.99				
Satd. Flow (perm)	495	3374			4977			3394				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	211	320	0	0	765	114	114	372	138	0	0	0
RTOR Reduction (vph)	0	0	0	0	23	0	0	30	0	0	0	0
Lane Group Flow (vph)	211	320	0	0	856	0	0	594	0	0	0	0
Confl. Peds. (#/hr)	1					1			8			
Confl. Bikes (#/hr)			2			2			27			
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	38.0	38.0			38.0			37.0				
Effective Green, g (s)	38.0	38.0			38.0			37.0				
Actuated g/C Ratio	0.45	0.45			0.45			0.44				
Clearance Time (s)	5.0	5.0			5.0			5.0				
Vehicle Extension (s)	3.0	3.0			3.0			3.0				
Lane Grp Cap (vph)	221	1508			2225			1477				
v/s Ratio Prot		0.09			0.17							
v/s Ratio Perm	c0.43							0.17				
v/c Ratio	0.95	0.21			0.38			0.40				
Uniform Delay, d1	22.7	14.4			15.7			16.4				
Progression Factor	0.91	0.77			1.00			1.00				
Incremental Delay, d2	48.3	0.3			0.1			0.2				
Delay (s)	68.9	11.4			15.8			16.6				
Level of Service	E	B			B			B				
Approach Delay (s)		34.3			15.8			16.6			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	15		

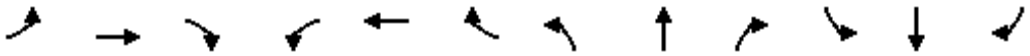
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	99	0	0	2	0	5	447	35	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	104	0	0	2	0	5	471	37	0	0	0
Pedestrians		9			13							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		1			1							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	256	540	9	565	521	267	9			520		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	256	540	9	565	521	267	9			520		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	76	100	100	100	100	100			100		
cM capacity (veh/h)	658	442	1069	328	453	730	1612			1045		

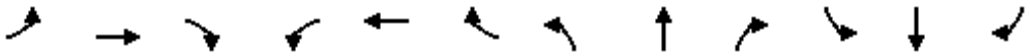
Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	104	2	241	272
Volume Left	0	0	5	0
Volume Right	0	0	0	37
cSH	442	453	1612	1700
Volume to Capacity	0.24	0.00	0.00	0.16
Queue Length 95th (ft)	23	0	0	0
Control Delay (s)	15.6	13.0	0.2	0.0
Lane LOS	C	B	A	
Approach Delay (s)	15.6	13.0	0.1	
Approach LOS	C	B		

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	25.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	171	0	23	0	0	0	27	724	2	0	141	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.97	
Flpb, ped/bikes		0.98	1.00				0.98	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.94	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1741	1165				1184	2735			2575	
Flt Permitted		0.76	1.00				0.59	1.00			1.00	
Satd. Flow (perm)		1388	1165				736	2735			2575	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	180	0	24	0	0	0	28	762	2	0	148	113
RTOR Reduction (vph)	0	0	15	0	0	0	0	1	0	0	61	0
Lane Group Flow (vph)	0	180	9	0	0	0	28	763	0	0	200	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	2%	0%	33%	0%	0%	0%	50%	32%	0%	0%	49%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		25.0	25.0				30.0	30.0			30.0	
Effective Green, g (s)		25.0	25.0				30.0	30.0			30.0	
Actuated g/C Ratio		0.38	0.38				0.46	0.46			0.46	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		533	448				339	1262			1188	
v/s Ratio Prot								c0.28			0.08	
v/s Ratio Perm		c0.13	0.01				0.04					
v/c Ratio		0.34	0.02				0.08	0.60			0.17	
Uniform Delay, d1		14.1	12.4				9.8	13.1			10.2	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		1.7	0.1				0.5	2.2			0.3	
Delay (s)		15.9	12.5				10.3	15.2			10.5	
Level of Service		B	B				B	B			B	
Approach Delay (s)		15.5			0.0			15.1			10.5	
Approach LOS		B			A			B			B	

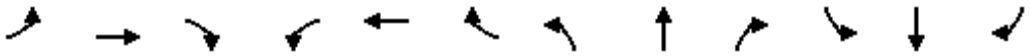
Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	393	140	137	900	52	418	84	300	89	34	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1504	3505	1442	1433	3360		1618	1351	1267	1517	1397	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1504	3505	1442	1433	3360		1618	1351	1267	1517	1397	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	414	147	144	947	55	440	88	316	94	36	76
RTOR Reduction (vph)	0	0	111	0	4	0	0	0	218	0	68	0
Lane Group Flow (vph)	8	414	36	144	998	0	264	264	98	94	44	0
Confl. Peds. (#/hr)			20						20			
Heavy Vehicles (%)	20%	3%	8%	26%	3%	68%	6%	76%	24%	19%	50%	9%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	0.7	19.7	19.7	10.7	29.7		21.6	21.6	21.6	8.2	8.2	
Effective Green, g (s)	0.7	19.7	19.7	10.7	29.7		21.6	21.6	21.6	8.2	8.2	
Actuated g/C Ratio	0.01	0.25	0.25	0.13	0.37		0.27	0.27	0.27	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	13	860	354	191	1244		435	363	341	155	142	
v/s Ratio Prot	0.01	0.12		c0.10	c0.30		0.16	c0.20		c0.06	0.03	
v/s Ratio Perm			0.03						0.08			
v/c Ratio	0.62	0.48	0.10	0.75	0.80		0.61	0.73	0.29	0.61	0.31	
Uniform Delay, d1	39.6	25.9	23.4	33.5	22.6		25.6	26.6	23.2	34.5	33.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	64.0	0.4	0.1	15.5	3.8		2.4	7.1	0.5	16.4	5.5	
Delay (s)	103.7	26.3	23.5	48.9	26.4		28.0	33.7	23.7	50.8	38.9	
Level of Service	F	C	C	D	C		C	C	C	D	D	
Approach Delay (s)		26.7			29.3			28.2			44.4	
Approach LOS		C			C			C			D	

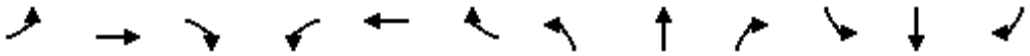
Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	515	119	240	897	281	133	232	487	176	101	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.90		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1433	3228		1626	3438	1495	1444	2823		1612	2762	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1433	3228		1626	3438	1495	1444	2823		1612	2762	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	161	531	123	247	925	290	137	239	502	181	104	34
RTOR Reduction (vph)	0	21	0	0	0	241	0	340	0	0	29	0
Lane Group Flow (vph)	161	633	0	247	925	49	137	401	0	181	109	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			3									
Heavy Vehicles (%)	26%	8%	10%	11%	5%	8%	25%	23%	11%	12%	18%	50%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.31	0.31		0.17	0.17	0.17	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	437	985		273	579	251	228	445		254	436	
v/s Ratio Prot	0.11	c0.20		0.15	c0.27		0.09	c0.14		c0.11	0.04	
v/s Ratio Perm						0.03						
v/c Ratio	0.37	0.64		0.90	1.60	0.19	0.60	0.90		0.71	0.25	
Uniform Delay, d1	25.8	28.5		38.8	39.5	34.0	37.2	39.3		38.0	35.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	3.2		34.6	277.0	1.7	11.2	23.9		15.7	1.4	
Delay (s)	28.2	31.7		73.4	316.5	35.7	48.4	63.2		53.6	36.5	
Level of Service	C	C		E	F	D	D	E		D	D	
Approach Delay (s)		31.0			219.7			60.9			46.2	
Approach LOS		C			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	119.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	128	1048	67	30	1136	17	54	0	22	3	7	232
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	135	1103	71	32	1196	18	57	0	23	3	7	244
Pedestrians								2			2	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1120			405							
pX, platoon unblocked	0.87			0.95			0.89	0.89	0.95	0.89	0.89	0.87
vC, conflicting volume	1216			1176			2319	2689	589	2114	2715	609
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	941			1073			1969	2384	454	1740	2413	240
tC, single (s)	4.9			4.1			7.9	6.5	7.1	7.5	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.6			2.2			3.7	4.0	3.4	3.5	4.0	3.4
p0 queue free %	71			95			0	100	95	91	63	62
cM capacity (veh/h)	459			621			9	21	508	36	20	635

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	686	622	629	616	80	255
Volume Left	135	0	32	0	57	3
Volume Right	0	71	0	18	23	244
cSH	459	1700	621	1700	13	302
Volume to Capacity	0.29	0.37	0.05	0.36	6.36	0.84
Queue Length 95th (ft)	30	0	4	0	Err	182
Control Delay (s)	8.8	0.0	1.4	0.0	Err	57.9
Lane LOS	A		A		F	F
Approach Delay (s)	4.6		0.7		Err	57.9
Approach LOS					F	F

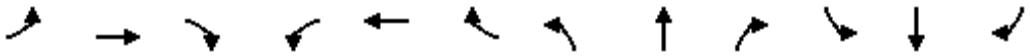
Intersection Summary				
Average Delay	284.4			
Intersection Capacity Utilization	100.2%	ICU Level of Service	G	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	252	0	0	0	0	814
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	260	0	0	0	0	839
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	420	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	420	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	53	100			100	
cM capacity (veh/h)	557	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	130	130	420	420
Volume Left	130	130	0	0
Volume Right	0	0	0	0
cSH	557	557	1700	1700
Volume to Capacity	0.23	0.23	0.25	0.25
Queue Length 95th (ft)	22	22	0	0
Control Delay (s)	13.4	13.4	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	13.4		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	786	119	160	789	0	0	0	0	186	622	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.91		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.98		1.00	1.00						0.97	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		4815		1770	3471						3368	
Flt Permitted		1.00		0.26	1.00						0.99	
Satd. Flow (perm)		4815		488	3471						3368	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	819	124	167	822	0	0	0	0	194	648	253
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	27	0
Lane Group Flow (vph)	0	924	0	167	822	0	0	0	0	0	1068	0
Confl. Peds. (#/hr)										7		3
Confl. Bikes (#/hr)						1						36
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		59.0		59.0	59.0						36.0	
Effective Green, g (s)		59.0		59.0	59.0						36.0	
Actuated g/C Ratio		0.56		0.56	0.56						0.34	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		2705		274	1950						1154	
v/s Ratio Prot		0.19			0.24							
v/s Ratio Perm				c0.34							0.32	
v/c Ratio		0.34		0.61	0.42						0.93	
Uniform Delay, d1		12.5		15.3	13.2						33.2	
Progression Factor		1.00		0.63	0.47						1.00	
Incremental Delay, d2		0.3		8.9	0.6						13.7	
Delay (s)		12.8		18.5	6.8						47.0	
Level of Service		B		B	A						D	
Approach Delay (s)		12.8			8.8			0.0			47.0	
Approach LOS		B			A			A			D	

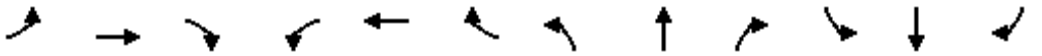
Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	114.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	109	12	7	2	0	0	0	0	10	705	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	115	13	7	2	0	0	0	0	11	742	3
Pedestrians		3						1				
Lane Width (ft)		12.0						0.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	769	768	377	463	769	0	748			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	769	768	377	463	769	0	748			0		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	65	98	98	99	100	100			99		
cM capacity (veh/h)	276	332	625	347	331	1091	867			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	127	9	382	374
Volume Left	0	7	11	0
Volume Right	13	0	0	3
cSH	348	343	1636	1700
Volume to Capacity	0.37	0.03	0.01	0.22
Queue Length 95th (ft)	41	2	0	0
Control Delay (s)	21.2	15.8	0.3	0.0
Lane LOS	C	C	A	
Approach Delay (s)	21.2	15.8	0.1	
Approach LOS	C	C		

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	33.2%	ICU Level of Service	A	
Analysis Period (min)	15			



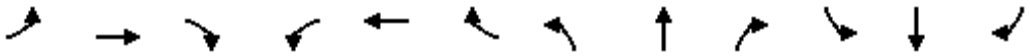
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	168	117	0	0	132	157	123	373	111	109	0	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.92		1.00	0.97		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1160	3195			2746		1014	2884		1570		2349
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1160	3195			2746		1014	2884		1570		2349
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	177	123	0	0	139	165	129	393	117	115	0	256
RTOR Reduction (vph)	0	0	0	0	144	0	0	21	0	0	0	219
Lane Group Flow (vph)	177	123	0	0	160	0	116	502	0	115	0	37
Confl. Peds. (#/hr)							4					4
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	40%	13%	0%	0%	18%	21%	62%	15%	13%	15%	0%	21%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	17.1	17.1			9.5		18.1	18.1		10.8		10.8
Effective Green, g (s)	17.1	17.1			9.5		18.1	18.1		10.8		10.8
Actuated g/C Ratio	0.23	0.23			0.13		0.24	0.24		0.14		0.14
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	262	723			345		243	691		224		336
v/s Ratio Prot	c0.15	0.04			c0.06		0.11	c0.17		c0.07		0.02
v/s Ratio Perm												
v/c Ratio	0.68	0.17			0.46		0.48	0.73		0.51		0.11
Uniform Delay, d1	26.7	23.5			30.6		24.6	26.4		29.9		28.2
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	6.7	0.1			1.0		6.6	6.6		2.0		0.1
Delay (s)	33.4	23.6			31.6		31.2	33.0		31.9		28.3
Level of Service	C	C			C		C	C		C		C
Approach Delay (s)		29.4			31.6			32.7			29.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	75.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	201	233	43	34	71	98	7	269	185	245	150	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	212	245	45	36	75	103	7	283	195	258	158	0
RTOR Reduction (vph)	0	0	30	0	0	90	0	102	0	0	0	0
Lane Group Flow (vph)	212	245	15	36	75	13	7	376	0	258	158	0
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	45%	52%	94%	63%	64%	50%	80%	79%	62%	50%	93%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Effective Green, g (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Actuated g/C Ratio	0.32	0.32	0.32	0.12	0.12	0.12	0.24	0.24		0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	404	771	270	138	275	132	242	476		170	264	
v/s Ratio Prot	c0.17	c0.10		0.03	0.03		0.01	c0.19		c0.21	0.08	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.52	0.32	0.05	0.26	0.27	0.10	0.03	0.79		1.52	0.60	
Uniform Delay, d1	33.0	30.5	27.8	47.5	47.6	46.5	34.7	42.6		51.5	48.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.8	1.1	0.4	4.5	2.4	1.5	0.2	12.5		260.7	9.6	
Delay (s)	37.8	31.6	28.2	52.0	50.0	48.0	35.0	55.1		312.2	57.9	
Level of Service	D	C	C	D	D	D	C	E		F	E	
Approach Delay (s)		33.9			49.4			54.8			215.6	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	89.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	826	72	99	967	84	49	329	91	104	304	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3379		1770	3473		1770	1770		1770	1717	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3379		1770	3473		1770	1770		1770	1717	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	96	869	76	104	1018	88	52	346	96	109	320	123
RTOR Reduction (vph)	0	7	0	0	7	0	0	10	0	0	14	0
Lane Group Flow (vph)	96	938	0	104	1099	0	52	432	0	109	429	0
Confl. Peds. (#/hr)	20		12	12		20	17		11	11		17
Confl. Bikes (#/hr)			10			8			12			9
Heavy Vehicles (%)	2%	5%	7%	2%	2%	2%	2%	3%	4%	2%	3%	9%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.2	34.9		4.0	32.7		3.9	33.1		4.0	33.2	
Effective Green, g (s)	6.2	34.9		4.0	32.7		3.9	33.1		4.0	33.2	
Actuated g/C Ratio	0.07	0.37		0.04	0.35		0.04	0.35		0.04	0.35	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	116	1254		75	1208		73	623		75	606	
v/s Ratio Prot	0.05	0.28		c0.06	c0.32		0.03	0.24		c0.06	c0.25	
v/s Ratio Perm												
v/c Ratio	0.83	0.75		1.39	0.91		0.71	0.69		1.45	0.71	
Uniform Delay, d1	43.4	25.7		45.0	29.2		44.5	26.1		45.0	26.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	36.2	2.5		237.1	10.3		27.8	6.2		263.6	6.8	
Delay (s)	79.5	28.2		282.1	39.5		72.3	32.3		308.6	33.0	
Level of Service	E	C		F	D		E	C		F	C	
Approach Delay (s)		32.9			60.4			36.5			87.4	
Approach LOS		C			E			D			F	

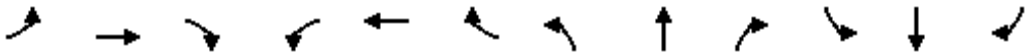
Intersection Summary			
HCM 2000 Control Delay	52.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	94.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	245	15	7	1006	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	0	0	253	15	7	1037	0	0	0	0
Pedestrians		16			1						3	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	694	1069	16	1053	1069	523	16			1038		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	694	1069	16	1053	1069	523	16			1038		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	100	100	0	97	100			100		
cM capacity (veh/h)	0	222	1066	182	222	504	1615			677		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	168	100	353	691
Volume Left	0	0	7	0
Volume Right	0	15	0	0
cSH	222	243	1615	1700
Volume to Capacity	0.76	0.41	0.00	0.41
Queue Length 95th (ft)	132	47	0	0
Control Delay (s)	58.9	29.7	0.2	0.0
Lane LOS	F	D	A	
Approach Delay (s)	48.0		0.1	
Approach LOS	E			

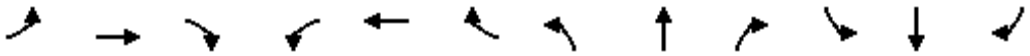
Intersection Summary				
Average Delay	9.9			
Intersection Capacity Utilization	42.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	425	546	0	0	798	171	150	684	186	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0				
Lane Util. Factor	1.00	0.95			0.91			0.95				
Frpb, ped/bikes	1.00	1.00			1.00			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.97			0.97				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1702	3406			4868			3346				
Flt Permitted	0.24	1.00			1.00			0.99				
Satd. Flow (perm)	430	3406			4868			3346				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	443	569	0	0	831	178	156	712	194	0	0	0
RTOR Reduction (vph)	0	0	0	0	29	0	0	18	0	0	0	0
Lane Group Flow (vph)	443	569	0	0	980	0	0	1044	0	0	0	0
Confl. Peds. (#/hr)	2					2			4	4		
Confl. Bikes (#/hr)			1						44			
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	59.0	59.0			59.0			36.0				
Effective Green, g (s)	59.0	59.0			59.0			36.0				
Actuated g/C Ratio	0.56	0.56			0.56			0.34				
Clearance Time (s)	5.0	5.0			5.0			5.0				
Vehicle Extension (s)	3.0	3.0			3.0			3.0				
Lane Grp Cap (vph)	241	1913			2735			1147				
v/s Ratio Prot		0.17			0.20							
v/s Ratio Perm	c1.03							0.31				
v/c Ratio	1.84	0.30			0.36			0.91				
Uniform Delay, d1	23.0	12.1			12.6			33.0				
Progression Factor	0.80	0.49			1.00			1.00				
Incremental Delay, d2	391.5	0.4			0.4			10.6				
Delay (s)	410.0	6.3			13.0			43.5				
Level of Service	F	A			B			D				
Approach Delay (s)		183.0			13.0			43.5			0.0	
Approach LOS		F			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	79.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	114.1%	ICU Level of Service	H
Analysis Period (min)	15		

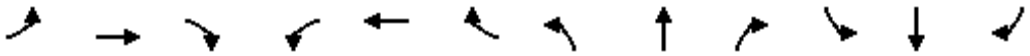
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	109	0	0	0	2	7	8	904	3	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	115	0	0	0	2	7	8	952	3	0	0	0
Pedestrians		12			1						1	
Lane Width (ft)		12.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	514	985	12	971	983	479	12			956		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	514	985	12	971	983	479	12			956		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	72	100	100	100	99	99	99			100		
cM capacity (veh/h)	412	246	1061	207	247	537	1604			727		

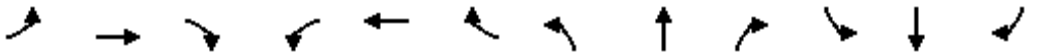
Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	115	9	484	479
Volume Left	115	0	8	0
Volume Right	0	7	0	3
cSH	412	426	1604	1700
Volume to Capacity	0.28	0.02	0.01	0.28
Queue Length 95th (ft)	28	2	0	0
Control Delay (s)	17.1	13.6	0.2	0.0
Lane LOS	C	B	A	
Approach Delay (s)	17.1	13.6	0.1	
Approach LOS	C	B		

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	44.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	0	54	0	0	0	45	181	0	0	91	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.96	
Flpb, ped/bikes		0.98	1.00				0.98	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.90	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1776	1550				1520	3471			2983	
Flt Permitted		0.76	1.00				0.56	1.00			1.00	
Satd. Flow (perm)		1415	1550				898	3471			2983	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	284	0	57	0	0	0	47	191	0	0	96	217
RTOR Reduction (vph)	0	0	34	0	0	0	0	0	0	0	120	0
Lane Group Flow (vph)	0	284	23	0	0	0	47	191	0	0	193	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	17%	4%	0%	0%	13%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		26.0	26.0				29.0	29.0			29.0	
Effective Green, g (s)		26.0	26.0				29.0	29.0			29.0	
Actuated g/C Ratio		0.40	0.40				0.45	0.45			0.45	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		566	620				400	1548			1330	
v/s Ratio Prot								0.06			c0.06	
v/s Ratio Perm		c0.20	0.01				0.05					
v/c Ratio		0.50	0.04				0.12	0.12			0.14	
Uniform Delay, d1		14.6	11.9				10.5	10.5			10.7	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		3.2	0.1				0.6	0.2			0.2	
Delay (s)		17.8	12.0				11.1	10.7			10.9	
Level of Service		B	B				B	B			B	
Approach Delay (s)		16.8			0.0			10.8			10.9	
Approach LOS		B			A			B			B	

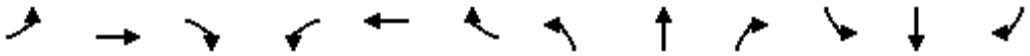
Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	277	96	176	811	34	121	20	261	57	18	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1357	3471	1474	1687	3409		1649	1489	1449	1433	1344	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1357	3471	1474	1687	3409		1649	1489	1449	1433	1344	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	292	101	185	854	36	127	21	275	60	19	31
RTOR Reduction (vph)	0	0	72	0	3	0	0	0	181	0	28	0
Lane Group Flow (vph)	44	292	29	185	887	0	74	74	94	60	22	0
Confl. Peds. (#/hr)			20						20			
Heavy Vehicles (%)	33%	4%	6%	7%	4%	35%	4%	50%	8%	26%	45%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	4.7	29.2	29.2	9.4	33.9		34.6	34.6	34.6	8.2	8.2	
Effective Green, g (s)	4.7	29.2	29.2	9.4	33.9		34.6	34.6	34.6	8.2	8.2	
Actuated g/C Ratio	0.05	0.29	0.29	0.09	0.33		0.34	0.34	0.34	0.08	0.08	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	62	999	424	156	1139		562	508	494	115	108	
v/s Ratio Prot	0.03	0.08		c0.11	c0.26		0.04	0.05		c0.04	0.02	
v/s Ratio Perm			0.02						c0.06			
v/c Ratio	0.71	0.29	0.07	1.19	0.78		0.13	0.15	0.19	0.52	0.20	
Uniform Delay, d1	47.7	28.1	26.2	46.0	30.4		23.0	23.2	23.5	44.7	43.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	31.0	0.2	0.1	130.7	3.4		0.5	0.6	0.9	4.2	0.9	
Delay (s)	78.7	28.2	26.3	176.7	33.8		23.5	23.8	24.4	48.9	44.4	
Level of Service	E	C	C	F	C		C	C	C	D	D	
Approach Delay (s)		32.9			58.4			24.1			46.9	
Approach LOS		C			E			C			D	

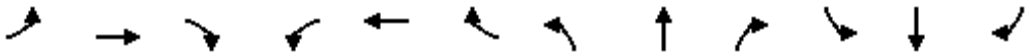
Intersection Summary			
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	101.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	366	98	185	851	318	137	143	213	156	116	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	3291		1703	3505	1543	1583	3043		1736	2840	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1626	3291		1703	3505	1543	1583	3043		1736	2840	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	91	385	103	195	896	335	144	151	224	164	122	56
RTOR Reduction (vph)	0	25	0	0	0	279	0	189	0	0	47	0
Lane Group Flow (vph)	91	463	0	195	896	56	144	186	0	164	131	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1			3						
Heavy Vehicles (%)	11%	4%	13%	6%	3%	3%	14%	5%	10%	4%	12%	41%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.31	0.31		0.17	0.17	0.17	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	496	1004		286	590	259	249	480		274	448	
v/s Ratio Prot	0.06	c0.14		0.11	c0.26		c0.09	0.06		c0.09	0.05	
v/s Ratio Perm						0.04						
v/c Ratio	0.18	0.46		0.68	1.52	0.22	0.58	0.39		0.60	0.29	
Uniform Delay, d1	24.3	26.7		37.1	39.5	34.1	37.1	35.9		37.2	35.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	1.5		12.4	242.0	1.9	9.4	2.4		9.3	1.6	
Delay (s)	25.1	28.2		49.5	281.5	36.0	46.5	38.2		46.5	37.0	
Level of Service	C	C		D	F	D	D	D		D	D	
Approach Delay (s)		27.7			192.1			40.5			41.5	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	113.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	710	55	30	1151	8	72	7	39	5	17	151
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	57	732	57	31	1187	8	74	7	40	5	18	156
Pedestrians		2										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		4.0										
Percent Blockage		0										
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1120			405							
pX, platoon unblocked	0.85						0.85	0.85		0.85	0.85	0.85
vC, conflicting volume	1195			789			1695	2130	394	1776	2155	599
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	868			789			1459	1973	394	1554	2002	165
tC, single (s)	4.9			4.2			7.5	6.5	7.0	8.2	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.6			2.3			3.5	4.0	3.3	3.8	4.0	3.3
p0 queue free %	88			96			0	84	93	85	60	78
cM capacity (veh/h)	477			795			36	45	599	35	43	716

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	423	423	624	602	122	178
Volume Left	57	0	31	0	74	5
Volume Right	0	57	0	8	40	156
cSH	477	1700	795	1700	54	232
Volume to Capacity	0.12	0.25	0.04	0.35	2.26	0.77
Queue Length 95th (ft)	10	0	3	0	305	137
Control Delay (s)	3.6	0.0	1.0	0.0	741.3	58.5
Lane LOS	A		A		F	F
Approach Delay (s)	1.8		0.5		741.3	58.5
Approach LOS					F	F

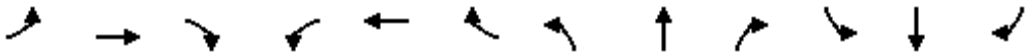
Intersection Summary				
Average Delay	43.3			
Intersection Capacity Utilization	86.8%	ICU Level of Service	E	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	220	0	0	0	0	750
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	232	0	0	0	0	789
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	395	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	395	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	60	100			100	
cM capacity (veh/h)	574	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	116	116	395	395
Volume Left	116	116	0	0
Volume Right	0	0	0	0
cSH	574	574	1700	1700
Volume to Capacity	0.20	0.20	0.23	0.23
Queue Length 95th (ft)	19	19	0	0
Control Delay (s)	12.8	12.8	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	12.8		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	445	125	185	737	0	0	0	0	156	496	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.91		1.00	0.95						0.95	
Frpb, ped/bikes		1.00		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.97		1.00	1.00						0.95	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		4700		1767	3539						3254	
Flt Permitted		1.00		0.40	1.00						0.99	
Satd. Flow (perm)		4700		740	3539						3254	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	468	132	195	776	0	0	0	0	164	522	326
RTOR Reduction (vph)	0	60	0	0	0	0	0	0	0	0	62	0
Lane Group Flow (vph)	0	540	0	195	776	0	0	0	0	0	950	0
Confl. Peds. (#/hr)			4	4						4		2
Confl. Bikes (#/hr)			3			2						21
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		38.0		38.0	38.0						37.0	
Effective Green, g (s)		38.0		38.0	38.0						37.0	
Actuated g/C Ratio		0.45		0.45	0.45						0.44	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		2101		330	1582						1416	
v/s Ratio Prot		0.11			0.22							
v/s Ratio Perm				c0.26							0.29	
v/c Ratio		0.26		0.59	0.49						0.67	
Uniform Delay, d1		14.7		17.7	16.6						19.1	
Progression Factor		1.00		0.42	0.34						1.00	
Incremental Delay, d2		0.3		2.6	0.2						2.5	
Delay (s)		15.0		10.0	5.9						21.7	
Level of Service		B		A	A						C	
Approach Delay (s)		15.0			6.7			0.0			21.7	
Approach LOS		B			A			A			C	

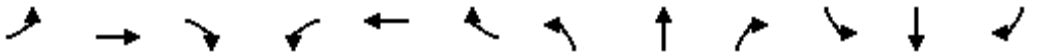
Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	97	2	24	8	0	15	0	0	0	42	571	17
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	102	2	25	8	0	16	0	0	0	44	601	18
Pedestrians								1				
Lane Width (ft)								0.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	714	698	310	416	707	0	619			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	714	698	310	416	707	0	619			0		
tC, single (s)	7.7	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	66	99	96	98	100	99	100			97		
cM capacity (veh/h)	297	357	691	480	353	1091	971			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	129	24	345	318
Volume Left	102	8	44	0
Volume Right	25	16	0	18
cSH	335	756	1636	1700
Volume to Capacity	0.39	0.03	0.03	0.19
Queue Length 95th (ft)	44	2	2	0
Control Delay (s)	22.4	9.9	1.1	0.0
Lane LOS	C	A	A	
Approach Delay (s)	22.4	9.9	0.6	
Approach LOS	C	A		

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	37.8%	ICU Level of Service	A	
Analysis Period (min)	15			

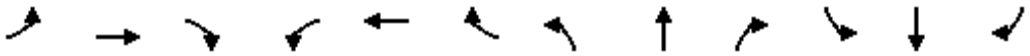


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	37	0	0	177	159	86	202	172	86	0	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.93		1.00	0.93		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1624	3471			3077		1441	2981		1543		2682
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1624	3471			3077		1441	2981		1543		2682
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	39	0	0	186	167	91	213	181	91	0	256
RTOR Reduction (vph)	0	0	0	0	139	0	0	125	0	0	0	231
Lane Group Flow (vph)	22	39	0	0	214	0	82	278	0	91	0	25
Confl. Peds. (#/hr)	6					6						
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	0%	4%	0%	0%	9%	7%	14%	7%	9%	17%	0%	6%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	3.6	3.6			8.9		16.4	16.4		5.1		5.1
Effective Green, g (s)	3.6	3.6			8.9		16.4	16.4		5.1		5.1
Actuated g/C Ratio	0.07	0.07			0.17		0.31	0.31		0.10		0.10
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	110	235			516		445	922		148		258
v/s Ratio Prot	c0.01	0.01			c0.07		0.06	c0.09		c0.06		0.01
v/s Ratio Perm												
v/c Ratio	0.20	0.17			0.41		0.18	0.30		0.61		0.10
Uniform Delay, d1	23.3	23.3			19.7		13.4	13.9		23.0		21.8
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	0.9	0.3			0.5		0.9	0.8		7.4		0.2
Delay (s)	24.2	23.6			20.3		14.3	14.8		30.4		22.0
Level of Service	C	C			C		B	B		C		C
Approach Delay (s)		23.8			20.3			14.7			24.2	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	36	1	19	36	90	0	11	31	78	15	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	794	1357	3471	1328		2621		1703	2356	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	794	1357	3471	1328		2621		1703	2356	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	38	1	20	38	95	0	12	33	82	16	1
RTOR Reduction (vph)	0	0	1	0	0	57	0	23	0	0	1	0
Lane Group Flow (vph)	14	38	0	20	38	38	0	22	0	82	16	0
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			4			2						3
Heavy Vehicles (%)	0%	0%	100%	33%	4%	20%	0%	38%	17%	6%	55%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	4.0	39.0	39.0	5.0	40.0	40.0		30.0		6.0	32.0	
Effective Green, g (s)	4.0	39.0	39.0	5.0	40.0	40.0		30.0		6.0	32.0	
Actuated g/C Ratio	0.04	0.39	0.39	0.05	0.40	0.40		0.30		0.06	0.32	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Grp Cap (vph)	72	1407	309	67	1388	531		786		102	753	
v/s Ratio Prot	0.01	0.01		c0.01	0.01			c0.01		c0.05	0.01	
v/s Ratio Perm			0.00			c0.03						
v/c Ratio	0.19	0.03	0.00	0.30	0.03	0.07		0.03		0.80	0.02	
Uniform Delay, d1	46.4	18.8	18.6	45.8	18.2	18.5		24.7		46.4	23.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	5.9	0.0	0.0	11.0	0.0	0.3		0.1		47.2	0.1	
Delay (s)	52.4	18.8	18.6	56.9	18.2	18.8		24.8		93.6	23.3	
Level of Service	D	B	B	E	B	B		C		F	C	
Approach Delay (s)		27.7			23.6			24.8			81.5	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	40.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	602	32	76	823	81	59	165	59	101	217	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3445		1805	3451		1805	1813		1770	1729	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3445		1805	3451		1805	1813		1770	1729	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	89	608	32	77	831	82	60	167	60	102	219	135
RTOR Reduction (vph)	0	5	0	0	8	0	0	13	0	0	22	0
Lane Group Flow (vph)	89	635	0	77	905	0	60	214	0	102	332	0
Confl. Peds. (#/hr)	6		3	3		6	6		5	5		6
Confl. Bikes (#/hr)			15			13			14			11
Heavy Vehicles (%)	0%	4%	0%	0%	3%	0%	0%	0%	0%	2%	4%	0%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.0	32.1		4.0	30.1		6.1	33.0		4.0	30.9	
Effective Green, g (s)	6.0	32.1		4.0	30.1		6.1	33.0		4.0	30.9	
Actuated g/C Ratio	0.07	0.35		0.04	0.33		0.07	0.36		0.04	0.34	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	118	1213		79	1140		120	656		77	586	
v/s Ratio Prot	c0.05	0.18		0.04	c0.26		0.03	0.12		c0.06	c0.19	
v/s Ratio Perm												
v/c Ratio	0.75	0.52		0.97	0.79		0.50	0.33		1.32	0.57	
Uniform Delay, d1	41.8	23.4		43.5	27.7		41.0	21.0		43.5	24.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	23.5	0.4		92.0	3.9		3.3	1.3		211.9	3.9	
Delay (s)	65.4	23.8		135.5	31.6		44.3	22.3		255.4	28.6	
Level of Service	E	C		F	C		D	C		F	C	
Approach Delay (s)		28.9			39.7			26.9			79.3	
Approach LOS		C			D			C			E	

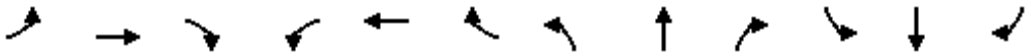
Intersection Summary			
HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	91.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	215	12	5	570	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	0	226	13	5	600	0	0	0	0
Pedestrians		3			3						2	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	441	617	3	614	617	305	3			603		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	441	617	3	614	617	305	3			603		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	44	98	100			100		
cM capacity (veh/h)	275	406	1086	368	406	695	1632			982		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	151	88	205	400
Volume Left	0	0	5	0
Volume Right	0	13	0	0
cSH	406	432	1632	1700
Volume to Capacity	0.37	0.20	0.00	0.24
Queue Length 95th (ft)	42	19	0	0
Control Delay (s)	19.0	15.5	0.2	0.0
Lane LOS	C	C	A	
Approach Delay (s)	17.7		0.1	
Approach LOS	C			

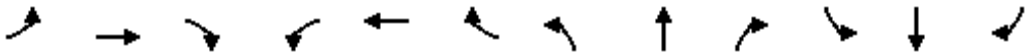
Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	33.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	214	387	0	0	808	108	116	353	131	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0				
Lane Util. Factor	1.00	0.95			0.91			0.95				
Frpb, ped/bikes	1.00	1.00			1.00			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.98			0.97				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1752	3374			4987			3393				
Flt Permitted	0.24	1.00			1.00			0.99				
Satd. Flow (perm)	435	3374			4987			3393				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	225	407	0	0	851	114	122	372	138	0	0	0
RTOR Reduction (vph)	0	0	0	0	20	0	0	30	0	0	0	0
Lane Group Flow (vph)	225	407	0	0	945	0	0	602	0	0	0	0
Confl. Peds. (#/hr)	1					1			8			
Confl. Bikes (#/hr)			2			2			27			
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	38.0	38.0			38.0			37.0				
Effective Green, g (s)	38.0	38.0			38.0			37.0				
Actuated g/C Ratio	0.45	0.45			0.45			0.44				
Clearance Time (s)	5.0	5.0			5.0			5.0				
Vehicle Extension (s)	3.0	3.0			3.0			3.0				
Lane Grp Cap (vph)	194	1508			2229			1476				
v/s Ratio Prot		0.12			0.19							
v/s Ratio Perm	c0.52							0.18				
v/c Ratio	1.16	0.27			0.42			0.41				
Uniform Delay, d1	23.5	14.8			16.0			16.5				
Progression Factor	0.81	0.64			1.00			1.00				
Incremental Delay, d2	112.4	0.4			0.1			0.2				
Delay (s)	131.4	9.9			16.2			16.7				
Level of Service	F	A			B			B				
Approach Delay (s)		53.2			16.2			16.7			0.0	
Approach LOS		D			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		

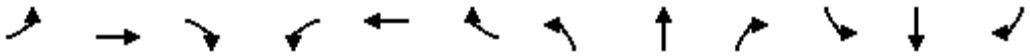
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	99	0	0	2	0	5	455	35	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	104	0	0	2	0	5	479	37	0	0	0
Pedestrians		9			13							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		1			1							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	260	548	9	573	530	271	9			529		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	260	548	9	573	530	271	9			529		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	76	100	100	100	100	100			100		
cM capacity (veh/h)	654	437	1069	323	448	725	1612			1037		

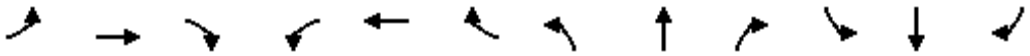
Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	104	2	245	276
Volume Left	0	0	5	0
Volume Right	0	0	0	37
cSH	437	448	1612	1700
Volume to Capacity	0.24	0.00	0.00	0.16
Queue Length 95th (ft)	23	0	0	0
Control Delay (s)	15.8	13.1	0.2	0.0
Lane LOS	C	B	A	
Approach Delay (s)	15.8	13.1	0.1	
Approach LOS	C	B		

Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	25.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	0	10	0	0	0	7	724	2	0	141	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.99				1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.99	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1767	1199				1202	2735			2461	
Flt Permitted		0.76	1.00				0.65	1.00			1.00	
Satd. Flow (perm)		1408	1199				820	2735			2461	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	115	0	11	0	0	0	7	762	2	0	148	16
RTOR Reduction (vph)	0	0	7	0	0	0	0	1	0	0	9	0
Lane Group Flow (vph)	0	115	4	0	0	0	7	763	0	0	155	0
Confl. Peds. (#/hr)	2		1	1		2	1		2	2		1
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	0%	33%	0%	0%	0%	50%	32%	0%	0%	49%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		25.0	25.0				30.0	30.0			30.0	
Effective Green, g (s)		25.0	25.0				30.0	30.0			30.0	
Actuated g/C Ratio		0.38	0.38				0.46	0.46			0.46	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		541	461				378	1262			1135	
v/s Ratio Prot								c0.28			0.06	
v/s Ratio Perm		c0.08	0.00				0.01					
v/c Ratio		0.21	0.01				0.02	0.60			0.14	
Uniform Delay, d1		13.4	12.4				9.5	13.1			10.1	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		0.9	0.0				0.1	2.2			0.3	
Delay (s)		14.3	12.4				9.6	15.2			10.3	
Level of Service		B	B				A	B			B	
Approach Delay (s)		14.1			0.0			15.2			10.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



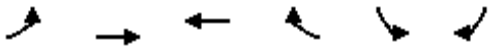
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	395	118	66	902	52	407	84	249	89	34	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1504	3505	1495	1433	3360		1618	1346	1302	1517	1397	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1504	3505	1495	1433	3360		1618	1346	1302	1517	1397	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	416	124	69	949	55	428	88	262	94	36	76
RTOR Reduction (vph)	0	0	86	0	4	0	0	0	193	0	68	0
Lane Group Flow (vph)	8	416	38	69	1000	0	257	259	69	94	44	0
Heavy Vehicles (%)	20%	3%	8%	26%	3%	68%	6%	76%	24%	19%	50%	9%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	0.7	24.2	24.2	5.6	29.1		20.9	20.9	20.9	8.2	8.2	
Effective Green, g (s)	0.7	24.2	24.2	5.6	29.1		20.9	20.9	20.9	8.2	8.2	
Actuated g/C Ratio	0.01	0.31	0.31	0.07	0.37		0.26	0.26	0.26	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	13	1075	458	101	1239		428	356	344	157	145	
v/s Ratio Prot	0.01	0.12		c0.05	c0.30		0.16	c0.19		c0.06	0.03	
v/s Ratio Perm			0.03						0.05			
v/c Ratio	0.62	0.39	0.08	0.68	0.81		0.60	0.73	0.20	0.60	0.30	
Uniform Delay, d1	39.0	21.5	19.5	35.8	22.4		25.4	26.4	22.5	33.8	32.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	64.0	0.2	0.1	17.4	3.9		2.4	7.2	0.3	15.7	5.3	
Delay (s)	103.0	21.7	19.5	53.2	26.3		27.7	33.6	22.8	49.5	38.0	
Level of Service	F	C	B	D	C		C	C	C	D	D	
Approach Delay (s)		22.4			28.0			28.0			43.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	78.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	477	116	243	842	284	129	232	490	179	101	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.90		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1433	3179		1626	3438	1495	1444	2823		1612	2822	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1433	3179		1626	3438	1495	1444	2823		1612	2822	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	153	492	120	251	868	293	133	239	505	185	104	25
RTOR Reduction (vph)	0	22	0	0	0	244	0	339	0	0	21	0
Lane Group Flow (vph)	153	590	0	251	868	49	133	405	0	185	108	0
Confl. Peds. (#/hr)			20	1								
Confl. Bikes (#/hr)			75									
Heavy Vehicles (%)	26%	8%	10%	11%	5%	8%	25%	23%	11%	12%	18%	50%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.31	0.31		0.17	0.17	0.17	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	437	970		273	579	251	228	445		254	445	
v/s Ratio Prot	0.11	c0.19		0.15	c0.25		0.09	c0.14		c0.11	0.04	
v/s Ratio Perm						0.03						
v/c Ratio	0.35	0.61		0.92	1.50	0.20	0.58	0.91		0.73	0.24	
Uniform Delay, d1	25.7	28.2		38.9	39.5	34.0	37.1	39.3		38.1	35.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	2.8		37.2	233.6	1.7	10.5	25.4		16.7	1.3	
Delay (s)	27.9	31.0		76.0	273.1	35.7	47.6	64.7		54.8	36.3	
Level of Service	C	C		E	F	D	D	E		D	D	
Approach Delay (s)		30.4			188.8			62.1			47.2	
Approach LOS		C			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	106.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	135	1075	1108	43	3	265
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	142	1132	1166	45	3	279
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1120	405			
pX, platoon unblocked	0.87				0.89	0.87
vC, conflicting volume	1214				2041	608
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	954				1776	260
tC, single (s)	4.9				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.6				3.5	3.4
p0 queue free %	69				93	55
cM capacity (veh/h)	456				46	621

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	519	754	778	434	282
Volume Left	142	0	0	0	3
Volume Right	0	0	0	45	279
cSH	456	1700	1700	1700	545
Volume to Capacity	0.31	0.44	0.46	0.26	0.52
Queue Length 95th (ft)	33	0	0	0	74
Control Delay (s)	9.3	0.0	0.0	0.0	18.5
Lane LOS	A				C
Approach Delay (s)	3.8		0.0		18.5
Approach LOS					C

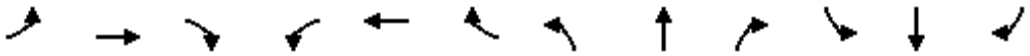
Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	252	0	0	0	0	813
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	260	0	0	0	0	838
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	419	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	419	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	53	100			100	
cM capacity (veh/h)	557	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	130	130	419	419
Volume Left	130	130	0	0
Volume Right	0	0	0	0
cSH	557	557	1700	1700
Volume to Capacity	0.23	0.23	0.25	0.25
Queue Length 95th (ft)	22	22	0	0
Control Delay (s)	13.4	13.4	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	13.4		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	726	183	175	762	0	0	0	0	189	625	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.95		1.00	0.95						0.95	
Frpb, ped/bikes		0.99		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.97		1.00	1.00						0.97	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3282		1763	3471						3345	
Flt Permitted		1.00		0.24	1.00						0.99	
Satd. Flow (perm)		3282		441	3471						3345	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	756	191	182	794	0	0	0	0	197	651	247
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	926	0	182	794	0	0	0	0	0	1069	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			75			75						50
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		59.0		59.0	59.0						36.0	
Effective Green, g (s)		59.0		59.0	59.0						36.0	
Actuated g/C Ratio		0.56		0.56	0.56						0.34	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		1844		247	1950						1146	
v/s Ratio Prot		0.28			0.23							
v/s Ratio Perm				c0.41							0.32	
v/c Ratio		0.50		0.74	0.41						0.93	
Uniform Delay, d1		14.0		17.2	13.1						33.3	
Progression Factor		1.00		0.64	0.46						1.00	
Incremental Delay, d2		1.0		14.7	0.5						14.7	
Delay (s)		15.0		25.7	6.6						48.1	
Level of Service		B		C	A						D	
Approach Delay (s)		15.0			10.1			0.0			48.1	
Approach LOS		B			B			A			D	

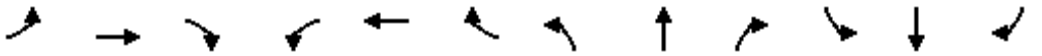
Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	128.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	161	12	7	2	0	0	0	0	10	705	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	169	13	7	2	0	0	0	0	11	742	3
Pedestrians		3						1				
Lane Width (ft)		12.0						0.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	769	768	377	490	769	0	748			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	769	768	377	490	769	0	748			0		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	49	98	97	99	100	100			99		
cM capacity (veh/h)	276	332	625	271	331	1091	867			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	182	9	382	374
Volume Left	0	7	11	0
Volume Right	13	0	0	3
cSH	343	282	1636	1700
Volume to Capacity	0.53	0.03	0.01	0.22
Queue Length 95th (ft)	74	3	0	0
Control Delay (s)	26.8	18.2	0.3	0.0
Lane LOS	D	C	A	
Approach Delay (s)	26.8	18.2	0.1	
Approach LOS	D	C		

Intersection Summary				
Average Delay	5.4			
Intersection Capacity Utilization	35.9%	ICU Level of Service	A	
Analysis Period (min)	15			



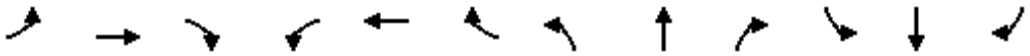
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	168	115	0	0	129	153	106	376	111	106	0	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.92		1.00	0.97		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1160	3195			2746		1014	2890		1570		2349
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1160	3195			2746		1014	2890		1570		2349
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	177	121	0	0	136	161	112	396	117	112	0	259
RTOR Reduction (vph)	0	0	0	0	141	0	0	21	0	0	0	222
Lane Group Flow (vph)	177	121	0	0	156	0	101	503	0	112	0	37
Confl. Peds. (#/hr)							4					4
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	40%	13%	0%	0%	18%	21%	62%	15%	13%	15%	0%	21%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	17.1	17.1			9.3		18.1	18.1		10.7		10.7
Effective Green, g (s)	17.1	17.1			9.3		18.1	18.1		10.7		10.7
Actuated g/C Ratio	0.23	0.23			0.12		0.24	0.24		0.14		0.14
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	263	726			339		244	695		223		334
v/s Ratio Prot	c0.15	0.04			c0.06		0.10	c0.17		c0.07		0.02
v/s Ratio Perm												
v/c Ratio	0.67	0.17			0.46		0.41	0.72		0.50		0.11
Uniform Delay, d1	26.5	23.3			30.6		24.1	26.3		29.8		28.1
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	6.6	0.1			1.0		5.1	6.5		1.8		0.1
Delay (s)	33.1	23.4			31.6		29.2	32.7		31.6		28.2
Level of Service	C	C			C		C	C		C		C
Approach Delay (s)		29.2			31.6			32.2			29.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	75.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	201	233	43	34	71	78	7	269	185	232	150	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	212	245	45	36	75	82	7	283	195	244	158	0
RTOR Reduction (vph)	0	0	30	0	0	72	0	102	0	0	0	0
Lane Group Flow (vph)	212	245	15	36	75	10	7	376	0	244	158	0
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	45%	52%	94%	63%	64%	50%	80%	79%	62%	50%	93%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Effective Green, g (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Actuated g/C Ratio	0.32	0.32	0.32	0.12	0.12	0.12	0.24	0.24		0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	404	771	270	138	275	132	242	476		170	264	
v/s Ratio Prot	c0.17	c0.10		0.03	0.03		0.01	c0.19		c0.20	0.08	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.52	0.32	0.05	0.26	0.27	0.08	0.03	0.79		1.44	0.60	
Uniform Delay, d1	33.0	30.5	27.8	47.5	47.6	46.4	34.7	42.6		51.5	48.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.8	1.1	0.4	4.5	2.4	1.1	0.2	12.5		226.1	9.6	
Delay (s)	37.8	31.6	28.2	52.0	50.0	47.5	35.0	55.1		277.6	57.9	
Level of Service	D	C	C	D	D	D	C	E		F	E	
Approach Delay (s)		33.9			49.3			54.8			191.3	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	82.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	816	72	99	940	84	49	329	91	104	304	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3355		1770	3445		1770	1761		1770	1711	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3355		1770	3445		1770	1761		1770	1711	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	78	859	76	104	989	88	52	346	96	109	320	114
RTOR Reduction (vph)	0	7	0	0	7	0	0	10	0	0	13	0
Lane Group Flow (vph)	78	928	0	104	1070	0	52	432	0	109	421	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			75			75			20			20
Heavy Vehicles (%)	2%	5%	7%	2%	2%	2%	2%	3%	4%	2%	3%	9%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.4	34.9		4.0	33.5		3.9	33.1		4.0	33.2	
Effective Green, g (s)	5.4	34.9		4.0	33.5		3.9	33.1		4.0	33.2	
Actuated g/C Ratio	0.06	0.37		0.04	0.36		0.04	0.35		0.04	0.35	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	101	1245		75	1227		73	620		75	604	
v/s Ratio Prot	0.04	0.28		c0.06	c0.31		0.03	0.25		c0.06	c0.25	
v/s Ratio Perm												
v/c Ratio	0.77	0.75		1.39	0.87		0.71	0.70		1.45	0.70	
Uniform Delay, d1	43.7	25.7		45.0	28.2		44.5	26.1		45.0	26.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	29.9	2.5		237.1	7.1		27.8	6.4		263.6	6.5	
Delay (s)	73.6	28.2		282.1	35.3		72.3	32.5		308.6	32.6	
Level of Service	E	C		F	D		E	C		F	C	
Approach Delay (s)		31.7			57.0			36.7			88.0	
Approach LOS		C			E			D			F	

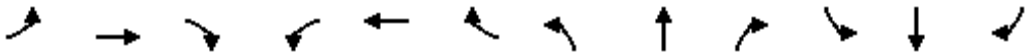
Intersection Summary					
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.84				
Actuated Cycle Length (s)	94.0	Sum of lost time (s)		18.0	
Intersection Capacity Utilization	81.6%	ICU Level of Service		D	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	245	15	7	1001	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	0	0	253	15	7	1032	0	0	0	0
Pedestrians		16			1						3	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	691	1063	16	1047	1063	520	16			1033		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	691	1063	16	1047	1063	520	16			1033		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	100	100	0	97	100			100		
cM capacity (veh/h)	0	224	1066	184	224	506	1615			680		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	168	100	351	688
Volume Left	0	0	7	0
Volume Right	0	15	0	0
cSH	224	245	1615	1700
Volume to Capacity	0.75	0.41	0.00	0.40
Queue Length 95th (ft)	130	47	0	0
Control Delay (s)	57.9	29.4	0.2	0.0
Lane LOS	F	D	A	
Approach Delay (s)	47.3		0.1	
Approach LOS	E			

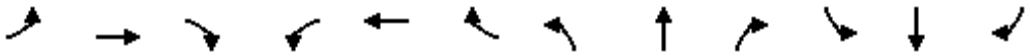
Intersection Summary				
Average Delay	9.8			
Intersection Capacity Utilization	42.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	420	495	0	0	762	171	175	684	211	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0				
Lane Util. Factor	1.00	0.95			0.95			0.95				
Frpb, ped/bikes	1.00	1.00			0.99			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.97			0.97				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1696	3406			3356			3311				
Flt Permitted	0.23	1.00			1.00			0.99				
Satd. Flow (perm)	408	3406			3356			3311				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	438	516	0	0	794	178	182	712	220	0	0	0
RTOR Reduction (vph)	0	0	0	0	18	0	0	20	0	0	0	0
Lane Group Flow (vph)	438	516	0	0	954	0	0	1094	0	0	0	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			75			75			50			
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	59.0	59.0			59.0			36.0				
Effective Green, g (s)	59.0	59.0			59.0			36.0				
Actuated g/C Ratio	0.56	0.56			0.56			0.34				
Clearance Time (s)	5.0	5.0			5.0			5.0				
Vehicle Extension (s)	3.0	3.0			3.0			3.0				
Lane Grp Cap (vph)	229	1913			1885			1135				
v/s Ratio Prot		0.15			0.28							
v/s Ratio Perm	c1.07							0.33				
v/c Ratio	1.91	0.27			0.51			0.96				
Uniform Delay, d1	23.0	11.9			14.1			33.9				
Progression Factor	0.78	0.52			1.00			1.00				
Incremental Delay, d2	423.6	0.3			1.0			18.5				
Delay (s)	441.6	6.5			15.1			52.3				
Level of Service	F	A			B			D				
Approach Delay (s)		206.3			15.1			52.3			0.0	
Approach LOS		F			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	88.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.55		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	128.6%	ICU Level of Service	H
Analysis Period (min)	15		

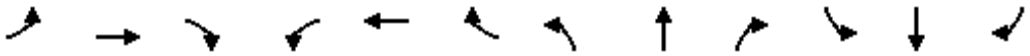
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	161	0	0	0	2	7	8	902	3	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	169	0	0	0	2	7	8	949	3	0	0	0
Pedestrians		12			1						1	
Lane Width (ft)		12.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	513	982	12	969	981	478	12			954		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	513	982	12	969	981	478	12			954		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	59	100	100	100	99	99	99			100		
cM capacity (veh/h)	413	247	1061	208	247	538	1604			728		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	169	9	483	478
Volume Left	169	0	8	0
Volume Right	0	7	0	3
cSH	413	427	1604	1700
Volume to Capacity	0.41	0.02	0.01	0.28
Queue Length 95th (ft)	49	2	0	0
Control Delay (s)	19.7	13.6	0.2	0.0
Lane LOS	C	B	A	
Approach Delay (s)	19.7	13.6	0.1	
Approach LOS	C	B		

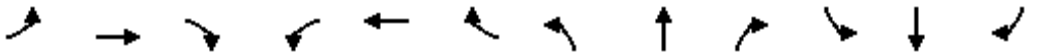
Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	47.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	0	20	0	0	0	10	181	0	0	91	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	1.00				1.00	1.00			0.99	
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.95	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1805	1615				1543	3471			3139	
Flt Permitted		0.76	1.00				0.66	1.00			1.00	
Satd. Flow (perm)		1439	1615				1079	3471			3139	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	117	0	21	0	0	0	11	191	0	0	96	42
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	23	0
Lane Group Flow (vph)	0	117	8	0	0	0	11	191	0	0	115	0
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	17%	4%	0%	0%	13%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		26.0	26.0				29.0	29.0			29.0	
Effective Green, g (s)		26.0	26.0				29.0	29.0			29.0	
Actuated g/C Ratio		0.40	0.40				0.45	0.45			0.45	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		575	646				481	1548			1400	
v/s Ratio Prot								c0.06			0.04	
v/s Ratio Perm		c0.08	0.01				0.01					
v/c Ratio		0.20	0.01				0.02	0.12			0.08	
Uniform Delay, d1		12.7	11.8				10.1	10.5			10.3	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		0.8	0.0				0.1	0.2			0.1	
Delay (s)		13.5	11.8				10.2	10.7			10.5	
Level of Service		B	B				B	B			B	
Approach Delay (s)		13.3			0.0			10.7			10.5	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



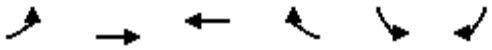
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	282	57	49	816	34	92	20	131	57	18	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1357	3471	1524	1687	3409		1649	1456	1495	1433	1344	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1357	3471	1524	1687	3409		1649	1456	1495	1433	1344	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	297	60	52	859	36	97	21	138	60	19	31
RTOR Reduction (vph)	0	0	41	0	3	0	0	0	90	0	29	0
Lane Group Flow (vph)	44	297	19	52	892	0	58	60	48	60	21	0
Heavy Vehicles (%)	33%	4%	6%	7%	4%	35%	4%	50%	8%	26%	45%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	4.6	31.5	31.5	6.3	33.2		35.0	35.0	35.0	8.1	8.1	
Effective Green, g (s)	4.6	31.5	31.5	6.3	33.2		35.0	35.0	35.0	8.1	8.1	
Actuated g/C Ratio	0.05	0.31	0.31	0.06	0.33		0.35	0.35	0.35	0.08	0.08	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	61	1083	475	105	1121		572	505	518	115	107	
v/s Ratio Prot	c0.03	0.09		0.03	c0.26		0.04	c0.04		c0.04	0.02	
v/s Ratio Perm			0.01						0.03			
v/c Ratio	0.72	0.27	0.04	0.50	0.80		0.10	0.12	0.09	0.52	0.20	
Uniform Delay, d1	47.5	26.1	24.2	45.8	30.8		22.3	22.4	22.2	44.5	43.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	34.1	0.1	0.0	3.6	4.0		0.4	0.5	0.4	4.2	0.9	
Delay (s)	81.6	26.2	24.2	49.4	34.8		22.7	22.9	22.6	48.8	44.3	
Level of Service	F	C	C	D	C		C	C	C	D	D	
Approach Delay (s)		32.0			35.6			22.7			46.7	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	100.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	267	91	195	753	326	129	143	223	164	116	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.91		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	3197		1703	3505	1543	1583	3036		1736	2923	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1626	3197		1703	3505	1543	1583	3036		1736	2923	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	71	281	96	205	793	343	136	151	235	173	122	39
RTOR Reduction (vph)	0	35	0	0	0	285	0	198	0	0	32	0
Lane Group Flow (vph)	71	342	0	205	793	58	136	188	0	173	129	0
Confl. Peds. (#/hr)			20	1								
Confl. Bikes (#/hr)			75			3						
Heavy Vehicles (%)	11%	4%	13%	6%	3%	3%	14%	5%	10%	4%	12%	41%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.31	0.31		0.17	0.17	0.17	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	496	975		286	590	259	249	479		274	461	
v/s Ratio Prot	0.04	c0.11		0.12	c0.23		c0.09	0.06		c0.10	0.04	
v/s Ratio Perm						0.04						
v/c Ratio	0.14	0.35		0.72	1.34	0.22	0.55	0.39		0.63	0.28	
Uniform Delay, d1	24.0	25.7		37.4	39.5	34.1	36.9	35.9		37.4	35.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.0		14.3	165.9	2.0	8.4	2.4		10.6	1.5	
Delay (s)	24.6	26.7		51.7	205.4	36.1	45.2	38.3		48.0	36.8	
Level of Service	C	C		D	F	D	D	D		D	D	
Approach Delay (s)		26.3			138.6			40.1			42.6	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	88.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	77	661	1089	57	5	205
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	79	681	1123	59	5	211
Pedestrians		2				
Lane Width (ft)		12.0				
Walking Speed (ft/s)		4.0				
Percent Blockage		0				
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1120	405			
pX, platoon unblocked	0.86				0.86	0.86
vC, conflicting volume	1181				1652	593
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	878				1426	191
tC, single (s)	4.9				7.5	7.0
tC, 2 stage (s)						
tF (s)	2.6				3.8	3.3
p0 queue free %	83				92	70
cM capacity (veh/h)	478				68	698

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	307	454	748	433	216
Volume Left	79	0	0	0	5
Volume Right	0	0	0	59	211
cSH	478	1700	1700	1700	572
Volume to Capacity	0.17	0.27	0.44	0.25	0.38
Queue Length 95th (ft)	15	0	0	0	44
Control Delay (s)	5.6	0.0	0.0	0.0	15.1
Lane LOS	A				C
Approach Delay (s)	2.3		0.0		15.1
Approach LOS					C

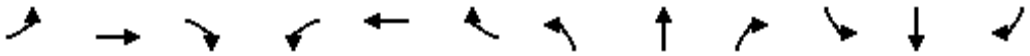
Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	220	0	0	0	0	756
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	232	0	0	0	0	796
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	398	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	398	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	60	100			100	
cM capacity (veh/h)	572	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	116	116	398	398
Volume Left	116	116	0	0
Volume Right	0	0	0	0
cSH	572	572	1700	1700
Volume to Capacity	0.20	0.20	0.23	0.23
Queue Length 95th (ft)	19	19	0	0
Control Delay (s)	12.9	12.9	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	12.9		0.0	
Approach LOS	B			

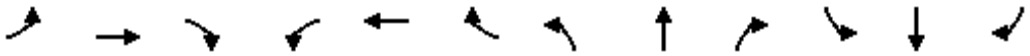
Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	309	173	200	703	0	0	0	0	164	504	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.95		1.00	0.95						0.95	
Frpb, ped/bikes		0.98		1.00	1.00						0.98	
Flpb, ped/bikes		1.00		0.99	1.00						1.00	
Frt		0.95		1.00	1.00						0.95	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3152		1757	3539						3224	
Flt Permitted		1.00		0.43	1.00						0.99	
Satd. Flow (perm)		3152		789	3539						3224	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	325	182	211	740	0	0	0	0	173	531	317
RTOR Reduction (vph)	0	91	0	0	0	0	0	0	0	0	61	0
Lane Group Flow (vph)	0	416	0	211	740	0	0	0	0	0	960	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			75			75						50
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		38.0		38.0	38.0						37.0	
Effective Green, g (s)		38.0		38.0	38.0						37.0	
Actuated g/C Ratio		0.45		0.45	0.45						0.44	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		1409		352	1582						1403	
v/s Ratio Prot		0.13			0.21							
v/s Ratio Perm				c0.27							0.30	
v/c Ratio		0.30		0.60	0.47						0.68	
Uniform Delay, d1		15.0		17.8	16.4						19.3	
Progression Factor		1.00		0.41	0.39						1.00	
Incremental Delay, d2		0.5		2.3	0.2						2.7	
Delay (s)		15.5		9.6	6.6						22.0	
Level of Service		B		A	A						C	
Approach Delay (s)		15.5			7.2			0.0			22.0	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	114.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	182	24	8	0	0	0	0	0	42	572	17
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	192	25	8	0	0	0	0	0	44	602	18
Pedestrians								1				
Lane Width (ft)								0.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	699	699	311	512	708	0	620			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	699	699	311	512	708	0	620			0		
tC, single (s)	7.7	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	100	46	96	96	100	100	100			97		
cM capacity (veh/h)	309	356	691	237	352	1091	970			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	217	8	345	319
Volume Left	0	8	44	0
Volume Right	25	0	0	18
cSH	378	237	1636	1700
Volume to Capacity	0.57	0.04	0.03	0.19
Queue Length 95th (ft)	86	3	2	0
Control Delay (s)	26.6	20.7	1.1	0.0
Lane LOS	D	C	A	
Approach Delay (s)	26.6	20.7	0.6	
Approach LOS	D	C		

Intersection Summary				
Average Delay	7.1			
Intersection Capacity Utilization	35.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	32	0	0	173	151	56	212	173	79	0	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.93		1.00	0.93		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1624	3471			3080		1441	2987		1543		2682
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1624	3471			3080		1441	2987		1543		2682
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	34	0	0	182	159	59	223	182	83	0	266
RTOR Reduction (vph)	0	0	0	0	133	0	0	126	0	0	0	240
Lane Group Flow (vph)	22	34	0	0	208	0	53	285	0	83	0	26
Confl. Peds. (#/hr)	6					6						
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	0%	4%	0%	0%	9%	7%	14%	7%	9%	17%	0%	6%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	3.6	3.6			8.8		16.4	16.4		5.1		5.1
Effective Green, g (s)	3.6	3.6			8.8		16.4	16.4		5.1		5.1
Actuated g/C Ratio	0.07	0.07			0.17		0.31	0.31		0.10		0.10
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	110	236			512		446	926		148		258
v/s Ratio Prot	c0.01	0.01			c0.07		0.04	c0.10		c0.05		0.01
v/s Ratio Perm												
v/c Ratio	0.20	0.14			0.41		0.12	0.31		0.56		0.10
Uniform Delay, d1	23.3	23.2			19.7		13.1	13.9		22.8		21.8
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	0.9	0.3			0.5		0.5	0.9		4.8		0.2
Delay (s)	24.2	23.5			20.2		13.6	14.8		27.6		22.0
Level of Service	C	C			C		B	B		C		C
Approach Delay (s)		23.8			20.2			14.7			23.3	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	52.9	Sum of lost time (s)	19.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	36	1	19	36	55	0	11	31	44	15	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	794	1357	3471	1328		2621		1703	2356	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	794	1357	3471	1328		2621		1703	2356	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	38	1	20	38	58	0	12	33	46	16	1
RTOR Reduction (vph)	0	0	1	0	0	35	0	23	0	0	1	0
Lane Group Flow (vph)	14	38	0	20	38	23	0	22	0	46	16	0
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			4			2						3
Heavy Vehicles (%)	0%	0%	100%	33%	4%	20%	0%	38%	17%	6%	55%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	4.0	39.0	39.0	5.0	40.0	40.0		30.0		6.0	32.0	
Effective Green, g (s)	4.0	39.0	39.0	5.0	40.0	40.0		30.0		6.0	32.0	
Actuated g/C Ratio	0.04	0.39	0.39	0.05	0.40	0.40		0.30		0.06	0.32	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Grp Cap (vph)	72	1407	309	67	1388	531		786		102	753	
v/s Ratio Prot	0.01	0.01		c0.01	0.01			c0.01		c0.03	0.01	
v/s Ratio Perm			0.00			c0.02						
v/c Ratio	0.19	0.03	0.00	0.30	0.03	0.04		0.03		0.45	0.02	
Uniform Delay, d1	46.4	18.8	18.6	45.8	18.2	18.3		24.7		45.4	23.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	5.9	0.0	0.0	11.0	0.0	0.2		0.1		13.7	0.1	
Delay (s)	52.4	18.8	18.6	56.9	18.2	18.5		24.8		59.1	23.3	
Level of Service	D	B	B	E	B	B		C		E	C	
Approach Delay (s)		27.7			25.0			24.8			49.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.08		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	578	32	76	786	81	59	165	59	101	217	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	0.99		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3426		1805	3407		1805	1802		1770	1710	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3426		1805	3407		1805	1802		1770	1710	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	44	584	32	77	794	82	60	167	60	102	219	119
RTOR Reduction (vph)	0	5	0	0	9	0	0	13	0	0	18	0
Lane Group Flow (vph)	44	611	0	77	867	0	60	214	0	102	320	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			75			75			20			20
Heavy Vehicles (%)	0%	4%	0%	0%	3%	0%	0%	0%	0%	2%	4%	0%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	3.3	28.3		4.1	29.1		4.4	34.2		4.1	33.9	
Effective Green, g (s)	3.3	28.3		4.1	29.1		4.4	34.2		4.1	33.9	
Actuated g/C Ratio	0.04	0.32		0.05	0.33		0.05	0.39		0.05	0.38	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	67	1093		83	1117		89	694		81	653	
v/s Ratio Prot	0.02	0.18		c0.04	c0.25		0.03	0.12		c0.06	c0.19	
v/s Ratio Perm												
v/c Ratio	0.66	0.56		0.93	0.78		0.67	0.31		1.26	0.49	
Uniform Delay, d1	42.1	25.0		42.2	26.9		41.4	19.0		42.3	20.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.8	0.6		74.1	3.5		18.3	1.2		184.8	2.6	
Delay (s)	63.0	25.7		116.2	30.3		59.7	20.2		227.1	23.5	
Level of Service	E	C		F	C		E	C		F	C	
Approach Delay (s)		28.1			37.3			28.4			70.7	
Approach LOS		C			D			C			E	

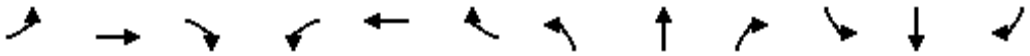
Intersection Summary			
HCM 2000 Control Delay	39.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	215	12	5	557	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	0	226	13	5	586	0	0	0	0
Pedestrians		3			3						2	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	434	603	3	600	603	298	3			589		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	434	603	3	600	603	298	3			589		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	45	98	100			100		
cM capacity (veh/h)	283	413	1086	376	413	702	1632			993		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	151	88	201	391
Volume Left	0	0	5	0
Volume Right	0	13	0	0
cSH	413	439	1632	1700
Volume to Capacity	0.36	0.20	0.00	0.23
Queue Length 95th (ft)	41	18	0	0
Control Delay (s)	18.6	15.2	0.2	0.0
Lane LOS	C	C	A	
Approach Delay (s)	17.4		0.1	
Approach LOS	C			

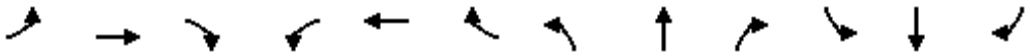
Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	33.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	201	273	0	0	755	108	150	353	178	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0				
Lane Util. Factor	1.00	0.95			0.95			0.95				
Frpb, ped/bikes	1.00	1.00			1.00			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.98			0.96				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1752	3374			3467			3361				
Flt Permitted	0.21	1.00			1.00			0.99				
Satd. Flow (perm)	396	3374			3467			3361				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	212	287	0	0	795	114	158	372	187	0	0	0
RTOR Reduction (vph)	0	0	0	0	13	0	0	42	0	0	0	0
Lane Group Flow (vph)	212	287	0	0	896	0	0	675	0	0	0	0
Confl. Peds. (#/hr)	1					1			8			
Confl. Bikes (#/hr)			2			2			27			
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	38.0	38.0			38.0			37.0				
Effective Green, g (s)	38.0	38.0			38.0			37.0				
Actuated g/C Ratio	0.45	0.45			0.45			0.44				
Clearance Time (s)	5.0	5.0			5.0			5.0				
Vehicle Extension (s)	3.0	3.0			3.0			3.0				
Lane Grp Cap (vph)	177	1508			1549			1463				
v/s Ratio Prot		0.09			0.26							
v/s Ratio Perm	c0.54							0.20				
v/c Ratio	1.20	0.19			0.58			0.46				
Uniform Delay, d1	23.5	14.2			17.5			17.0				
Progression Factor	0.98	0.86			1.00			1.00				
Incremental Delay, d2	127.7	0.3			0.5			0.2				
Delay (s)	150.8	12.5			18.1			17.2				
Level of Service	F	B			B			B				
Approach Delay (s)		71.3			18.1			17.2			0.0	
Approach LOS		E			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	114.1%	ICU Level of Service	H
Analysis Period (min)	15		

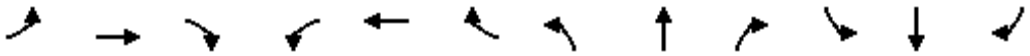
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	182	0	0	0	2	0	5	453	35	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	192	0	0	0	2	0	5	477	37	0	0	0
Pedestrians		9			13							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		1			1							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	259	546	9	519	528	270	9			527		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	259	546	9	519	528	270	9			527		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	71	100	100	100	100	100	100			100		
cM capacity (veh/h)	655	438	1069	432	449	726	1612			1039		

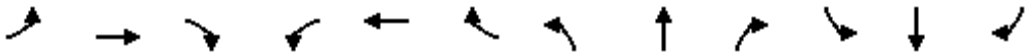
Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	192	2	244	275
Volume Left	192	0	5	0
Volume Right	0	0	0	37
cSH	655	449	1612	1700
Volume to Capacity	0.29	0.00	0.00	0.16
Queue Length 95th (ft)	30	0	0	0
Control Delay (s)	12.8	13.1	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	12.8	13.1	0.1	
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	37.3%	ICU Level of Service	A	
Analysis Period (min)	15			



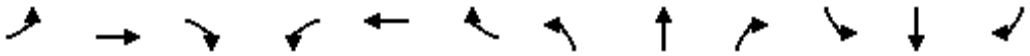
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	171	0	23	0	0	0	27	724	2	0	141	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.97	
Flpb, ped/bikes		0.98	1.00				0.98	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.94	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1741	1165				1184	2735			2575	
Flt Permitted		0.76	1.00				0.59	1.00			1.00	
Satd. Flow (perm)		1388	1165				736	2735			2575	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	180	0	24	0	0	0	28	762	2	0	148	113
RTOR Reduction (vph)	0	0	15	0	0	0	0	1	0	0	61	0
Lane Group Flow (vph)	0	180	9	0	0	0	28	763	0	0	200	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	2%	0%	33%	0%	0%	0%	50%	32%	0%	0%	49%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		25.0	25.0				30.0	30.0			30.0	
Effective Green, g (s)		25.0	25.0				30.0	30.0			30.0	
Actuated g/C Ratio		0.38	0.38				0.46	0.46			0.46	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		533	448				339	1262			1188	
v/s Ratio Prot								c0.28			0.08	
v/s Ratio Perm		c0.13	0.01				0.04					
v/c Ratio		0.34	0.02				0.08	0.60			0.17	
Uniform Delay, d1		14.1	12.4				9.8	13.1			10.2	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		1.7	0.1				0.5	2.2			0.3	
Delay (s)		15.9	12.5				10.3	15.2			10.5	
Level of Service		B	B				B	B			B	
Approach Delay (s)		15.5			0.0			15.1			10.5	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



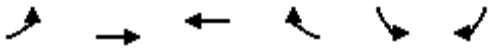
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	395	140	137	902	52	418	84	300	89	34	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1504	3505	1442	1433	3360		1618	1351	1267	1517	1397	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1504	3505	1442	1433	3360		1618	1351	1267	1517	1397	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	416	147	144	949	55	440	88	316	94	36	76
RTOR Reduction (vph)	0	0	111	0	4	0	0	0	218	0	68	0
Lane Group Flow (vph)	8	416	36	144	1000	0	264	264	98	94	44	0
Confl. Peds. (#/hr)			20						20			
Heavy Vehicles (%)	20%	3%	8%	26%	3%	68%	6%	76%	24%	19%	50%	9%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	0.7	19.7	19.7	10.7	29.7		21.6	21.6	21.6	8.2	8.2	
Effective Green, g (s)	0.7	19.7	19.7	10.7	29.7		21.6	21.6	21.6	8.2	8.2	
Actuated g/C Ratio	0.01	0.25	0.25	0.13	0.37		0.27	0.27	0.27	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	13	860	354	191	1244		435	363	341	155	142	
v/s Ratio Prot	0.01	0.12		c0.10	c0.30		0.16	c0.20		c0.06	0.03	
v/s Ratio Perm			0.03						0.08			
v/c Ratio	0.62	0.48	0.10	0.75	0.80		0.61	0.73	0.29	0.61	0.31	
Uniform Delay, d1	39.6	25.9	23.4	33.5	22.6		25.6	26.6	23.2	34.5	33.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	64.0	0.4	0.1	15.5	3.9		2.4	7.1	0.5	16.4	5.5	
Delay (s)	103.7	26.3	23.5	48.9	26.5		28.0	33.7	23.7	50.8	38.9	
Level of Service	F	C	C	D	C		C	C	C	D	D	
Approach Delay (s)		26.7			29.3			28.2			44.4	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	517	119	243	899	284	133	232	490	179	101	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.90		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1433	3186		1626	3438	1495	1444	2823		1612	2762	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1433	3186		1626	3438	1495	1444	2823		1612	2762	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	161	533	123	251	927	293	137	239	505	185	104	34
RTOR Reduction (vph)	0	21	0	0	0	244	0	331	0	0	29	0
Lane Group Flow (vph)	161	635	0	251	927	49	137	413	0	185	109	0
Confl. Peds. (#/hr)			20	1								
Confl. Bikes (#/hr)			75									
Heavy Vehicles (%)	26%	8%	10%	11%	5%	8%	25%	23%	11%	12%	18%	50%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.31	0.31		0.17	0.17	0.17	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	437	972		273	579	251	228	445		254	436	
v/s Ratio Prot	0.11	c0.20		0.15	c0.27		0.09	c0.15		c0.11	0.04	
v/s Ratio Perm						0.03						
v/c Ratio	0.37	0.65		0.92	1.60	0.20	0.60	0.93		0.73	0.25	
Uniform Delay, d1	25.8	28.6		38.9	39.5	34.0	37.2	39.5		38.1	35.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	3.4		37.2	278.5	1.7	11.2	28.0		16.7	1.4	
Delay (s)	28.2	32.1		76.0	318.0	35.7	48.4	67.5		54.8	36.5	
Level of Service	C	C		E	F	D	D	E		D	D	
Approach Delay (s)		31.3			220.5			64.5			46.9	
Approach LOS		C			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	120.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	135	1115	1165	43	3	265
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	142	1174	1226	45	3	279
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1120	405			
pX, platoon unblocked	0.86				0.89	0.86
vC, conflicting volume	1274				2122	638
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	994				1745	256
tC, single (s)	4.9				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.6				3.5	3.4
p0 queue free %	67				93	55
cM capacity (veh/h)	431				47	616

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	533	782	818	454	282
Volume Left	142	0	0	0	3
Volume Right	0	0	0	45	279
cSH	431	1700	1700	1700	543
Volume to Capacity	0.33	0.46	0.48	0.27	0.52
Queue Length 95th (ft)	36	0	0	0	74
Control Delay (s)	10.1	0.0	0.0	0.0	18.6
Lane LOS	B				C
Approach Delay (s)	4.1		0.0		18.6
Approach LOS					C

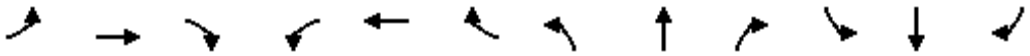
Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	252	0	0	0	0	821
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	260	0	0	0	0	846
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	423	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	423	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	53	100			100	
cM capacity (veh/h)	554	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	130	130	423	423
Volume Left	130	130	0	0
Volume Right	0	0	0	0
cSH	554	554	1700	1700
Volume to Capacity	0.23	0.23	0.25	0.25
Queue Length 95th (ft)	23	23	0	0
Control Delay (s)	13.5	13.5	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	13.5		0.0	
Approach LOS	B			

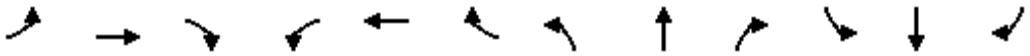
Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	764	186	175	812	0	0	0	0	189	625	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.95		1.00	0.95						0.95	
Frpb, ped/bikes		0.99		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.97		1.00	1.00						0.97	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3286		1763	3471						3342	
Flt Permitted		1.00		0.22	1.00						0.99	
Satd. Flow (perm)		3286		412	3471						3342	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	796	194	182	846	0	0	0	0	197	651	254
RTOR Reduction (vph)	0	20	0	0	0	0	0	0	0	0	27	0
Lane Group Flow (vph)	0	970	0	182	846	0	0	0	0	0	1075	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			75			75						50
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		59.0		59.0	59.0						36.0	
Effective Green, g (s)		59.0		59.0	59.0						36.0	
Actuated g/C Ratio		0.56		0.56	0.56						0.34	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		1846		231	1950						1145	
v/s Ratio Prot		0.30			0.24							
v/s Ratio Perm				c0.44							0.32	
v/c Ratio		0.53		0.79	0.43						0.94	
Uniform Delay, d1		14.3		18.1	13.3						33.4	
Progression Factor		1.00		0.63	0.45						1.00	
Incremental Delay, d2		1.1		19.2	0.6						15.5	
Delay (s)		15.4		30.6	6.5						48.9	
Level of Service		B		C	A						D	
Approach Delay (s)		15.4			10.8			0.0			48.9	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	129.6%	ICU Level of Service	H
Analysis Period (min)	15		

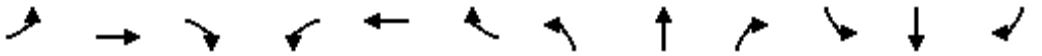
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	161	12	7	2	0	0	0	0	10	707	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	169	13	7	2	0	0	0	0	11	744	3
Pedestrians		3						1				
Lane Width (ft)		12.0						0.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	771	770	378	492	771	0	750			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	771	770	378	492	771	0	750			0		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	49	98	97	99	100	100			99		
cM capacity (veh/h)	275	331	624	270	330	1091	866			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	182	9	383	375
Volume Left	0	7	11	0
Volume Right	13	0	0	3
cSH	342	281	1636	1700
Volume to Capacity	0.53	0.03	0.01	0.22
Queue Length 95th (ft)	74	3	0	0
Control Delay (s)	26.9	18.3	0.3	0.0
Lane LOS	D	C	A	
Approach Delay (s)	26.9	18.3	0.1	
Approach LOS	D	C		

Intersection Summary				
Average Delay	5.5			
Intersection Capacity Utilization	35.9%	ICU Level of Service	A	
Analysis Period (min)	15			



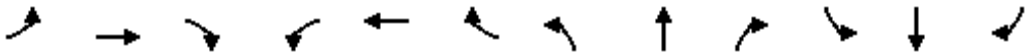
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	168	117	0	0	132	157	123	376	111	109	0	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.92		1.00	0.97		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1160	3195			2746		1014	2885		1570		2349
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1160	3195			2746		1014	2885		1570		2349
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	177	123	0	0	139	165	129	396	117	115	0	259
RTOR Reduction (vph)	0	0	0	0	144	0	0	21	0	0	0	222
Lane Group Flow (vph)	177	123	0	0	160	0	116	505	0	115	0	37
Confl. Peds. (#/hr)							4					4
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	40%	13%	0%	0%	18%	21%	62%	15%	13%	15%	0%	21%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	17.1	17.1			9.5		18.1	18.1		10.8		10.8
Effective Green, g (s)	17.1	17.1			9.5		18.1	18.1		10.8		10.8
Actuated g/C Ratio	0.23	0.23			0.13		0.24	0.24		0.14		0.14
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	262	723			345		243	691		224		336
v/s Ratio Prot	c0.15	0.04			c0.06		0.11	c0.18		c0.07		0.02
v/s Ratio Perm												
v/c Ratio	0.68	0.17			0.46		0.48	0.73		0.51		0.11
Uniform Delay, d1	26.7	23.5			30.6		24.6	26.5		29.9		28.2
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	6.7	0.1			1.0		6.6	6.7		2.0		0.1
Delay (s)	33.4	23.6			31.6		31.2	33.2		31.9		28.3
Level of Service	C	C			C		C	C		C		C
Approach Delay (s)		29.4			31.6			32.8			29.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	75.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	201	233	43	34	71	98	7	269	185	245	150	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1245	2375	832	1107	2201	1062	1003	1970		1203	1870	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	212	245	45	36	75	103	7	283	195	258	158	0
RTOR Reduction (vph)	0	0	30	0	0	90	0	102	0	0	0	0
Lane Group Flow (vph)	212	245	15	36	75	13	7	376	0	258	158	0
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	45%	52%	94%	63%	64%	50%	80%	79%	62%	50%	93%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Effective Green, g (s)	39.0	39.0	39.0	15.0	15.0	15.0	29.0	29.0		17.0	17.0	
Actuated g/C Ratio	0.32	0.32	0.32	0.12	0.12	0.12	0.24	0.24		0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	404	771	270	138	275	132	242	476		170	264	
v/s Ratio Prot	c0.17	c0.10		0.03	0.03		0.01	c0.19		c0.21	0.08	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.52	0.32	0.05	0.26	0.27	0.10	0.03	0.79		1.52	0.60	
Uniform Delay, d1	33.0	30.5	27.8	47.5	47.6	46.5	34.7	42.6		51.5	48.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.8	1.1	0.4	4.5	2.4	1.5	0.2	12.5		260.7	9.6	
Delay (s)	37.8	31.6	28.2	52.0	50.0	48.0	35.0	55.1		312.2	57.9	
Level of Service	D	C	C	D	D	D	C	E		F	E	
Approach Delay (s)		33.9			49.4			54.8			215.6	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	89.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	831	72	99	977	84	49	329	91	104	304	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3357		1770	3448		1770	1761		1770	1703	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3357		1770	3448		1770	1761		1770	1703	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	96	875	76	104	1028	88	52	346	96	109	320	123
RTOR Reduction (vph)	0	7	0	0	7	0	0	10	0	0	14	0
Lane Group Flow (vph)	96	944	0	104	1109	0	52	432	0	109	429	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			75			75			20			20
Heavy Vehicles (%)	2%	5%	7%	2%	2%	2%	2%	3%	4%	2%	3%	9%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	7.0	36.3		4.0	33.3		4.0	32.9		4.0	32.9	
Effective Green, g (s)	7.0	36.3		4.0	33.3		4.0	32.9		4.0	32.9	
Actuated g/C Ratio	0.07	0.38		0.04	0.35		0.04	0.35		0.04	0.35	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	130	1280		74	1206		74	608		74	588	
v/s Ratio Prot	0.05	c0.28		c0.06	c0.32		0.03	0.25		c0.06	c0.25	
v/s Ratio Perm												
v/c Ratio	0.74	0.74		1.41	0.92		0.70	0.71		1.47	0.73	
Uniform Delay, d1	43.2	25.4		45.6	29.7		45.0	27.0		45.6	27.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	19.5	2.3		245.2	11.2		26.0	6.9		272.1	7.7	
Delay (s)	62.7	27.6		290.8	40.9		71.0	33.9		317.7	35.0	
Level of Service	E	C		F	D		E	C		F	C	
Approach Delay (s)		30.8			62.2			37.8			90.8	
Approach LOS		C			E			D			F	

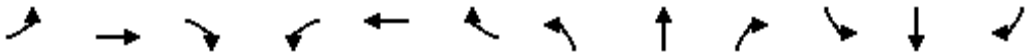
Intersection Summary			
HCM 2000 Control Delay	53.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	95.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	245	15	7	1006	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	0	0	253	15	7	1037	0	0	0	0
Pedestrians		16			1						3	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	694	1069	16	1053	1069	523	16			1038		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	694	1069	16	1053	1069	523	16			1038		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	100	100	0	97	100			100		
cM capacity (veh/h)	0	222	1066	182	222	504	1615			677		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	168	100	353	691
Volume Left	0	0	7	0
Volume Right	0	15	0	0
cSH	222	243	1615	1700
Volume to Capacity	0.76	0.41	0.00	0.41
Queue Length 95th (ft)	132	47	0	0
Control Delay (s)	58.9	29.7	0.2	0.0
Lane LOS	F	D	A	
Approach Delay (s)	48.0		0.1	
Approach LOS	E			

Intersection Summary				
Average Delay	9.9			
Intersection Capacity Utilization	42.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	425	527	0	0	808	171	179	684	211	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0				
Lane Util. Factor	1.00	0.95			0.95			0.95				
Frpb, ped/bikes	1.00	1.00			1.00			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.97			0.97				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1702	3406			3389			3336				
Flt Permitted	0.21	1.00			1.00			0.99				
Satd. Flow (perm)	379	3406			3389			3336				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	443	549	0	0	842	178	186	712	220	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	20	0	0	0	0
Lane Group Flow (vph)	443	549	0	0	1003	0	0	1098	0	0	0	0
Confl. Peds. (#/hr)	2					2			4	4		
Confl. Bikes (#/hr)			1						44			
Heavy Vehicles (%)	6%	6%	3%	2%	4%	1%	3%	4%	1%	4%	1%	1%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	59.0	59.0			59.0			36.0				
Effective Green, g (s)	59.0	59.0			59.0			36.0				
Actuated g/C Ratio	0.56	0.56			0.56			0.34				
Clearance Time (s)	5.0	5.0			5.0			5.0				
Vehicle Extension (s)	3.0	3.0			3.0			3.0				
Lane Grp Cap (vph)	212	1913			1904			1143				
v/s Ratio Prot		0.16			0.30							
v/s Ratio Perm	c1.17							0.33				
v/c Ratio	2.09	0.29			0.53			0.96				
Uniform Delay, d1	23.0	12.0			14.3			33.8				
Progression Factor	0.76	0.50			1.00			1.00				
Incremental Delay, d2	502.9	0.3			1.0			17.8				
Delay (s)	520.3	6.3			15.4			51.6				
Level of Service	F	A			B			D				
Approach Delay (s)		235.8			15.4			51.6			0.0	
Approach LOS		F			B			D			A	

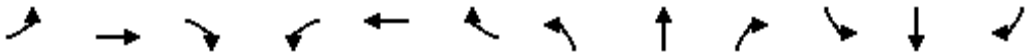
Intersection Summary			
HCM 2000 Control Delay	98.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.66		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	129.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	161	0	0	0	2	7	8	906	3	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	169	0	0	0	2	7	8	954	3	0	0	0
Pedestrians		12			1						1	
Lane Width (ft)		12.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	515	987	12	973	985	480	12			958		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	515	987	12	973	985	480	12			958		
tC, single (s)	7.7	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	59	100	100	100	99	99	99			100		
cM capacity (veh/h)	411	246	1061	207	246	537	1604			726		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	169	9	485	480
Volume Left	169	0	8	0
Volume Right	0	7	0	3
cSH	411	425	1604	1700
Volume to Capacity	0.41	0.02	0.01	0.28
Queue Length 95th (ft)	49	2	0	0
Control Delay (s)	19.7	13.7	0.2	0.0
Lane LOS	C	B	A	
Approach Delay (s)	19.7	13.7	0.1	
Approach LOS	C	B		

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	47.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	0	54	0	0	0	45	181	0	0	91	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.96	
Flpb, ped/bikes		0.98	1.00				0.98	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.90	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1776	1550				1520	3471			2983	
Flt Permitted		0.76	1.00				0.56	1.00			1.00	
Satd. Flow (perm)		1415	1550				898	3471			2983	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	284	0	57	0	0	0	47	191	0	0	96	217
RTOR Reduction (vph)	0	0	34	0	0	0	0	0	0	0	120	0
Lane Group Flow (vph)	0	284	23	0	0	0	47	191	0	0	193	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			20			20			20			20
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	17%	4%	0%	0%	13%	0%
Turn Type	Perm	NA	Perm	Perm			Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		26.0	26.0				29.0	29.0			29.0	
Effective Green, g (s)		26.0	26.0				29.0	29.0			29.0	
Actuated g/C Ratio		0.40	0.40				0.45	0.45			0.45	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Lane Grp Cap (vph)		566	620				400	1548			1330	
v/s Ratio Prot								0.06			c0.06	
v/s Ratio Perm		c0.20	0.01				0.05					
v/c Ratio		0.50	0.04				0.12	0.12			0.14	
Uniform Delay, d1		14.6	11.9				10.5	10.5			10.7	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		3.2	0.1				0.6	0.2			0.2	
Delay (s)		17.8	12.0				11.1	10.7			10.9	
Level of Service		B	B				B	B			B	
Approach Delay (s)		16.8			0.0			10.8			10.9	
Approach LOS		B			A			B			B	

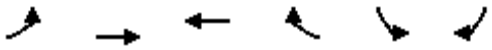
Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	282	96	176	816	34	121	20	261	57	18	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1357	3471	1474	1687	3409		1649	1489	1449	1433	1344	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1357	3471	1474	1687	3409		1649	1489	1449	1433	1344	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	297	101	185	859	36	127	21	275	60	19	31
RTOR Reduction (vph)	0	0	72	0	3	0	0	0	181	0	29	0
Lane Group Flow (vph)	44	297	29	185	892	0	74	74	94	60	21	0
Confl. Peds. (#/hr)			20						20			
Heavy Vehicles (%)	33%	4%	6%	7%	4%	35%	4%	50%	8%	26%	45%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		6	6		2	2	
Permitted Phases			4						6			
Actuated Green, G (s)	4.7	29.5	29.5	9.4	34.2		34.6	34.6	34.6	8.2	8.2	
Effective Green, g (s)	4.7	29.5	29.5	9.4	34.2		34.6	34.6	34.6	8.2	8.2	
Actuated g/C Ratio	0.05	0.29	0.29	0.09	0.34		0.34	0.34	0.34	0.08	0.08	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	62	1006	427	155	1146		561	506	492	115	108	
v/s Ratio Prot	0.03	0.09		c0.11	c0.26		0.04	0.05		c0.04	0.02	
v/s Ratio Perm			0.02						c0.06			
v/c Ratio	0.71	0.30	0.07	1.19	0.78		0.13	0.15	0.19	0.52	0.20	
Uniform Delay, d1	47.8	28.0	26.1	46.1	30.3		23.2	23.3	23.7	44.9	43.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	31.0	0.2	0.1	133.7	3.4		0.5	0.6	0.9	4.2	0.9	
Delay (s)	78.8	28.2	26.2	179.9	33.8		23.7	23.9	24.5	49.1	44.6	
Level of Service	E	C	C	F	C		C	C	C	D	D	
Approach Delay (s)		32.8			58.8			24.3			47.0	
Approach LOS		C			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	45.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	101.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	370	98	195	856	326	137	143	223	164	116	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	3244		1703	3505	1543	1583	3036		1736	2840	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1626	3244		1703	3505	1543	1583	3036		1736	2840	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	91	389	103	205	901	343	144	151	235	173	122	56
RTOR Reduction (vph)	0	25	0	0	0	285	0	198	0	0	47	0
Lane Group Flow (vph)	91	467	0	205	901	58	144	188	0	173	131	0
Confl. Peds. (#/hr)			20	1								
Confl. Bikes (#/hr)			75			3						
Heavy Vehicles (%)	11%	4%	13%	6%	3%	3%	14%	5%	10%	4%	12%	41%
Turn Type	Split	NA		Split	NA	Perm	Split	NA		Split	NA	
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Effective Green, g (s)	29.0	29.0		16.0	16.0	16.0	15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.31	0.31		0.17	0.17	0.17	0.16	0.16		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	496	990		286	590	259	249	479		274	448	
v/s Ratio Prot	0.06	c0.14		0.12	c0.26		c0.09	0.06		c0.10	0.05	
v/s Ratio Perm						0.04						
v/c Ratio	0.18	0.47		0.72	1.53	0.22	0.58	0.39		0.63	0.29	
Uniform Delay, d1	24.3	26.8		37.4	39.5	34.1	37.1	35.9		37.4	35.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	1.6		14.3	245.7	2.0	9.4	2.4		10.6	1.6	
Delay (s)	25.1	28.4		51.7	285.2	36.1	46.5	38.3		48.0	37.0	
Level of Service	C	C		D	F	D	D	D		D	D	
Approach Delay (s)		27.9			193.2			40.5			42.4	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	114.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	77	765	1192	57	5	205
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	79	789	1229	59	5	211
Pedestrians		2				
Lane Width (ft)		12.0				
Walking Speed (ft/s)		4.0				
Percent Blockage		0				
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1120	405			
pX, platoon unblocked	0.83				0.83	0.83
vC, conflicting volume	1288				1811	646
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	937				1568	164
tC, single (s)	4.9				7.5	7.0
tC, 2 stage (s)						
tF (s)	2.6				3.8	3.3
p0 queue free %	82				90	70
cM capacity (veh/h)	435				51	703

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	342	526	819	468	216
Volume Left	79	0	0	0	5
Volume Right	0	0	0	59	211
cSH	435	1700	1700	1700	539
Volume to Capacity	0.18	0.31	0.48	0.28	0.40
Queue Length 95th (ft)	17	0	0	0	48
Control Delay (s)	6.0	0.0	0.0	0.0	16.1
Lane LOS	A				C
Approach Delay (s)	2.4		0.0		16.1
Approach LOS					C

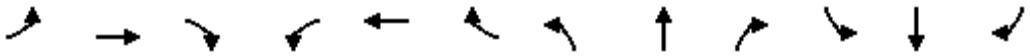
Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	220	0	0	0	0	770
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	232	0	0	0	0	811
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			444			
pX, platoon unblocked						
vC, conflicting volume	405	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	405	0			0	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	59	100			100	
cM capacity (veh/h)	566	1091			1636	

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total	116	116	405	405
Volume Left	116	116	0	0
Volume Right	0	0	0	0
cSH	566	566	1700	1700
Volume to Capacity	0.20	0.20	0.24	0.24
Queue Length 95th (ft)	19	19	0	0
Control Delay (s)	13.0	13.0	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	13.0		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	406	180	200	792	0	0	0	0	164	504	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.95		1.00	0.95						0.95	
Frpb, ped/bikes		0.98		1.00	1.00						0.98	
Flpb, ped/bikes		1.00		0.99	1.00						1.00	
Frt		0.95		1.00	1.00						0.95	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3184		1759	3539						3218	
Flt Permitted		1.00		0.36	1.00						0.99	
Satd. Flow (perm)		3184		667	3539						3218	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	427	189	211	834	0	0	0	0	173	531	332
RTOR Reduction (vph)	0	59	0	0	0	0	0	0	0	0	46	0
Lane Group Flow (vph)	0	557	0	211	834	0	0	0	0	0	990	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			75			75						50
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		2			6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		38.0		38.0	38.0						37.0	
Effective Green, g (s)		38.0		38.0	38.0						37.0	
Actuated g/C Ratio		0.45		0.45	0.45						0.44	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		1423		298	1582						1400	
v/s Ratio Prot		0.17			0.24							
v/s Ratio Perm				c0.32							0.31	
v/c Ratio		0.39		0.71	0.53						0.71	
Uniform Delay, d1		15.7		19.0	17.0						19.6	
Progression Factor		1.00		0.40	0.36						1.00	
Incremental Delay, d2		0.8		6.0	0.3						3.0	
Delay (s)		16.6		13.7	6.4						22.6	
Level of Service		B		B	A						C	
Approach Delay (s)		16.6			7.9			0.0			22.6	
Approach LOS		B			A			A			C	

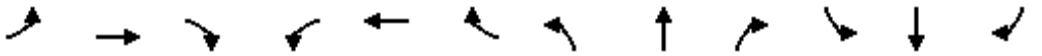
Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	182	24	8	0	0	0	0	0	42	579	17
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	192	25	8	0	0	0	0	0	44	609	18
Pedestrians								1				
Lane Width (ft)								0.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											655	
pX, platoon unblocked												
vC, conflicting volume	707	707	315	515	716	0	627			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	707	707	315	515	716	0	627			0		
tC, single (s)	7.7	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	100	46	96	96	100	100	100			97		
cM capacity (veh/h)	305	353	687	234	349	1091	964			1636		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	217	8	349	323
Volume Left	0	8	44	0
Volume Right	25	0	0	18
cSH	374	234	1636	1700
Volume to Capacity	0.58	0.04	0.03	0.19
Queue Length 95th (ft)	88	3	2	0
Control Delay (s)	27.1	21.0	1.1	0.0
Lane LOS	D	C	A	
Approach Delay (s)	27.1	21.0	0.6	
Approach LOS	D	C		

Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	35.6%	ICU Level of Service	A	
Analysis Period (min)	15			

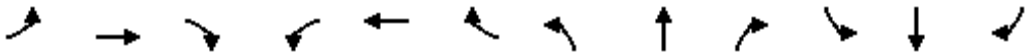


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	37	0	0	178	159	86	212	173	86	0	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91		1.00		0.88
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Frt	1.00	1.00			0.93		1.00	0.93		1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)	1624	3471			3078		1441	2987		1543		2682
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)	1624	3471			3078		1441	2987		1543		2682
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	39	0	0	187	167	91	223	182	91	0	266
RTOR Reduction (vph)	0	0	0	0	139	0	0	124	0	0	0	240
Lane Group Flow (vph)	22	39	0	0	215	0	82	290	0	91	0	26
Confl. Peds. (#/hr)	6					6						
Confl. Bikes (#/hr)			6			3						
Heavy Vehicles (%)	0%	4%	0%	0%	9%	7%	14%	7%	9%	17%	0%	6%
Parking (#/hr)	0											
Turn Type	Split	NA			NA		Split	NA		Prot		custom
Protected Phases	4	4			8		2	2		6		6
Permitted Phases												
Actuated Green, G (s)	3.6	3.6			8.9		16.4	16.4		5.1		5.1
Effective Green, g (s)	3.6	3.6			8.9		16.4	16.4		5.1		5.1
Actuated g/C Ratio	0.07	0.07			0.17		0.31	0.31		0.10		0.10
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)	110	235			516		445	924		148		258
v/s Ratio Prot	c0.01	0.01			c0.07		0.06	c0.10		c0.06		0.01
v/s Ratio Perm												
v/c Ratio	0.20	0.17			0.42		0.18	0.31		0.61		0.10
Uniform Delay, d1	23.3	23.3			19.7		13.4	14.0		23.0		21.9
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00		1.00
Incremental Delay, d2	0.9	0.3			0.5		0.9	0.9		7.4		0.2
Delay (s)	24.2	23.6			20.3		14.3	14.9		30.4		22.0
Level of Service	C	C			C		B	B		C		C
Approach Delay (s)		23.8			20.3			14.8			24.2	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	36	1	19	36	90	0	11	31	78	15	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	794	1357	3471	1328		2621		1703	2356	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	794	1357	3471	1328		2621		1703	2356	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	38	1	20	38	95	0	12	33	82	16	1
RTOR Reduction (vph)	0	0	1	0	0	58	0	23	0	0	1	0
Lane Group Flow (vph)	14	38	0	20	38	37	0	22	0	82	16	0
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			4			2						3
Heavy Vehicles (%)	0%	0%	100%	33%	4%	20%	0%	38%	17%	6%	55%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	4.0	39.0	39.0	4.0	39.0	39.0		30.0		7.0	33.0	
Effective Green, g (s)	4.0	39.0	39.0	4.0	39.0	39.0		30.0		7.0	33.0	
Actuated g/C Ratio	0.04	0.39	0.39	0.04	0.39	0.39		0.30		0.07	0.33	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Lane Grp Cap (vph)	72	1407	309	54	1353	517		786		119	777	
v/s Ratio Prot	0.01	0.01		c0.01	0.01			c0.01		c0.05	c0.01	
v/s Ratio Perm			0.00			c0.03						
v/c Ratio	0.19	0.03	0.00	0.37	0.03	0.07		0.03		0.69	0.02	
Uniform Delay, d1	46.4	18.8	18.6	46.8	18.8	19.1		24.7		45.4	22.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	5.9	0.0	0.0	18.4	0.0	0.3		0.1		27.9	0.0	
Delay (s)	52.4	18.8	18.6	65.2	18.8	19.4		24.8		73.4	22.7	
Level of Service	D	B	B	E	B	B		C		E	C	
Approach Delay (s)		27.7			25.3			24.8			64.7	
Approach LOS		C			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	617	32	76	851	81	59	165	59	101	217	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	0.99		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3430		1805	3414		1805	1801		1770	1699	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3430		1805	3414		1805	1801		1770	1699	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	89	623	32	77	860	82	60	167	60	102	219	135
RTOR Reduction (vph)	0	4	0	0	8	0	0	13	0	0	22	0
Lane Group Flow (vph)	89	651	0	77	934	0	60	214	0	102	332	0
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			75			75			20			20
Heavy Vehicles (%)	0%	4%	0%	0%	3%	0%	0%	0%	0%	2%	4%	0%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.4	31.8		4.0	30.4		3.8	33.4		4.0	33.6	
Effective Green, g (s)	5.4	31.8		4.0	30.4		3.8	33.4		4.0	33.6	
Actuated g/C Ratio	0.06	0.35		0.04	0.33		0.04	0.37		0.04	0.37	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	106	1195		79	1138		75	659		77	625	
v/s Ratio Prot	c0.05	0.19		0.04	c0.27		0.03	0.12		c0.06	c0.20	
v/s Ratio Perm												
v/c Ratio	0.84	0.54		0.97	0.82		0.80	0.32		1.32	0.53	
Uniform Delay, d1	42.5	23.9		43.5	27.9		43.3	20.8		43.6	22.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	41.2	0.5		92.0	4.9		43.9	1.3		211.9	3.2	
Delay (s)	83.7	24.4		135.6	32.8		87.2	22.1		255.5	25.8	
Level of Service	F	C		F	C		F	C		F	C	
Approach Delay (s)		31.5			40.5			35.7			77.2	
Approach LOS		C			D			D			E	

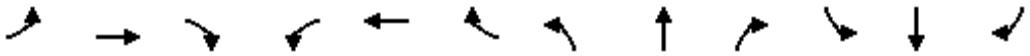
Intersection Summary			
HCM 2000 Control Delay	44.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	91.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	215	12	5	570	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	0	226	13	5	600	0	0	0	0
Pedestrians		3			3						2	
Lane Width (ft)		0.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								536				
pX, platoon unblocked												
vC, conflicting volume	441	617	3	614	617	305	3			603		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	441	617	3	614	617	305	3			603		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	44	98	100			100		
cM capacity (veh/h)	275	406	1086	368	406	695	1632			982		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	151	88	205	400
Volume Left	0	0	5	0
Volume Right	0	13	0	0
cSH	406	432	1632	1700
Volume to Capacity	0.37	0.20	0.00	0.24
Queue Length 95th (ft)	42	19	0	0
Control Delay (s)	19.0	15.5	0.2	0.0
Lane LOS	C	C	A	
Approach Delay (s)	17.7		0.1	
Approach LOS	C			

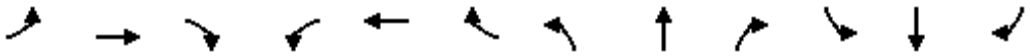
Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	34.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	214	355	0	0	836	108	158	353	178	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0				
Lane Util. Factor	1.00	0.95			0.95			0.95				
Frpb, ped/bikes	1.00	1.00			1.00			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.98			0.96				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1752	3374			3473			3361				
Flt Permitted	0.18	1.00			1.00			0.99				
Satd. Flow (perm)	332	3374			3473			3361				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	225	374	0	0	880	114	166	372	187	0	0	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	41	0	0	0	0
Lane Group Flow (vph)	225	374	0	0	982	0	0	684	0	0	0	0
Confl. Peds. (#/hr)	1					1			8			
Confl. Bikes (#/hr)			2			2			27			
Heavy Vehicles (%)	3%	7%	4%	2%	2%	2%	2%	1%	1%	2%	5%	3%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2						8					
Actuated Green, G (s)	38.0	38.0			38.0			37.0				
Effective Green, g (s)	38.0	38.0			38.0			37.0				
Actuated g/C Ratio	0.45	0.45			0.45			0.44				
Clearance Time (s)	5.0	5.0			5.0			5.0				
Vehicle Extension (s)	3.0	3.0			3.0			3.0				
Lane Grp Cap (vph)	148	1508			1552			1463				
v/s Ratio Prot		0.11			0.28							
v/s Ratio Perm	c0.68							0.20				
v/c Ratio	1.52	0.25			0.63			0.47				
Uniform Delay, d1	23.5	14.6			18.1			17.0				
Progression Factor	0.82	0.68			1.00			1.00				
Incremental Delay, d2	262.0	0.3			0.9			0.2				
Delay (s)	281.4	10.3			19.0			17.3				
Level of Service	F	B			B			B				
Approach Delay (s)		112.1			19.0			17.3			0.0	
Approach LOS		F			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	42.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	182	0	0	0	2	0	5	461	35	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	192	0	0	0	2	0	5	485	37	0	0	0
Pedestrians		9			13							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		1			1							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											608	
pX, platoon unblocked												
vC, conflicting volume	263	555	9	527	536	274	9			535		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	263	555	9	527	536	274	9			535		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	71	100	100	100	100	100	100			100		
cM capacity (veh/h)	650	433	1069	426	444	722	1612			1032		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	192	2	248	279
Volume Left	192	0	5	0
Volume Right	0	0	0	37
cSH	650	444	1612	1700
Volume to Capacity	0.29	0.00	0.00	0.16
Queue Length 95th (ft)	31	0	0	0
Control Delay (s)	12.8	13.1	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	12.8	13.1	0.1	
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	37.5%	ICU Level of Service	A	
Analysis Period (min)	15			

APPENDIX C: TRAFFIC SIGNAL WARRANT WORKSHEETS



FEHR PEERS

Sheet No 1 of 1

Project Gateway Park Connection
Scenario Existing Conditions
Peak Hour PM

Major Street W. Grand Ave
Minor Street Campbell St.

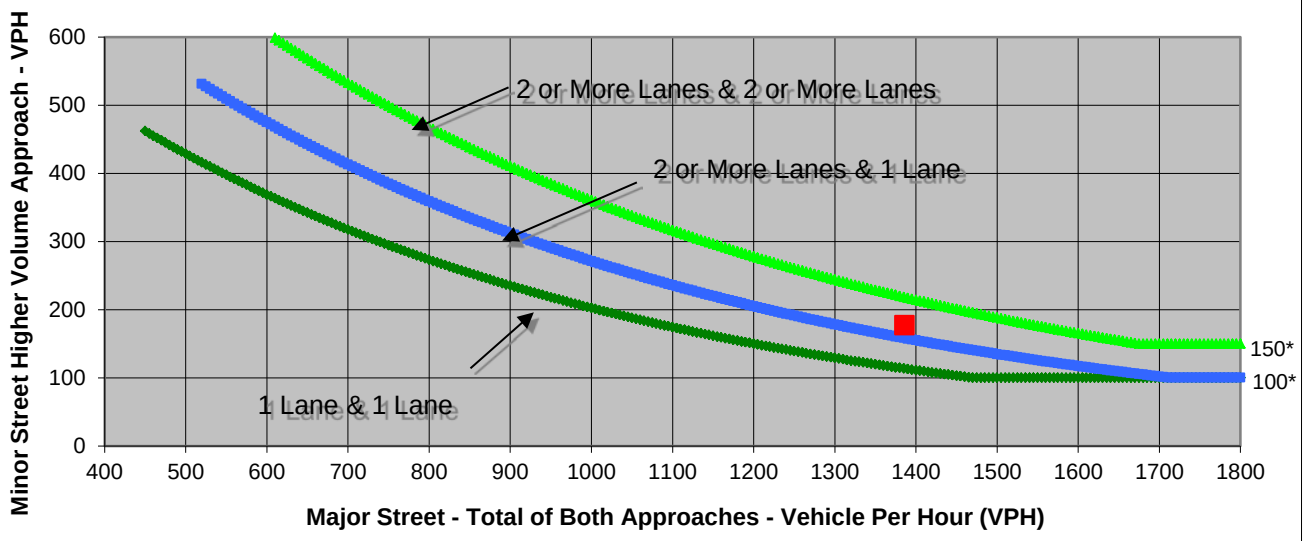
Turn Movement Volumes

	NB	SB	EB	WB
Left	32	2	76	18
Through	0	4	600	642
Right	13	171	40	10
Total	45	177	716	670

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	W. Grand Ave	Campbell St.	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,386**	**177**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing Conditions
Peak Hour PM

Major Street Mandela Parkway Southbound
Minor Street 24th Street

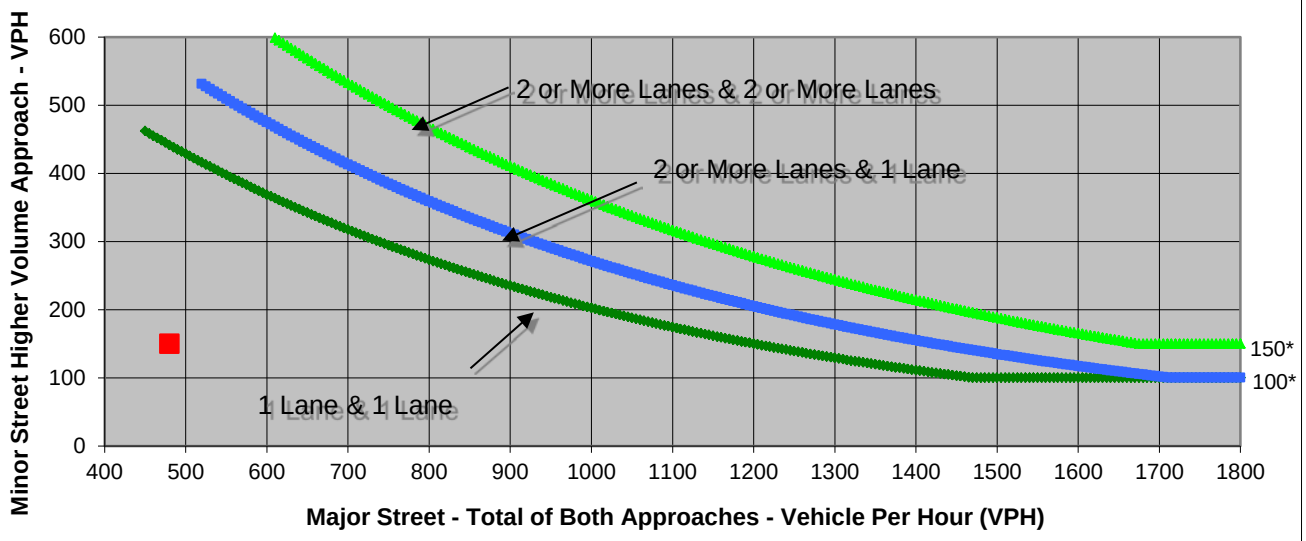
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	150	0
Through	0	480	0	0
Right	0	0	0	0
Total	0	480	150	0

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**480**	**150**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing Conditions
Peak Hour PM

Major Street Mandela Parkway Southbound
Minor Street 20th Street

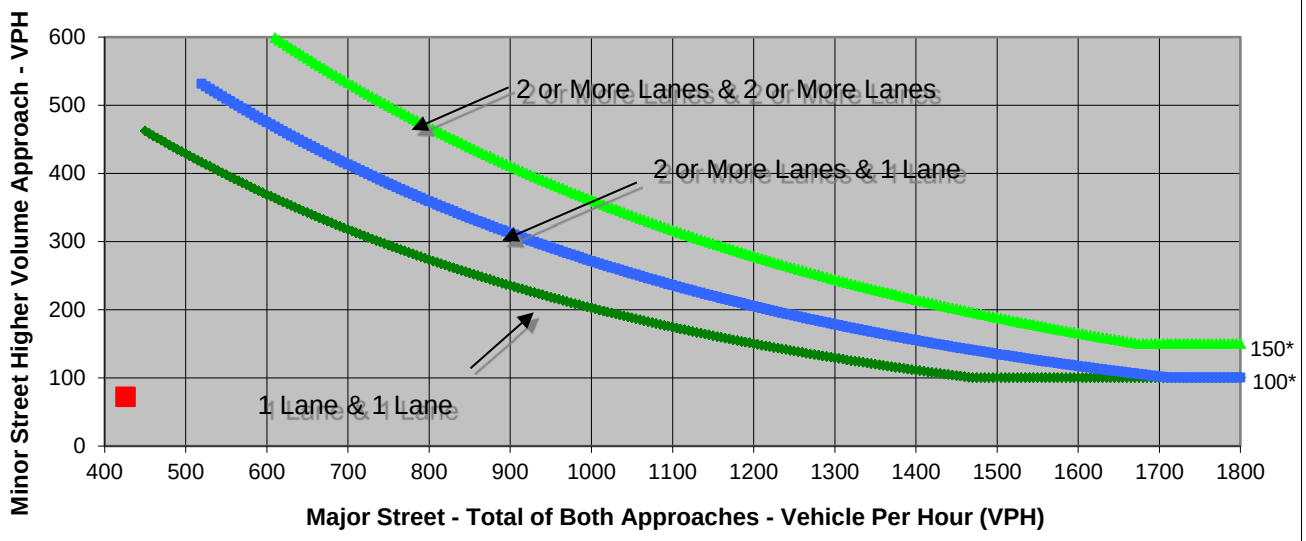
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	6	0	4
Through	0	418	65	1
Right	0	2	7	0
Total	0	426	72	5

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**426**	**72**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing Conditions
Peak Hour PM

Major Street Mandela Parkway
Minor Street 24th Street

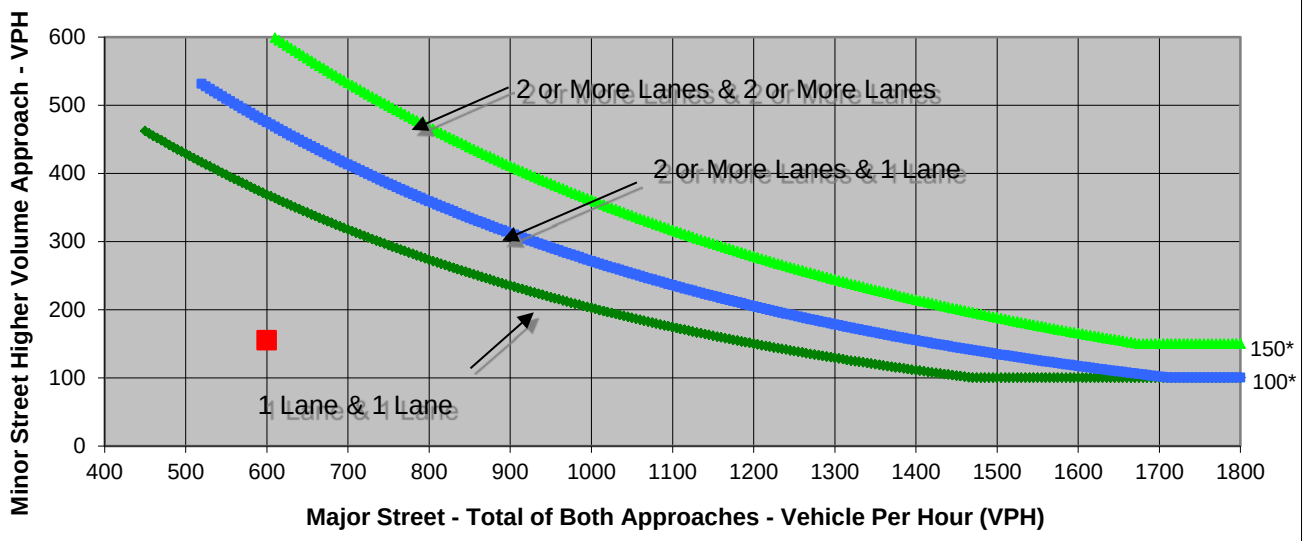
Turn Movement Volumes

	NB	SB	EB	WB
Left	4	0	0	0
Through	596	0	0	146
Right	0	0	0	9
Total	600	0	0	155

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**600**	**155**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing Conditions
Peak Hour PM

Major Street Mandela Parkway Northbound
Minor Street 20th Street

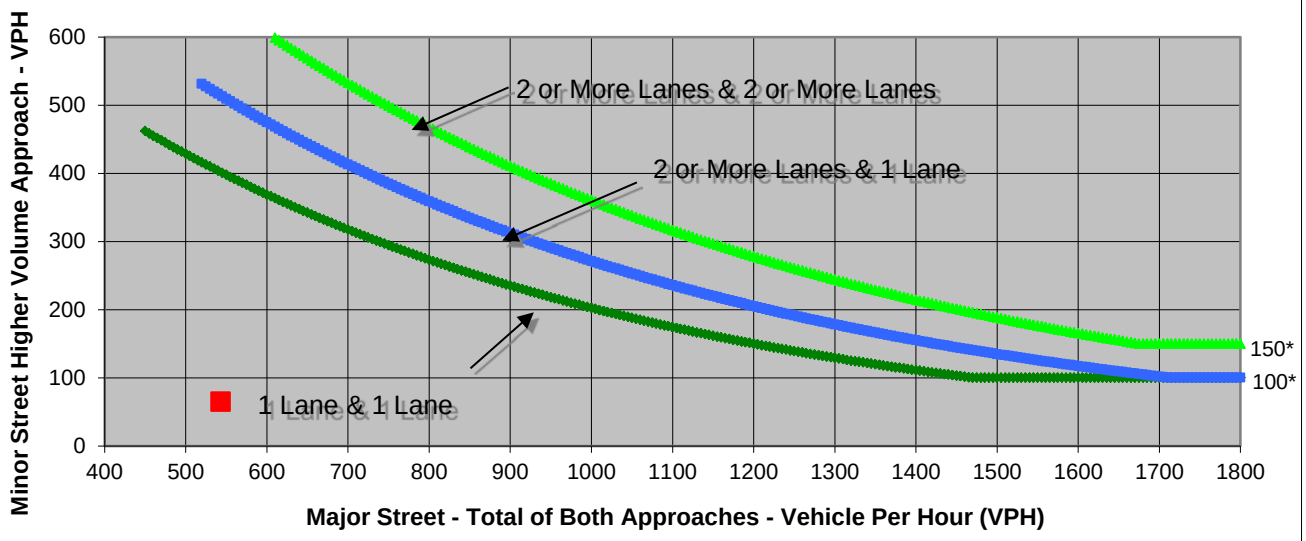
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	65	0
Through	536	0	0	1
Right	2	0	0	4
Total	543	0	65	5

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**543**	**65**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing Conditions
Peak Hour SAT

Major Street W. Grand Ave
Minor Street Campbell St.

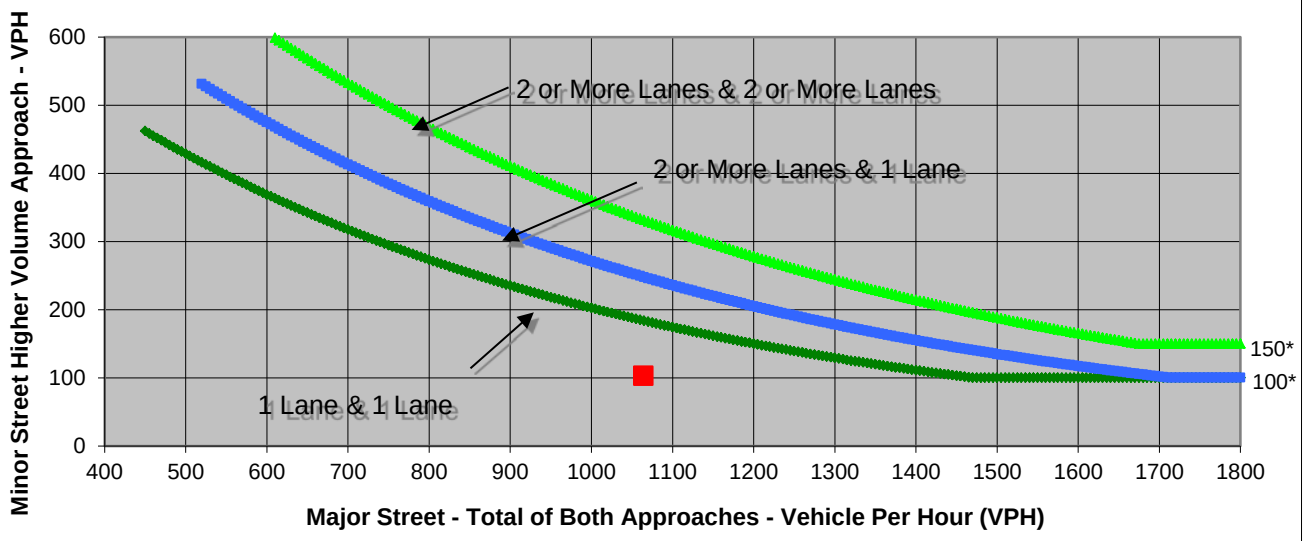
Turn Movement Volumes

	NB	SB	EB	WB
Left	43	3	23	18
Through	4	10	361	624
Right	23	90	33	5
Total	70	103	417	647

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	W. Grand Ave	Campbell St.	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,064**	**103**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing Conditions
Peak Hour SAT

Major Street Mandela Parkway Southbound
Minor Street 24th Street

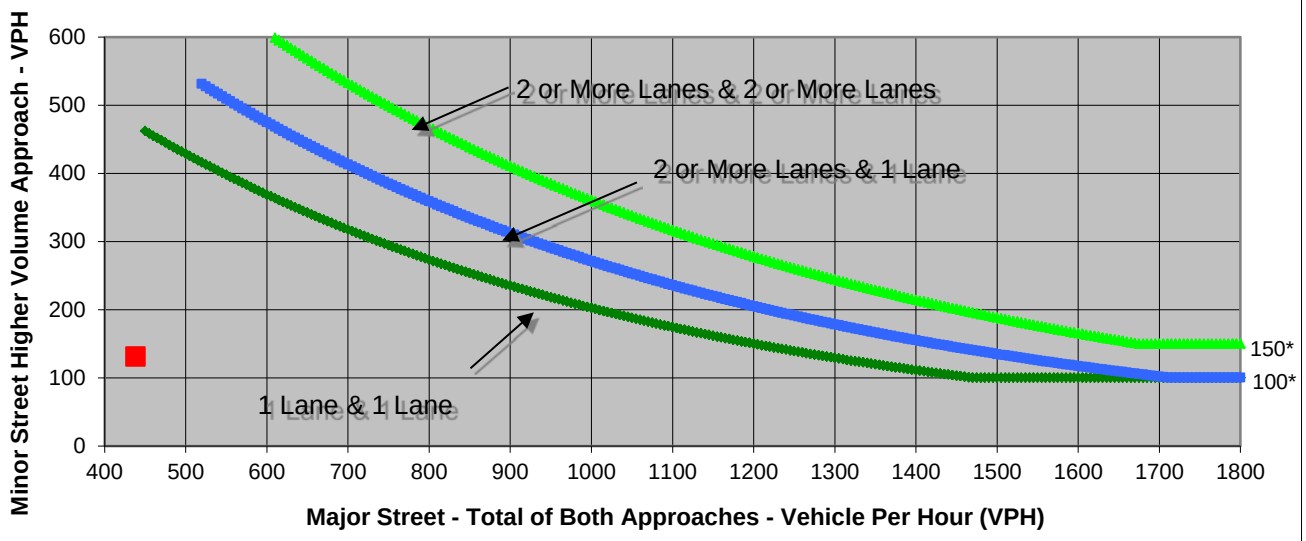
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	131	0
Through	0	438	0	0
Right	0	0	0	0
Total	0	438	131	0

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**438**	**131**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing Conditions
Peak Hour PM

Major Street Mandela Parkway Southbound
Minor Street 20th Street

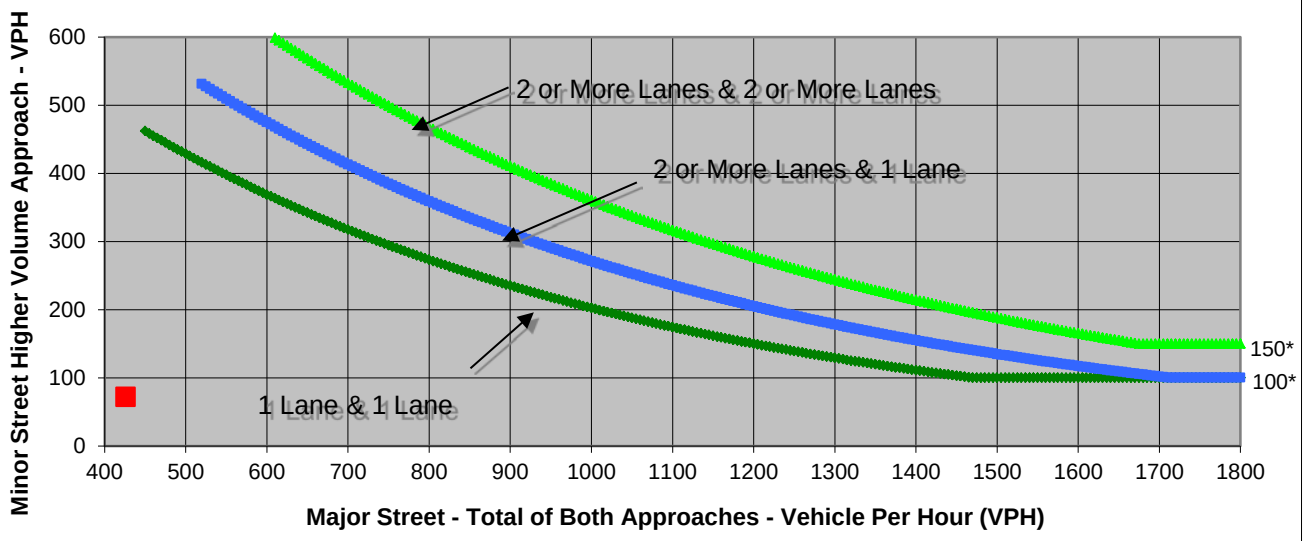
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	6	0	4
Through	0	418	65	1
Right	0	2	7	0
Total	0	426	72	5

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**426**	**72**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing Conditions
Peak Hour SAT

Major Street Mandela Parkway
Minor Street 24th Street

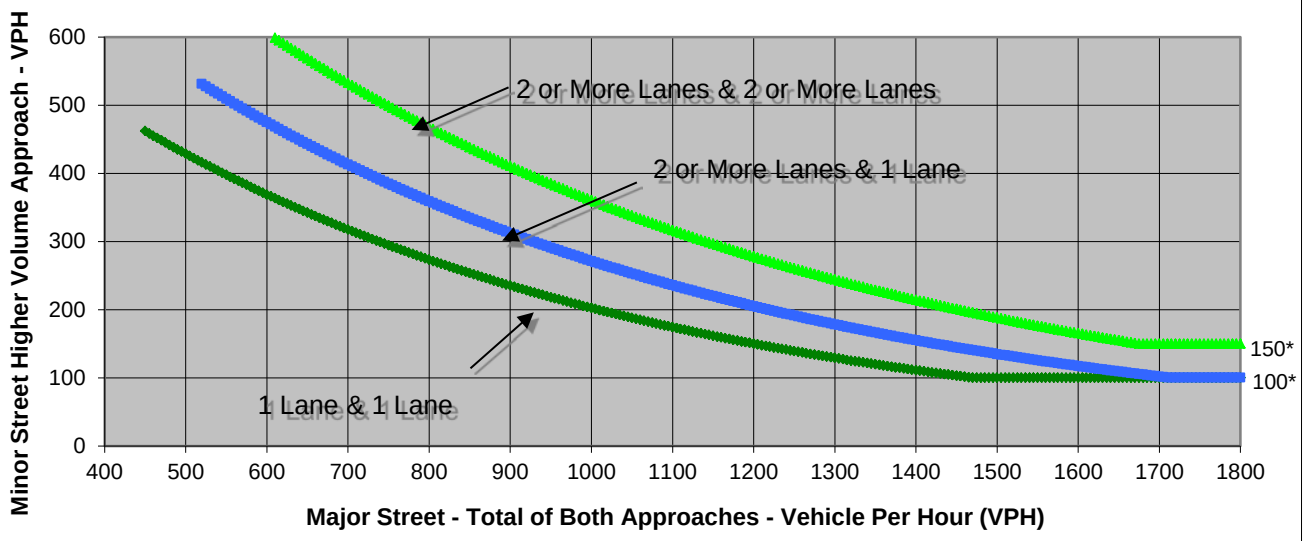
Turn Movement Volumes

	NB	SB	EB	WB
Left	3	0	0	0
Through	331	0	0	128
Right	0	0	0	7
Total	334	0	0	135

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**334**	**135**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing Conditions
Peak Hour SAT

Major Street Mandela Parkway Northbound
Minor Street 20th Street

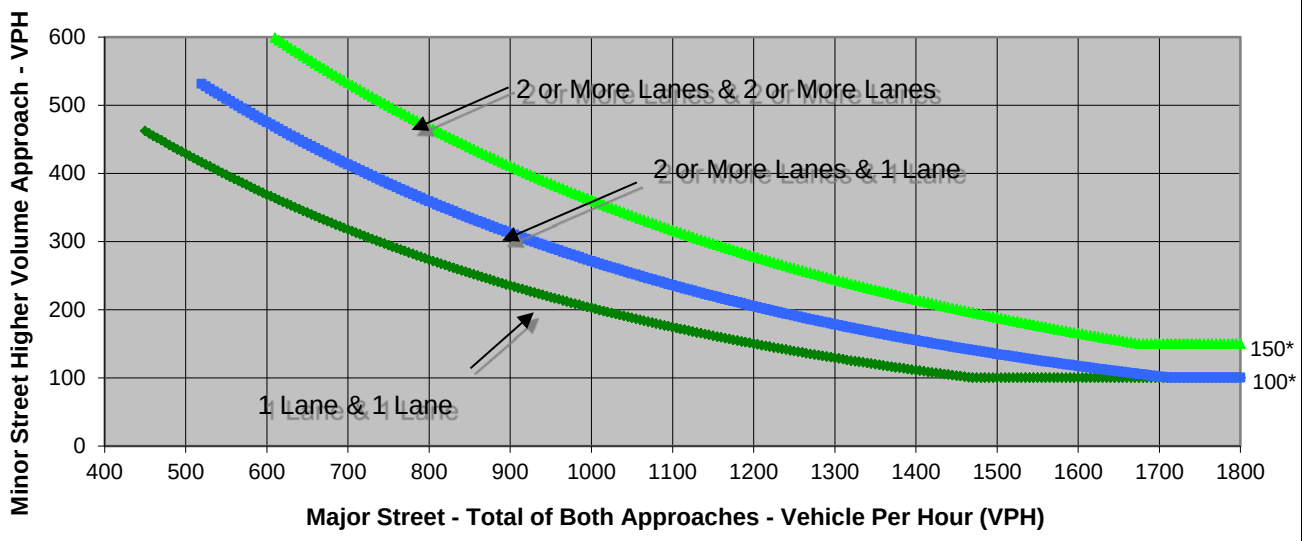
Turn Movement Volumes

	NB	SB	EB	WB
Left	3	0	58	0
Through	266	0	1	1
Right	21	0	0	9
Total	290	0	59	10

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**290**	**59**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing with Park Conditions
Peak Hour PM

Major Street W. Grand Ave
Minor Street Campbell St.

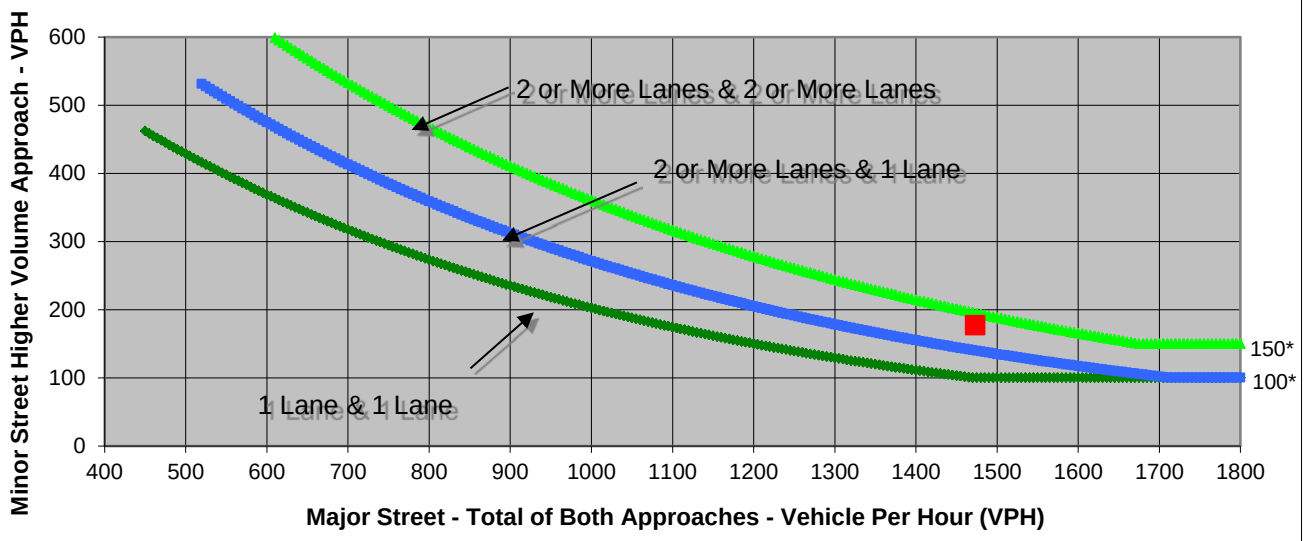
Turn Movement Volumes

	NB	SB	EB	WB
Left	32	2	66	18
Through	0	4	640	699
Right	13	171	40	10
Total	45	177	746	727

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	W. Grand Ave	Campbell St.	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,473**	**177**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing with Park Conditions
Peak Hour PM

Major Street Mandela Parkway Southbound
Minor Street 24th Street

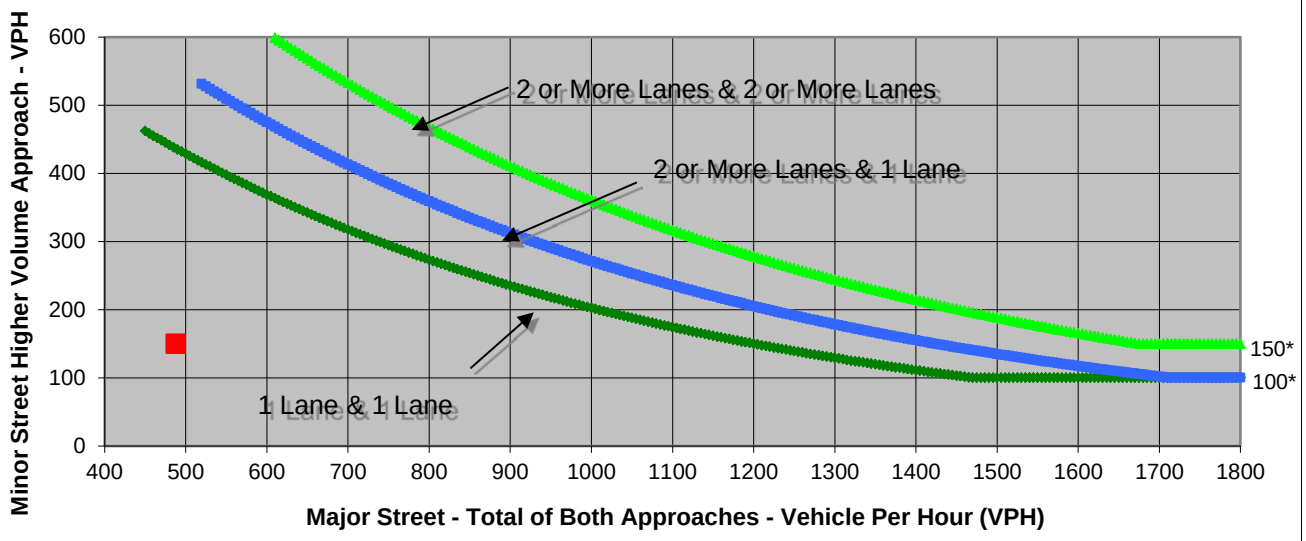
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	150	0
Through	0	488	0	0
Right	0	0	0	0
Total	0	488	150	0

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**488**	**150**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing with Park Conditions
Peak Hour PM

Major Street Mandela Parkway Southbound
Minor Street 20th Street

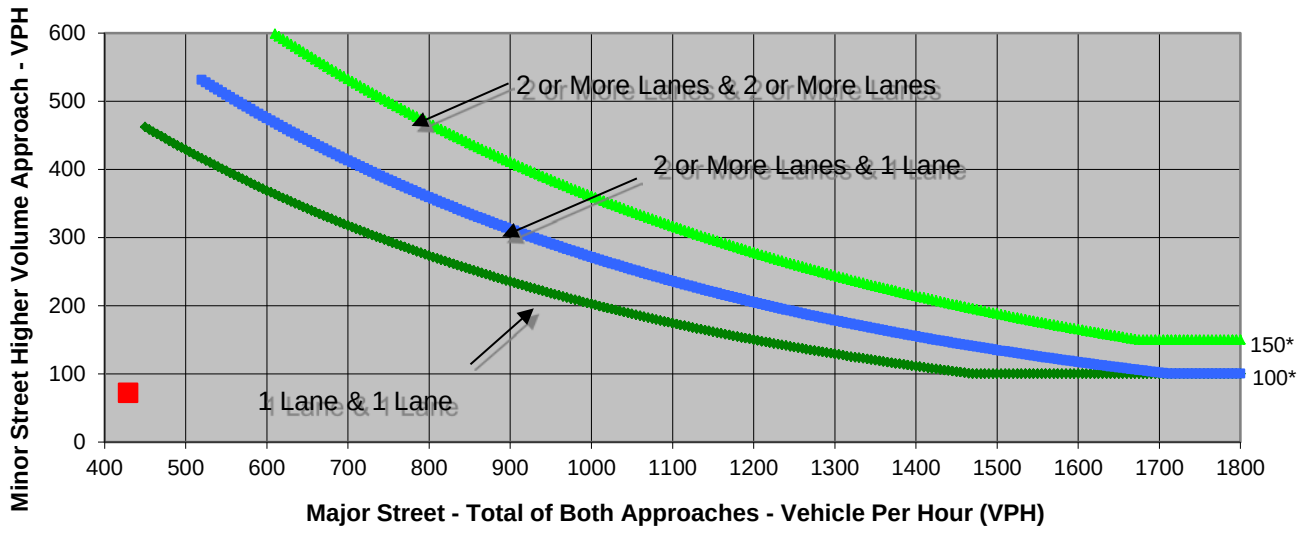
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	6	0	4
Through	0	421	65	1
Right	0	2	7	0
Total	0	429	72	5

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**429**	**72**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing with Park Conditions
Peak Hour PM

Major Street Mandela Parkway
Minor Street 24th Street

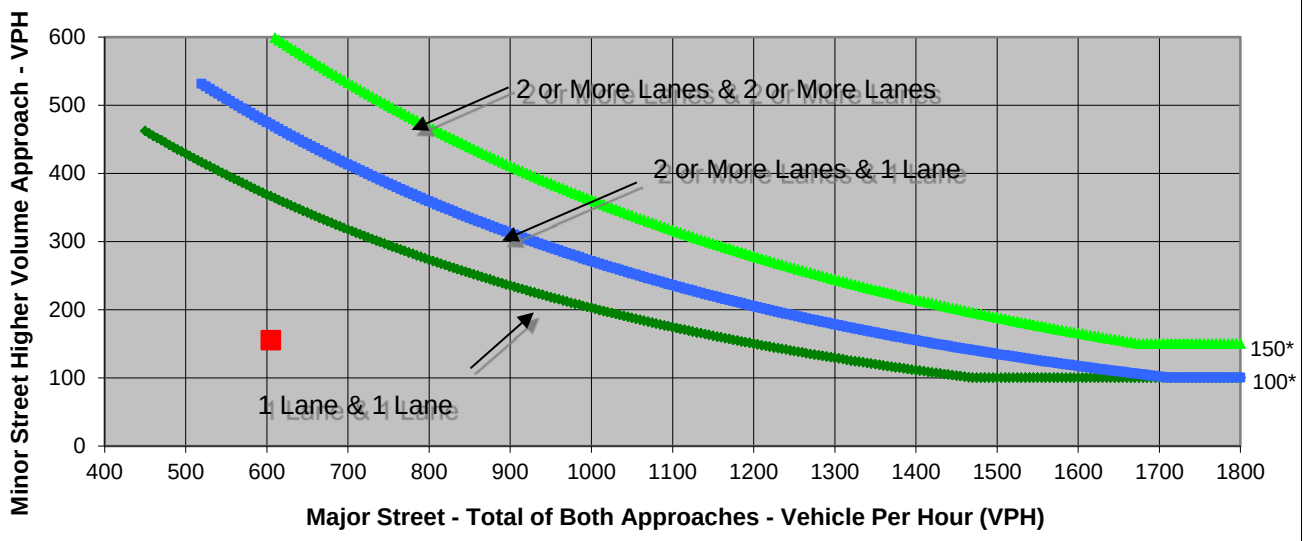
Turn Movement Volumes

	NB	SB	EB	WB
Left	4	0	0	0
Through	601	0	0	146
Right	0	0	0	9
Total	605	0	0	155

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**605**	**155**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing with Park Conditions
Peak Hour PM

Major Street Mandela Parkway Northbound
Minor Street 20th Street

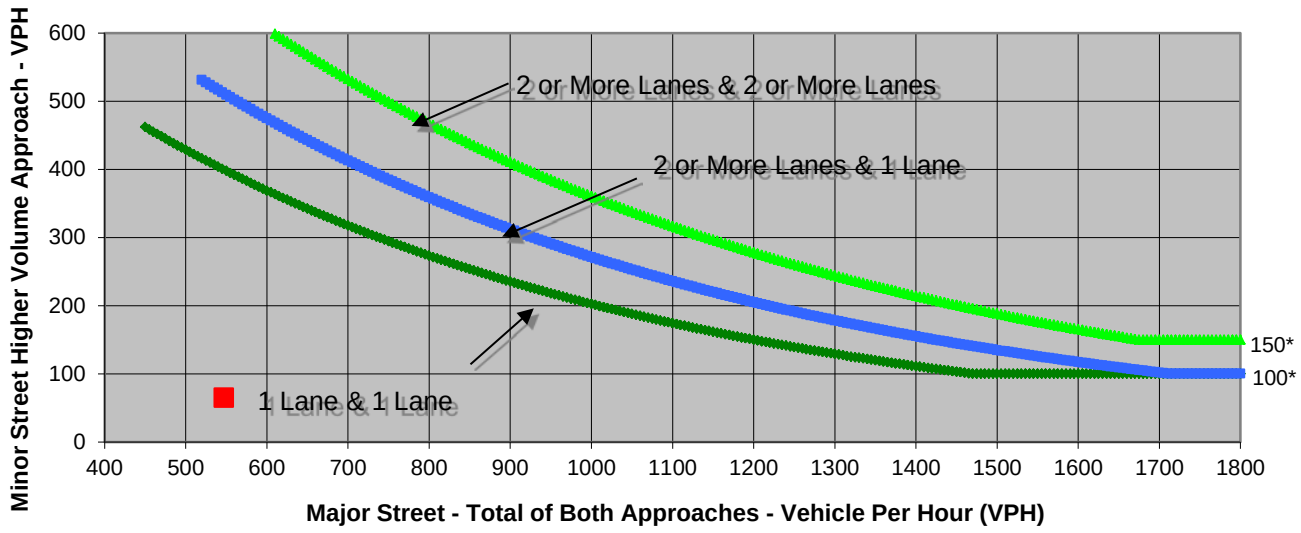
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	65	0
Through	540	0	0	1
Right	2	0	0	4
Total	547	0	65	5

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**547**	**65**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Existing with Park Conditions
Peak Hour SAT

Major Street W. Grand Ave
Minor Street Campbell St.

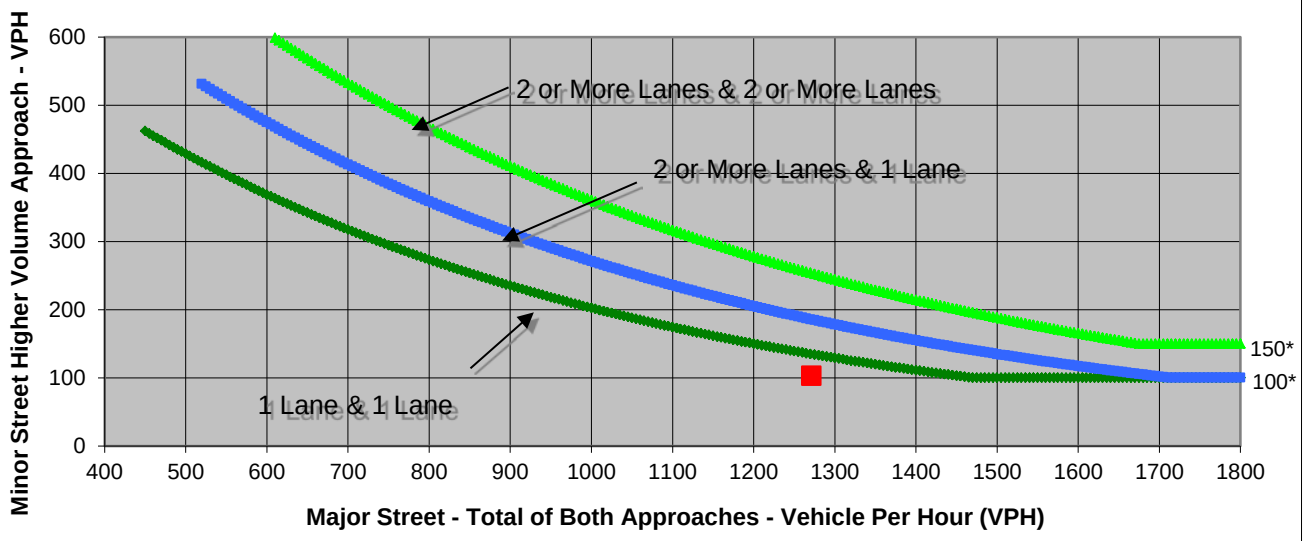
Turn Movement Volumes

	NB	SB	EB	WB
Left	43	3	23	18
Through	4	10	465	727
Right	23	90	33	5
Total	70	103	521	750

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	W. Grand Ave	Campbell St.	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,271**	**103**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park
Scenario Existing with Park Conditions
Peak Hour SAT

Major Street Mandela Parkway Southbound
Minor Street 24th Street

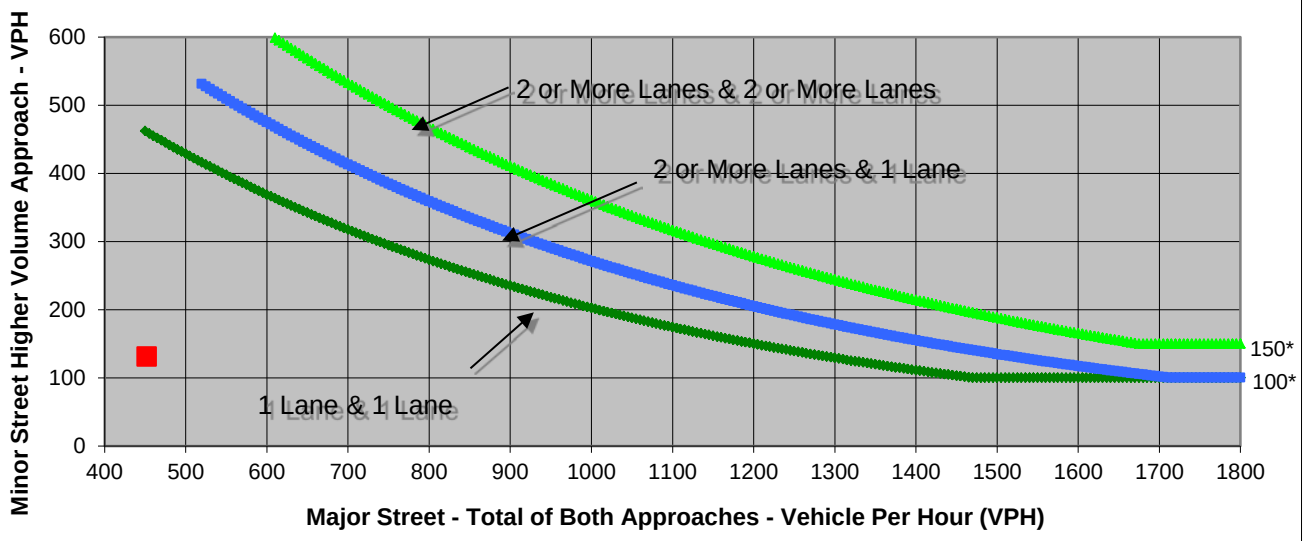
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	131	0
Through	0	452	0	0
Right	0	0	0	0
Total	0	452	131	0

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**452**	**131**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park
Scenario Existing with Park Conditions
Peak Hour SAT

Major Street Mandela Parkway Southbound
Minor Street 20th Street

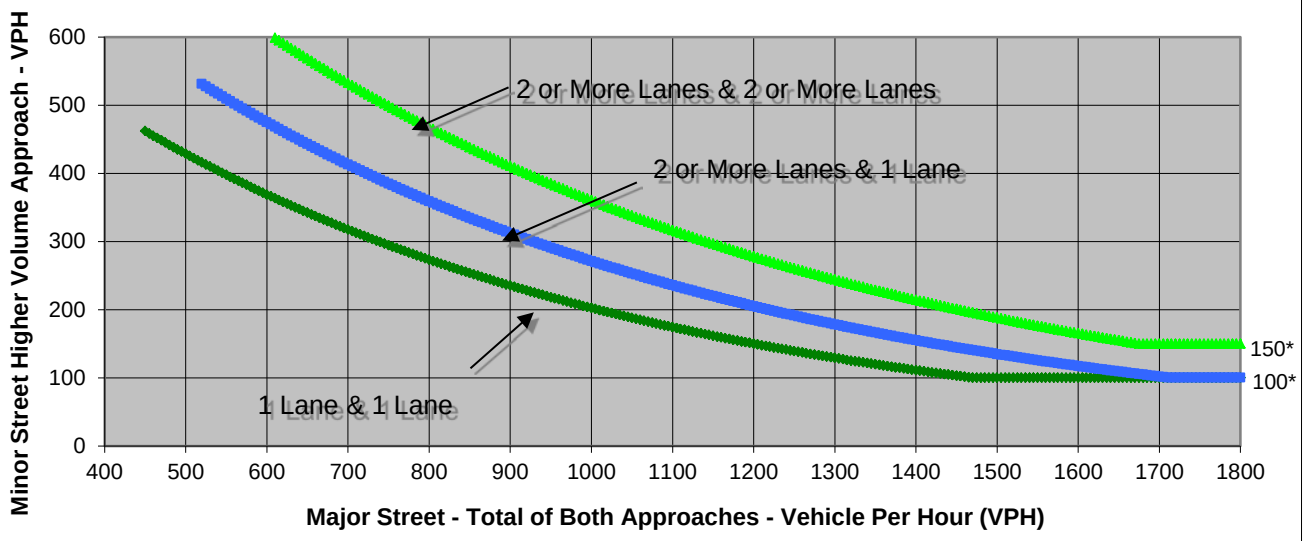
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	25	0	5
Through	0	343	59	0
Right	0	10	14	0
Total	0	378	73	5

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**378**	**73**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park
Scenario Existing with Park Conditions
Peak Hour SAT

Major Street Mandela Parkway
Minor Street 24th Street

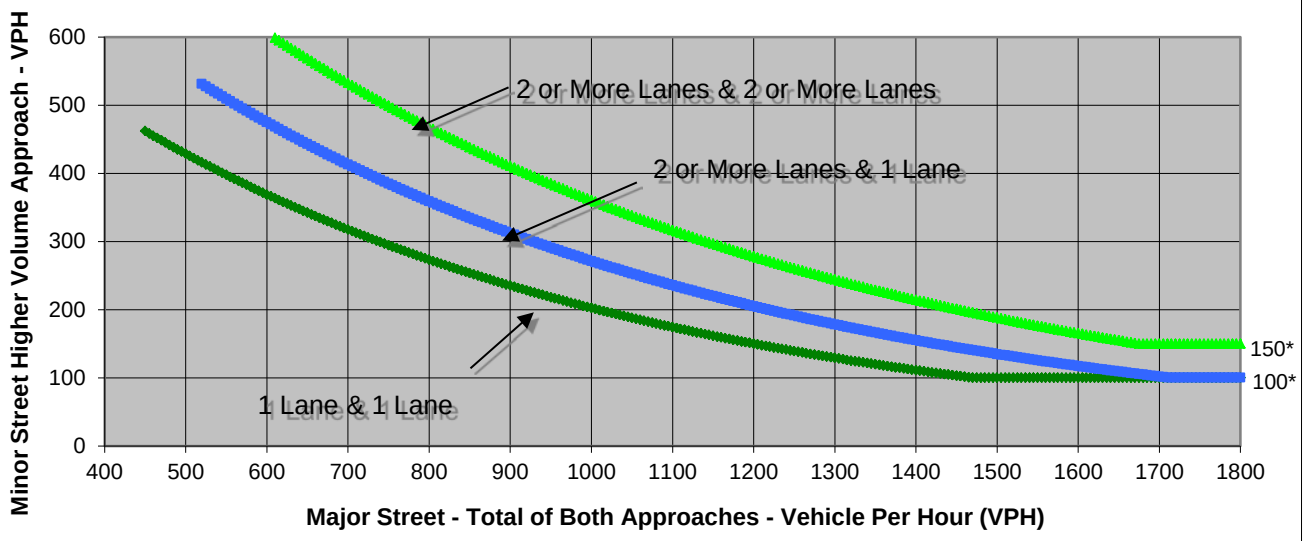
Turn Movement Volumes

	NB	SB	EB	WB
Left	3	0	0	0
Through	345	0	0	128
Right	0	0	0	7
Total	348	0	0	135

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**348**	**135**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park
Scenario Existing with Park Conditions
Peak Hour SAT

Major Street Mandela Parkway Northbound
Minor Street 20th Street

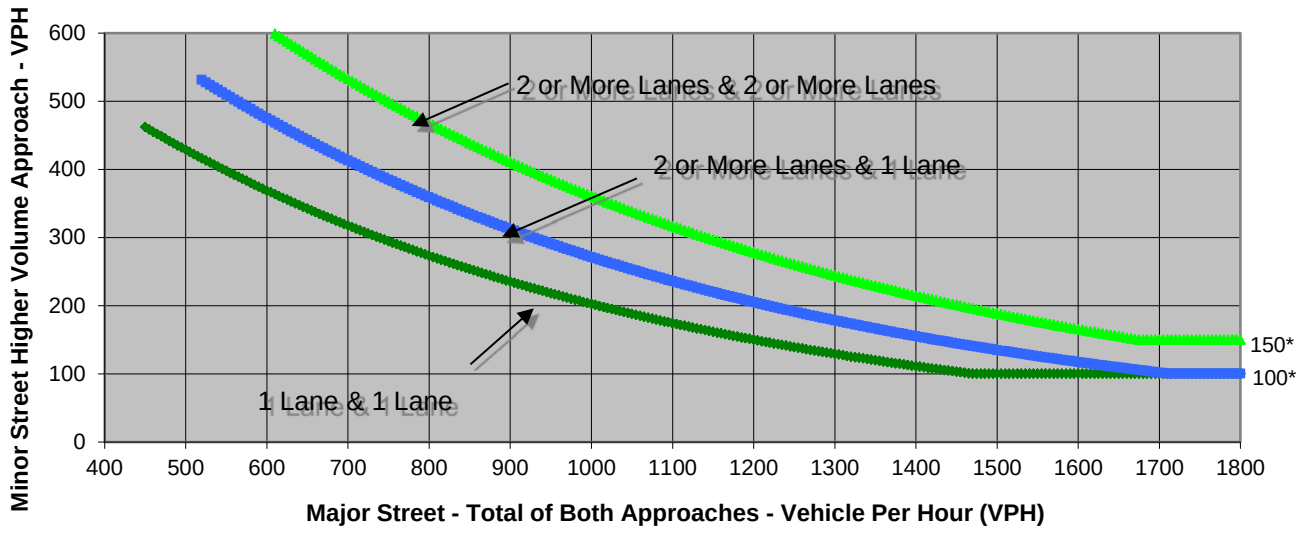
Turn Movement Volumes

	NB	SB	EB	WB
Left	3	0	58	0
Through	274	0	1	1
Right	21	0	0	9
Total	298	0	59	10

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**298**	**59**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park

Major Street W. Grand Ave
Minor Street Campbell St.

Scenario Near-Term Conditions
Peak Hour PM

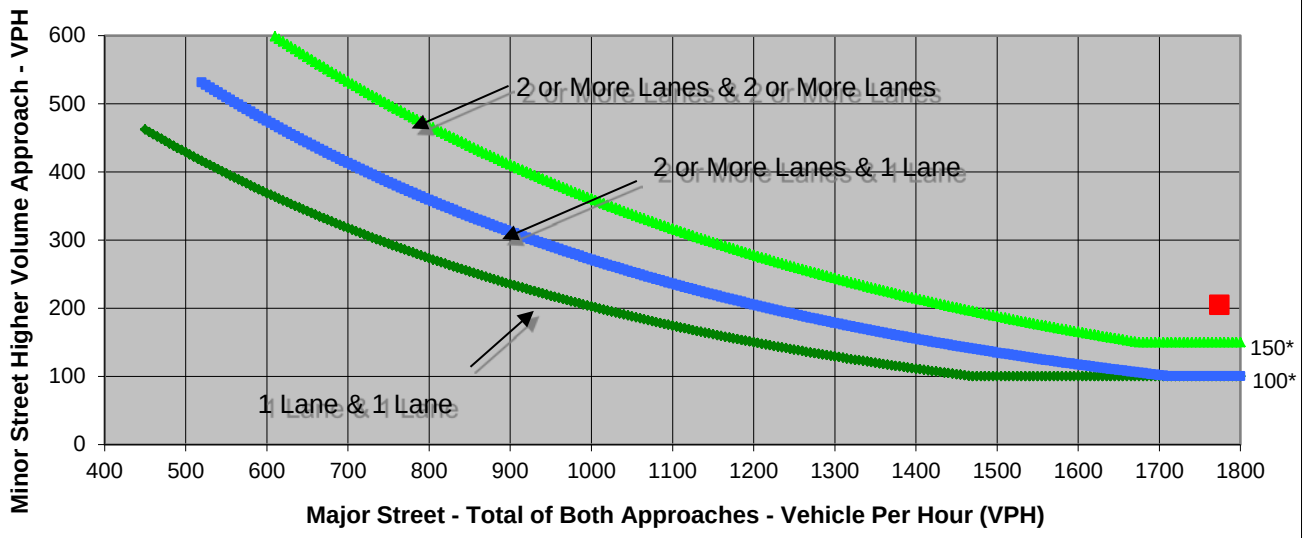
Turn Movement Volumes

	NB	SB	EB	WB
Left	41	3	97	23
Through	0	5	768	822
Right	17	197	51	13
Total	58	205	916	858

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street W. Grand Ave	Minor Street Campbell St.	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,774**	**205**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

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Project Gateway Regional Park

Major Street Mandela Parkway Southbound
Minor Street 24th Street

Scenario Near-Term Conditions
Peak Hour PM

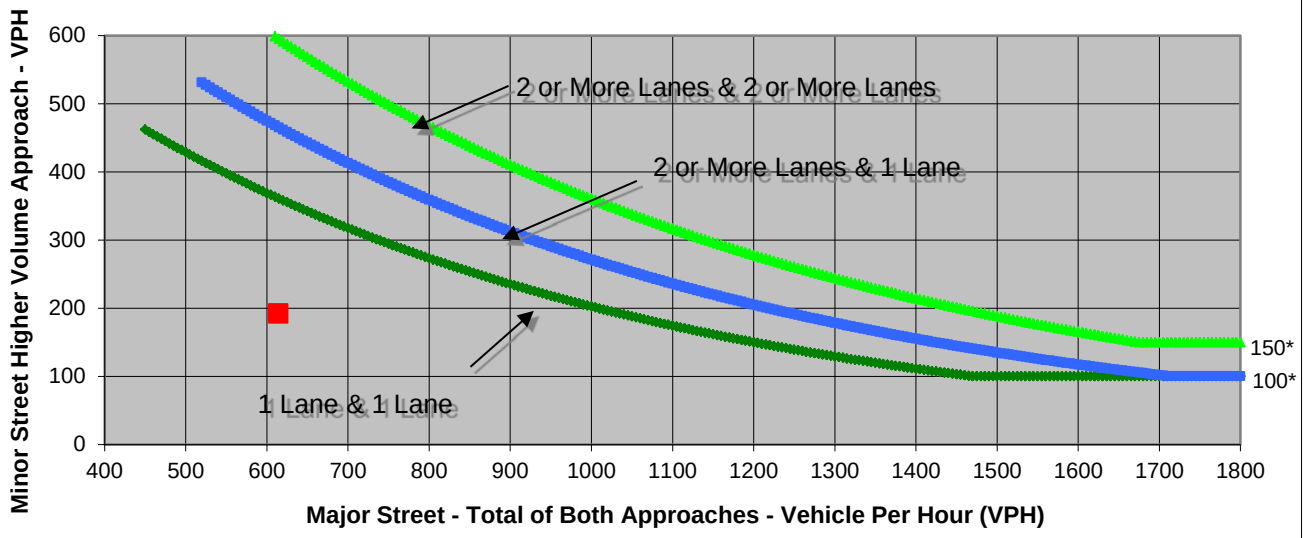
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	192	0
Through	0	614	0	0
Right	0	0	0	0
Total	0	614	192	0

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**614**	**192**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park
Scenario Near-Term Conditions
Peak Hour PM

Major Street Mandela Parkway Southbound
Minor Street 20th Street

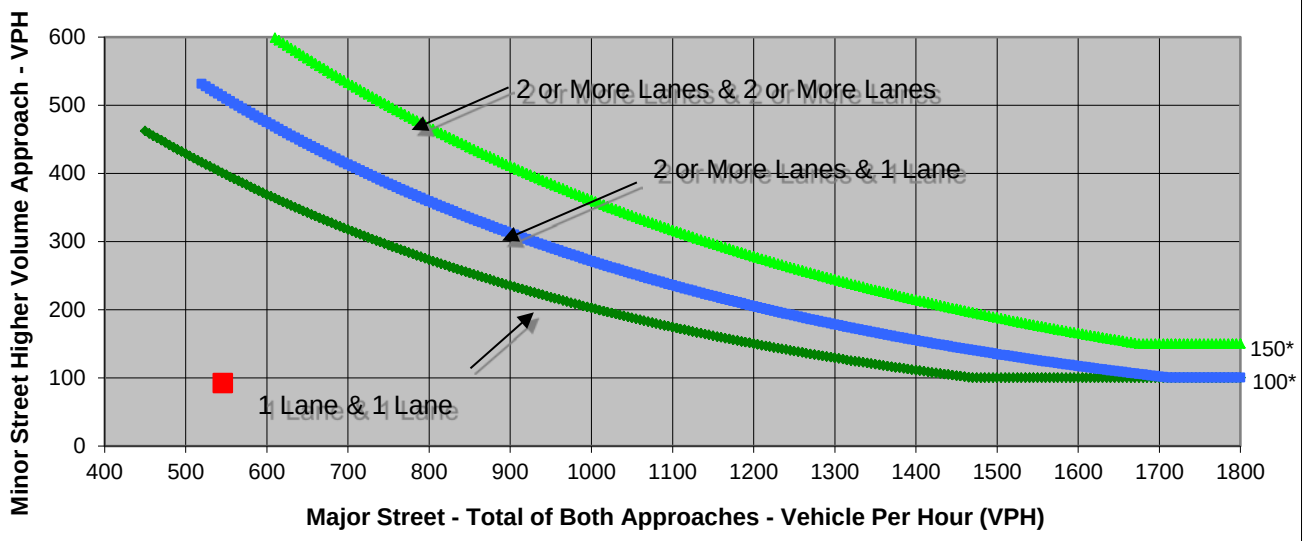
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	8	0	5
Through	0	535	83	1
Right	0	3	9	0
Total	0	546	92	6

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**546**	**92**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park
Scenario Near-Term Conditions
Peak Hour PM

Major Street Mandela Parkway
Minor Street 24th Street

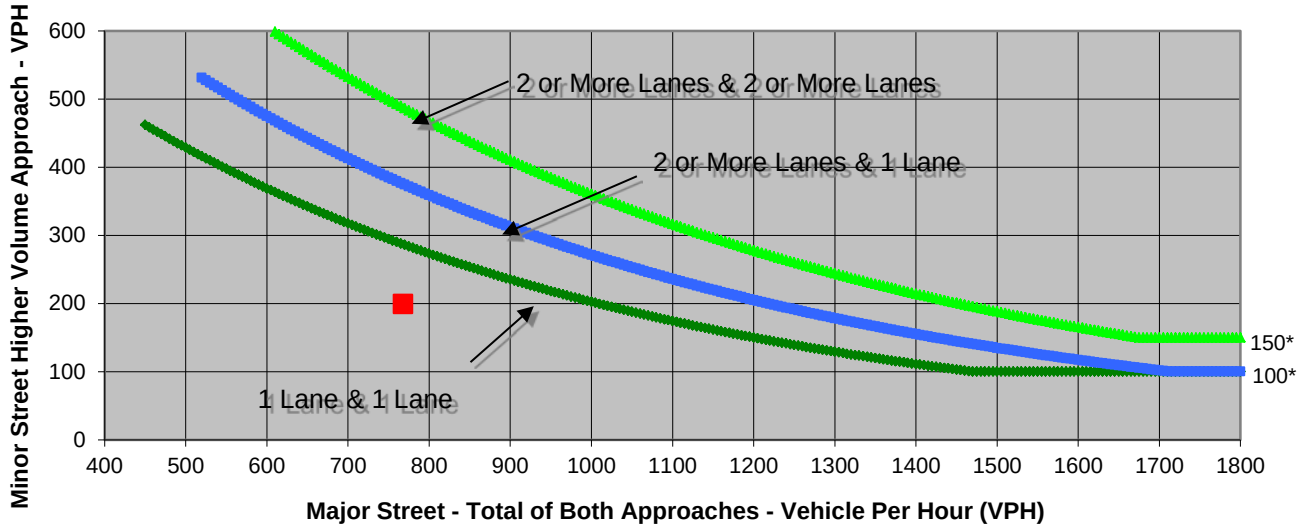
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	0	0
Through	763	0	0	187
Right	0	0	0	12
Total	768	0	0	199

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**768**	**199**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park
Scenario Near-Term Conditions
Peak Hour PM

Major Street Mandela Parkway Northbound
Minor Street 20th Street

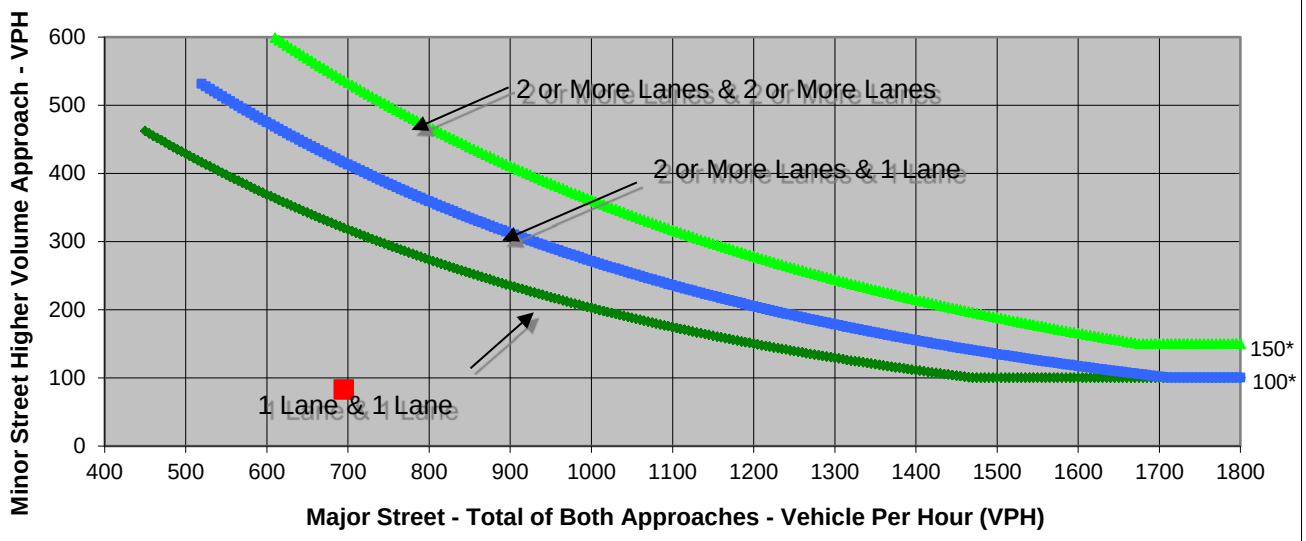
Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	83	0
Through	686	0	0	1
Right	3	0	0	5
Total	695	0	83	6

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**695**	**83**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park
Scenario Near-Term Conditions
Peak Hour SAT

Major Street W. Grand Ave
Minor Street Campbell St.

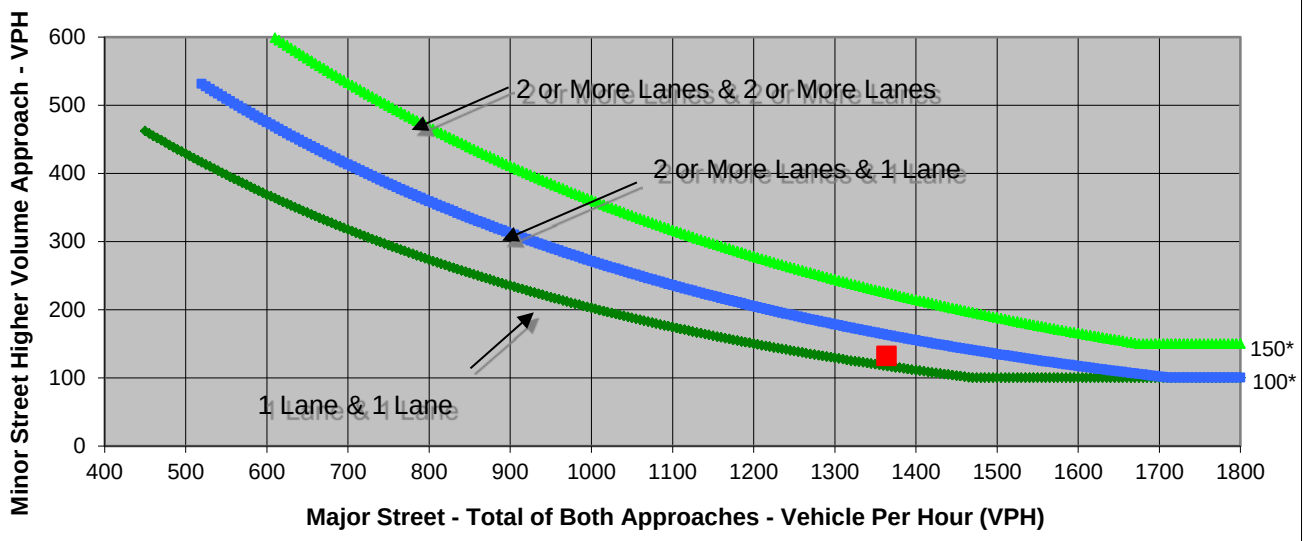
Turn Movement Volumes

	NB	SB	EB	WB
Left	55	4	32	23
Through	5	13	462	799
Right	29	115	42	6
Total	89	132	536	828

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	W. Grand Ave	Campbell St.	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,364**	**132**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park

Major Street Mandela Parkway Southbound
Minor Street 24th Street

Scenario Near-Term Conditions
Peak Hour SAT

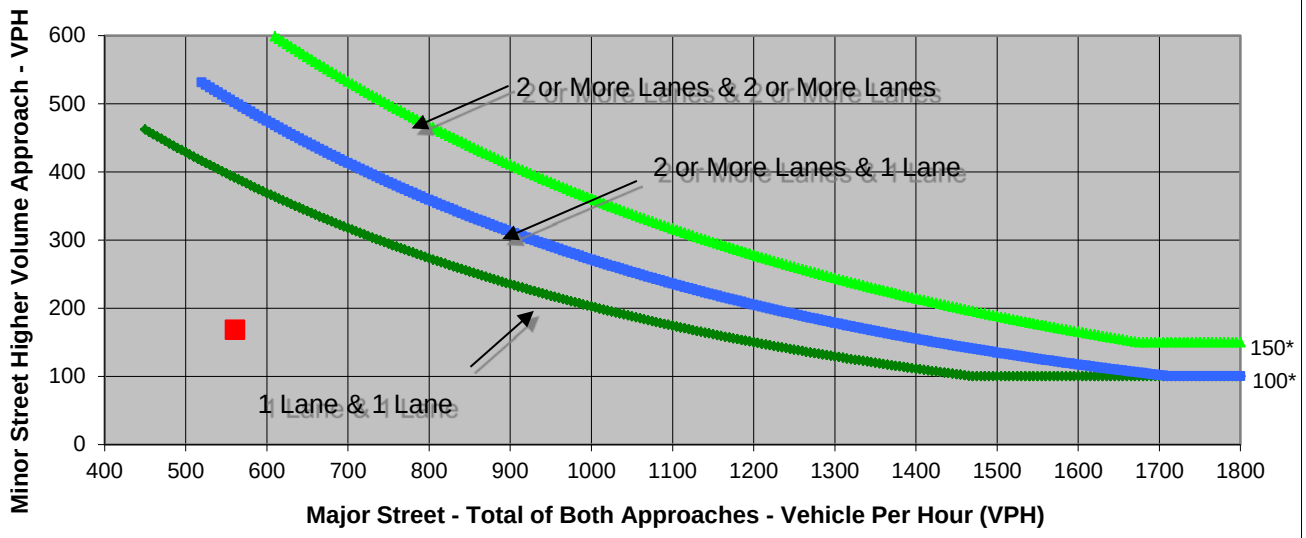
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	168	0
Through	0	561	0	0
Right	0	0	0	0
Total	0	561	168	0

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**561**	**168**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park
Scenario Near-Term Conditions
Peak Hour SAT

Major Street Mandela Parkway Southbound
Minor Street 20th Street

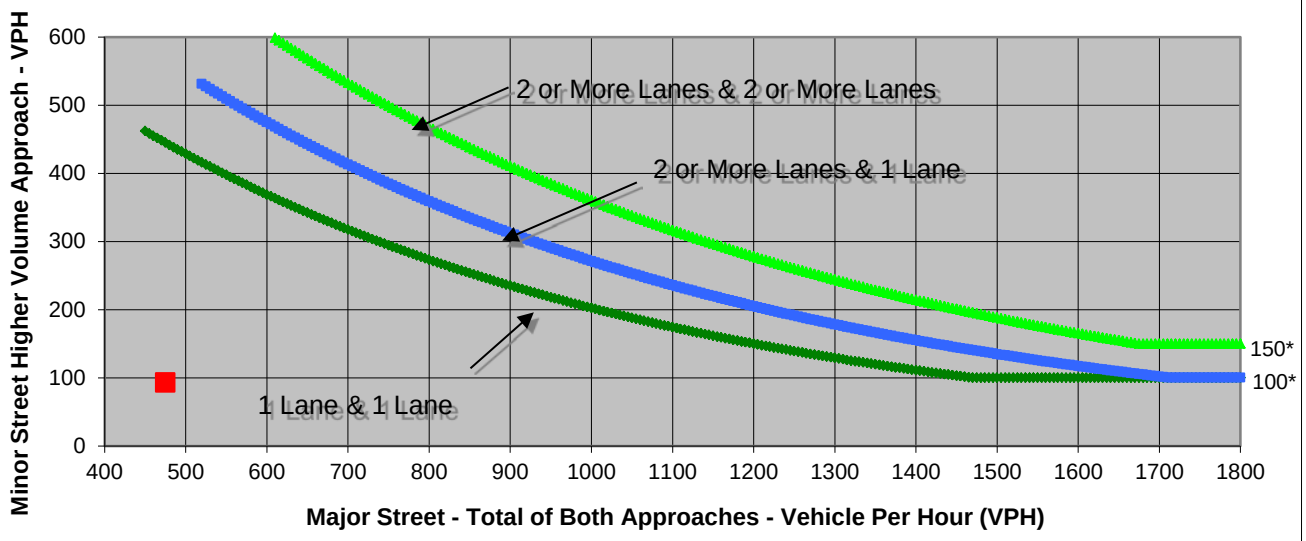
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	32	74	6
Through	0	430	1	0
Right	0	13	18	12
Total	0	475	93	18

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**475**	**93**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park
Scenario Near-Term Conditions
Peak Hour SAT

Major Street Mandela Parkway
Minor Street 24th Street

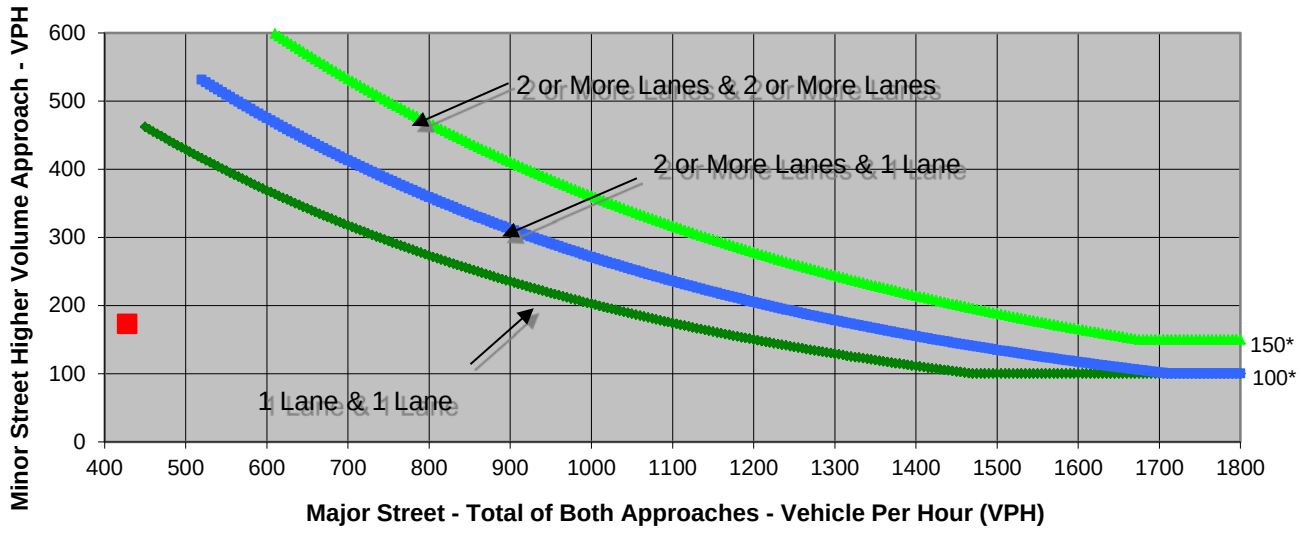
Turn Movement Volumes

	NB	SB	EB	WB
Left	4	0	0	0
Through	424	0	0	164
Right	0	0	0	9
Total	428	0	0	173

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**428**	**173**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park
Scenario Near-Term Conditions
Peak Hour SAT

Major Street Mandela Parkway Northbound
Minor Street 20th Street

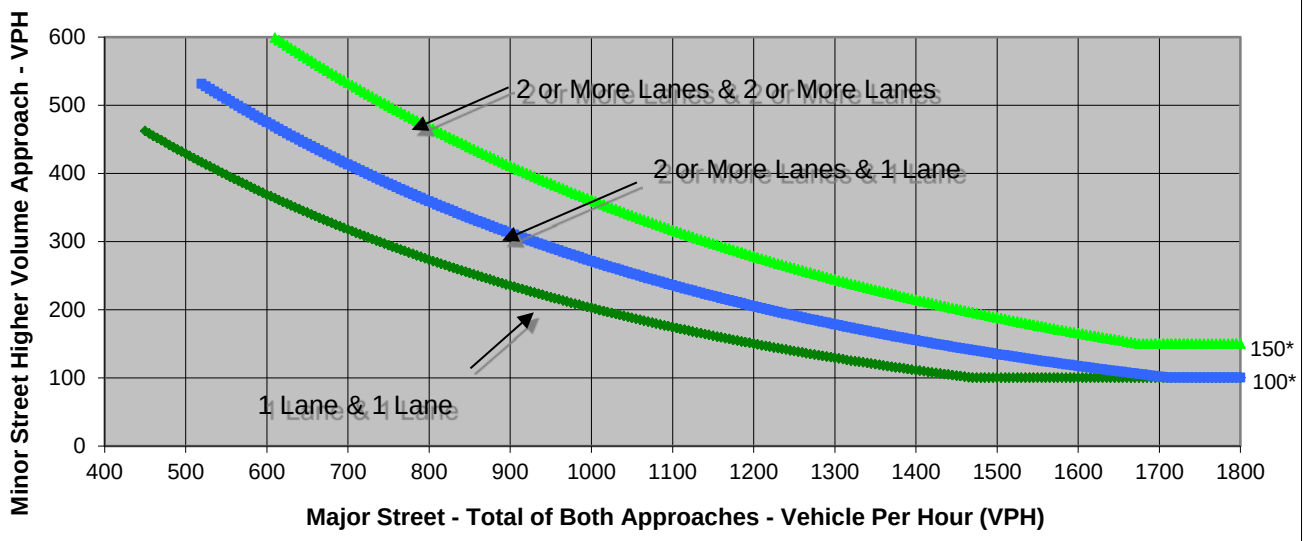
Turn Movement Volumes

	NB	SB	EB	WB
Left	4	0	76	0
Through	340	0	0	1
Right	27	0	0	0
Total	371	0	76	1

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**371**	**76**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project: Gateway Regional Park

Major Street: W. Grand Ave
Minor Street: Campbell St.

Scenario: Near-Term with Park Conditions
Peak Hour: PM

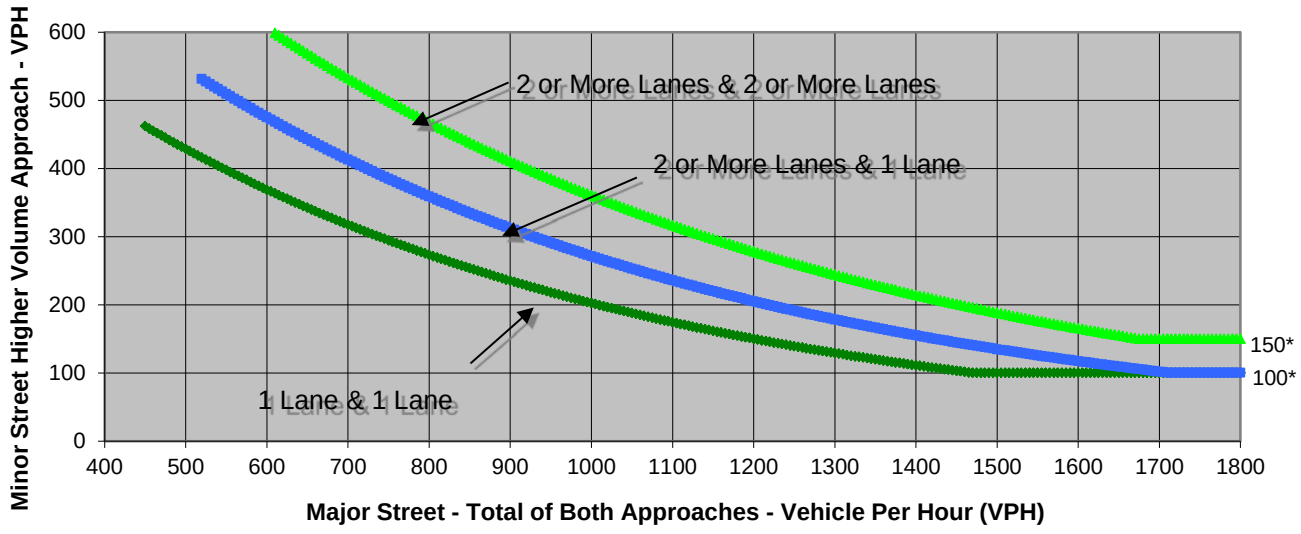
Turn Movement Volumes

	NB	SB	EB	WB
Left	41	3	87	23
Through	0	5	808	879
Right	17	197	51	13
Total	58	205	946	915

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street W. Grand Ave	Minor Street Campbell St.	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,861**	**205**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

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Project: Gateway Regional Park

Major Street: Mandela Parkway Southbound
Minor Street: 24th Street

Scenario: Near-Term with Park Conditions
Peak Hour: PM

Turn Movement Volumes

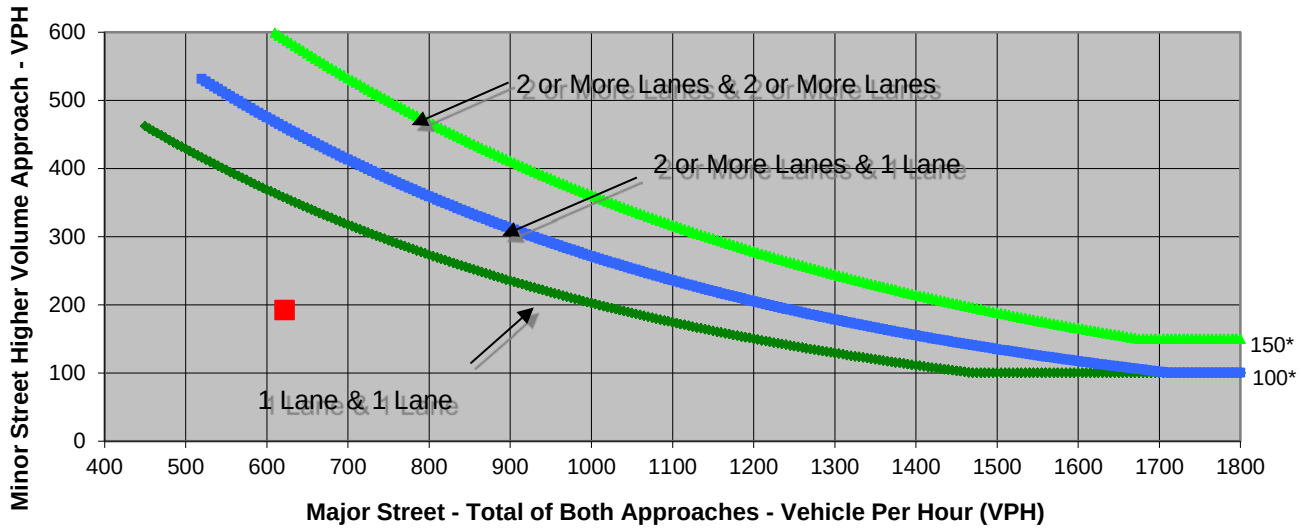
	NB	SB	EB	WB
Left	0	0	192	0
Through	0	622	0	0
Right	0	0	0	0
Total	0	622	192	0

Major Street Direction

x North/South

East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**622**	**192**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Near-Term with Park Conditions		
Peak Hour	PM		

Major Street	Mandela Parkway Southbound
Minor Street	20th Street

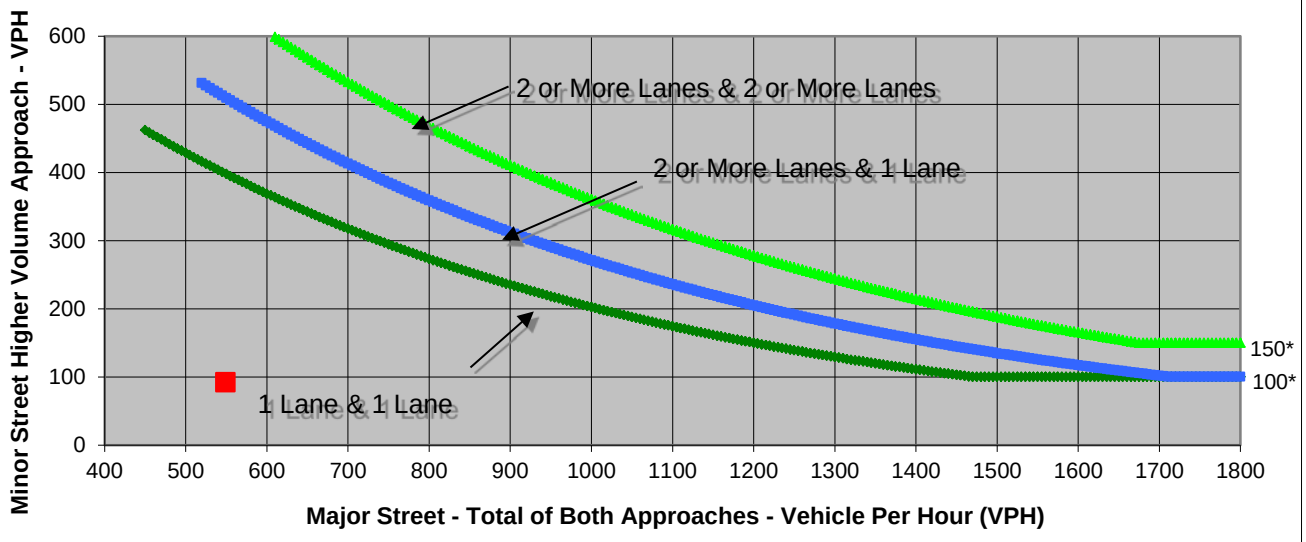
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	8	0	5
Through	0	538	83	1
Right	0	3	9	0
Total	0	549	92	6

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway Southbound	Minor Street 20th Street	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**549**	**92**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Near-Term with Park Conditions		
Peak Hour	PM		

Major Street	Mandela Parkway
Minor Street	24th Street

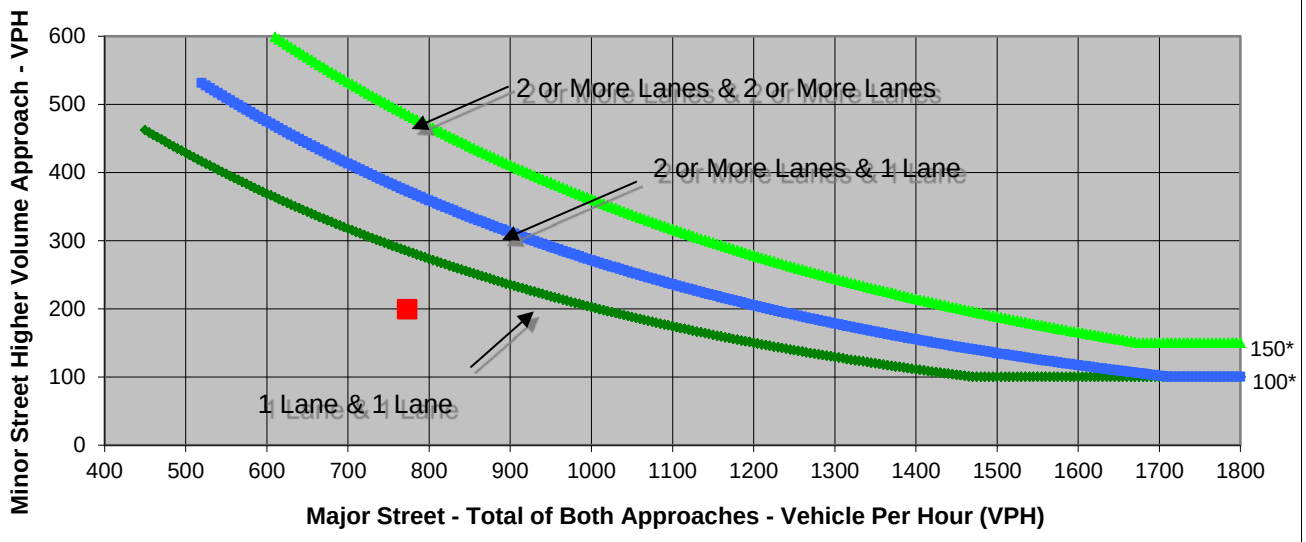
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	0	0
Through	768	0	0	187
Right	0	0	0	12
Total	773	0	0	199

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**773**	**199**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: Mandela Parkway Northbound
Minor Street: 20th Street
Scenario: Near-Term with Park Conditions
Peak Hour: PM

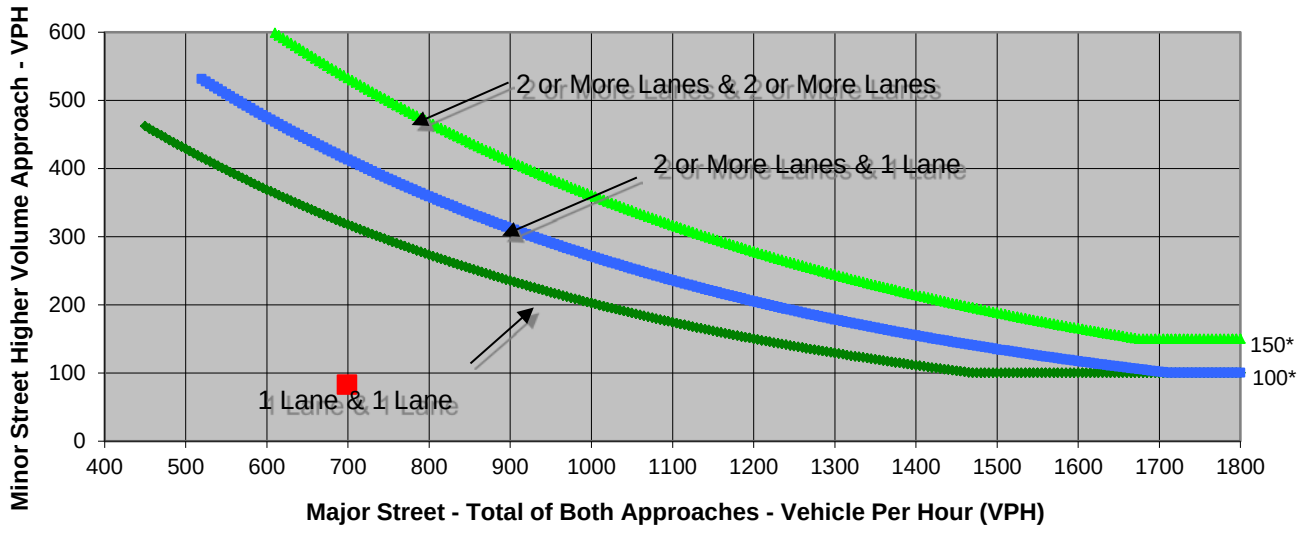
Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	83	0
Through	690	0	0	1
Right	3	0	0	5
Total	699	0	83	6

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway Northbound	Minor Street 20th Street	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**699**	**83**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Near-Term with Park Conditions		
Peak Hour	SAT		

Major Street	W. Grand Ave
Minor Street	Campbell St.

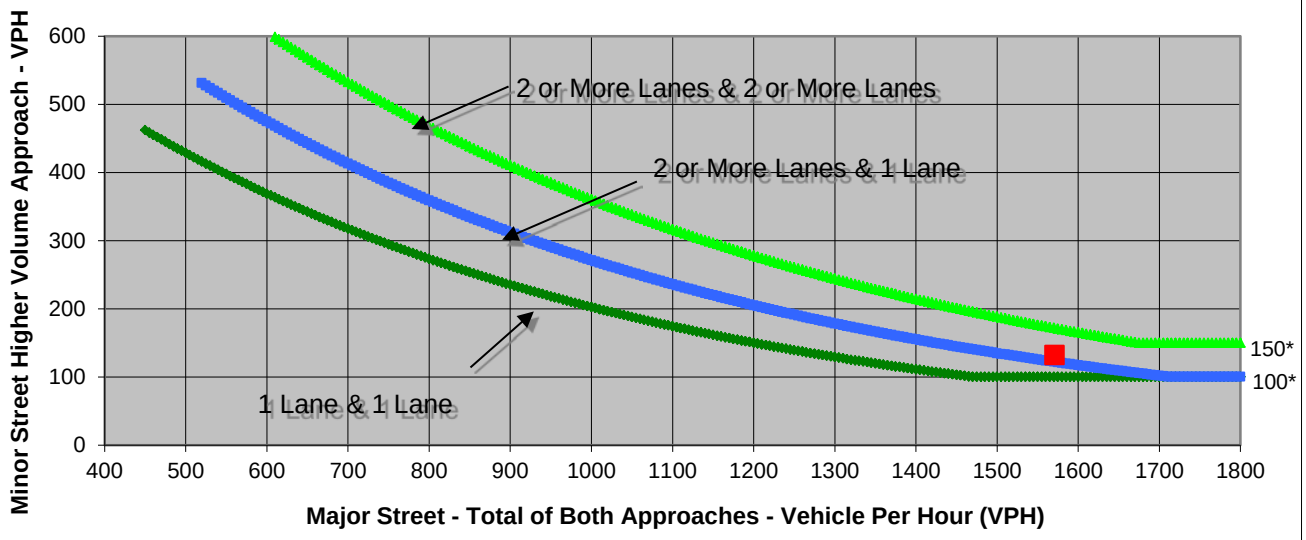
Turn Movement Volumes

	NB	SB	EB	WB
Left	55	4	32	23
Through	5	13	566	902
Right	29	115	42	6
Total	89	132	640	931

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street W. Grand Ave	Minor Street Campbell St.	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,571**	**132**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Gateway Regional Park
Scenario	Near-Term with Park Conditions
Peak Hour	SAT
Major Street	Mandela Parkway Southbound
Minor Street	24th Street

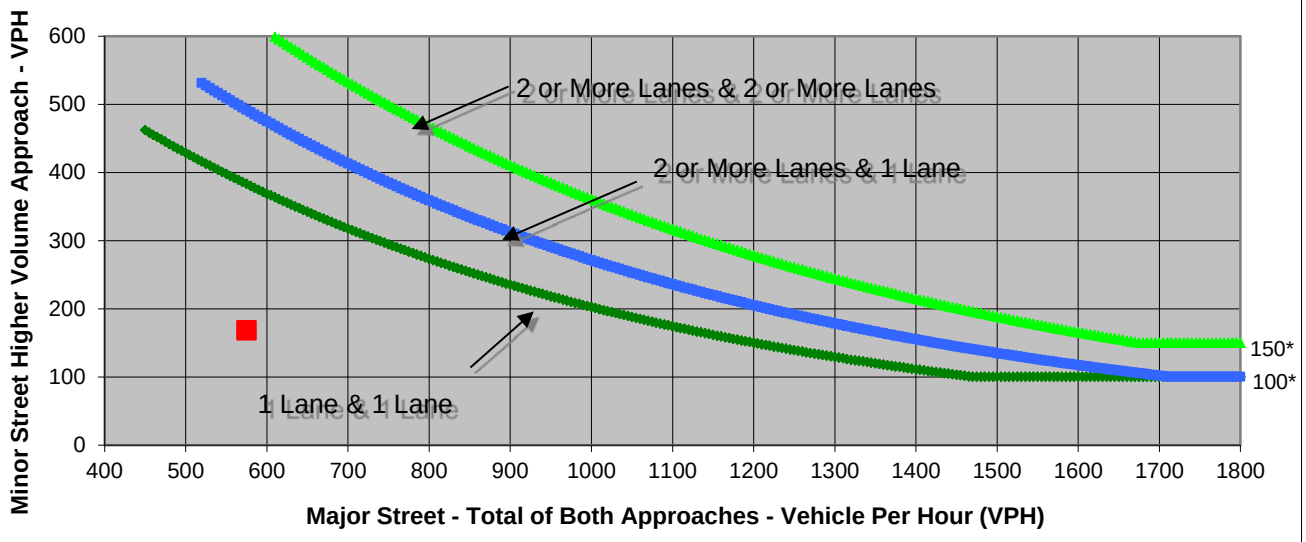
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	168	0
Through	0	575	0	0
Right	0	0	0	0
Total	0	575	168	0

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway Southbound	Minor Street 24th Street	Warrant Met
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**575**	**168**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Near-Term with Park Conditions		
Peak Hour	SAT		

Major Street	Mandela Parkway Southbound
Minor Street	20th Street

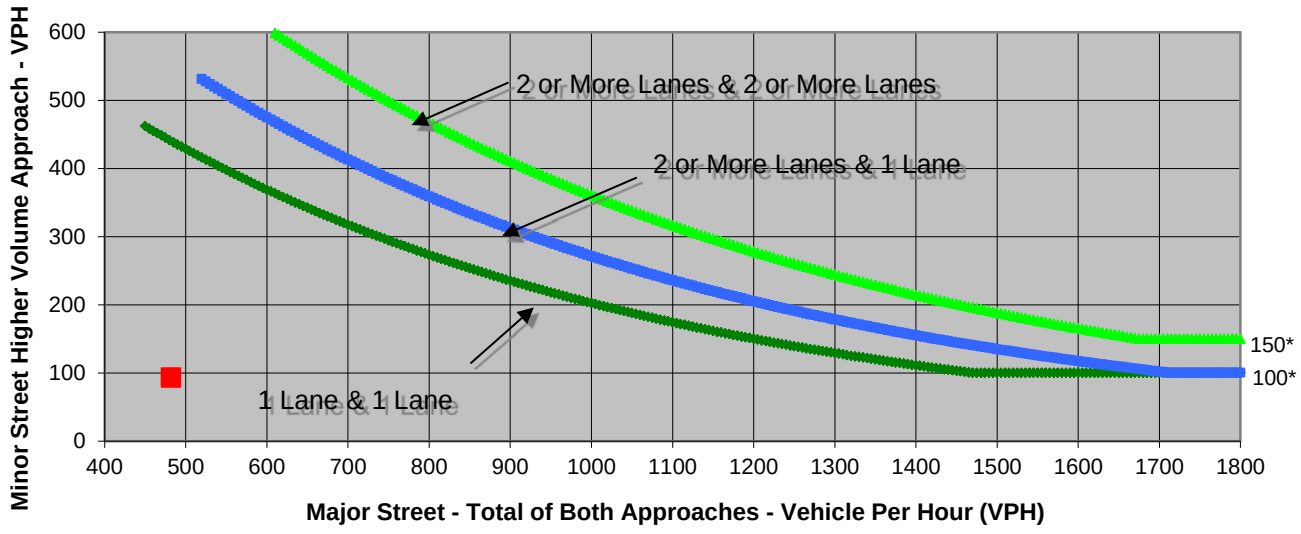
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	32	74	6
Through	0	437	1	0
Right	0	13	18	12
Total	0	482	93	18

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway Southbound	Minor Street 20th Street	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**482**	**93**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Near-Term with Park Conditions		
Peak Hour	SAT		

Major Street	Mandela Parkway
Minor Street	24th Street

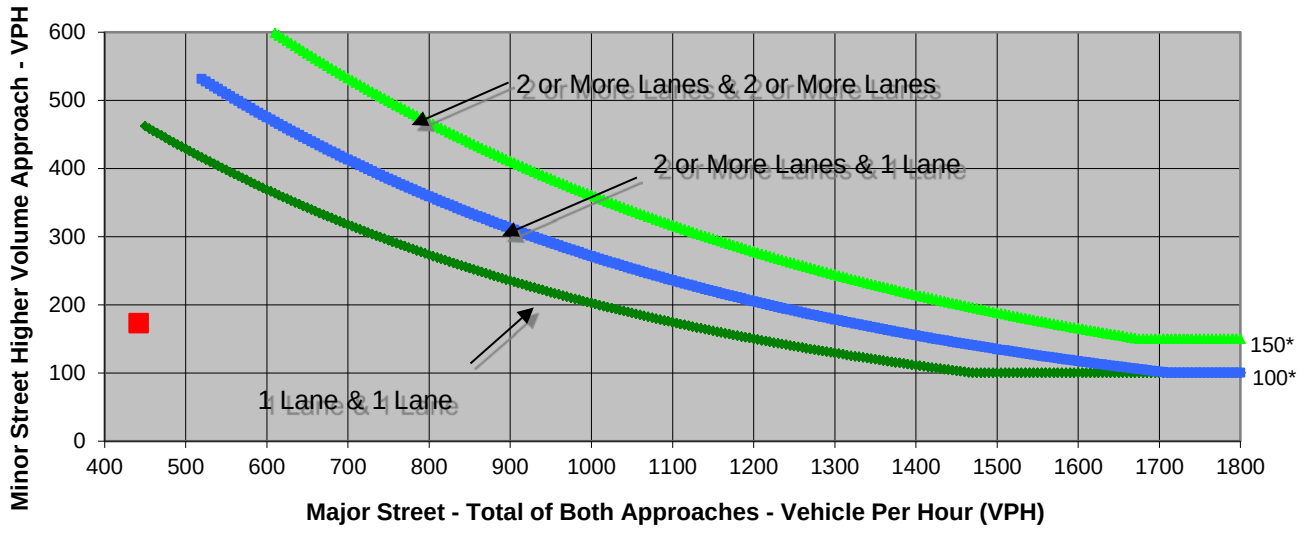
Turn Movement Volumes

	NB	SB	EB	WB
Left	4	0	0	0
Through	438	0	0	164
Right	0	0	0	9
Total	442	0	0	173

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**442**	**173**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Gateway Regional Park
Scenario	Near-Term with Park Conditions
Peak Hour	SAT
Major Street	Mandela Parkway Northbound
Minor Street	20th Street

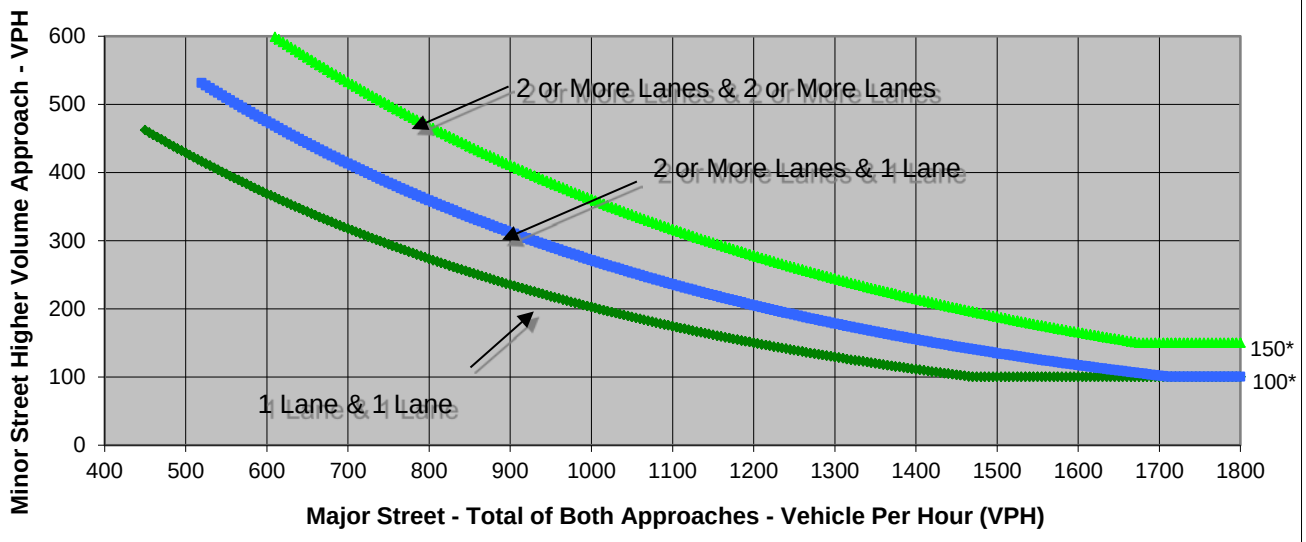
Turn Movement Volumes

	NB	SB	EB	WB
Left	4	0	0	0
Through	348	0	76	1
Right	27	0	0	0
Total	379	0	76	1

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway Northbound	Minor Street 20th Street	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**379**	**76**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Near-Term with Connection and Park Conditions		
Major Street	W. Grand Ave		
Minor Street	Campbell St.		
Peak Hour	PM		

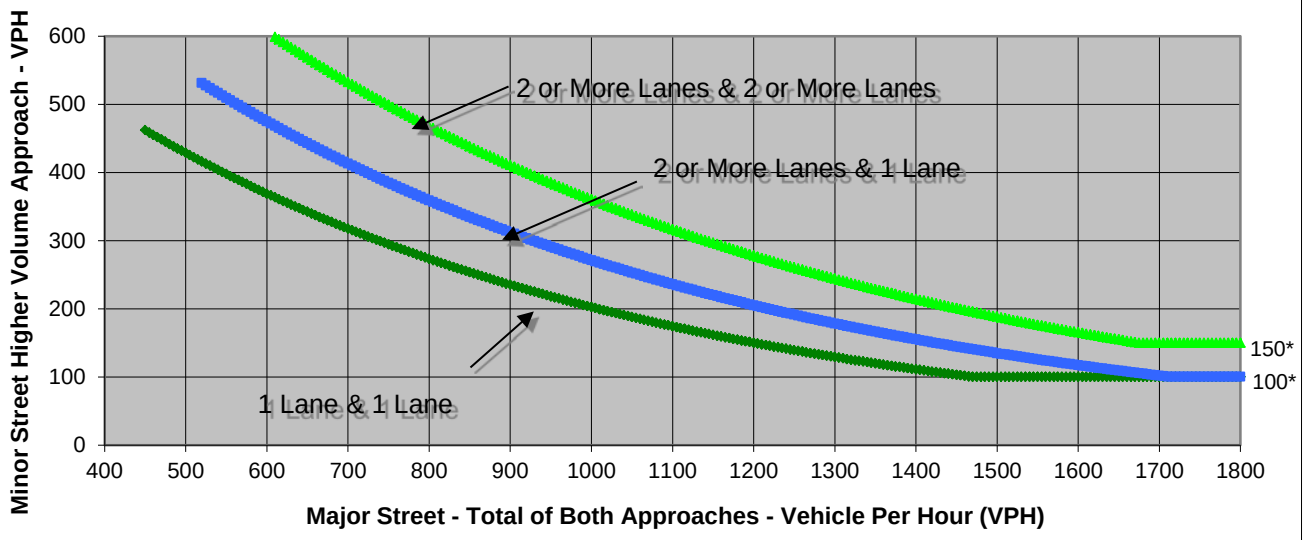
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	3	104	0
Through	0	0	859	902
Right	0	203	0	36
Total	0	206	963	938

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street W. Grand Ave	Minor Street Campbell St.	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,901**	**206**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Near-Term with Connection and Park Conditions		
Peak Hour	PM		

Major Street	Mandela Parkway Southbound
Minor Street	24th Street

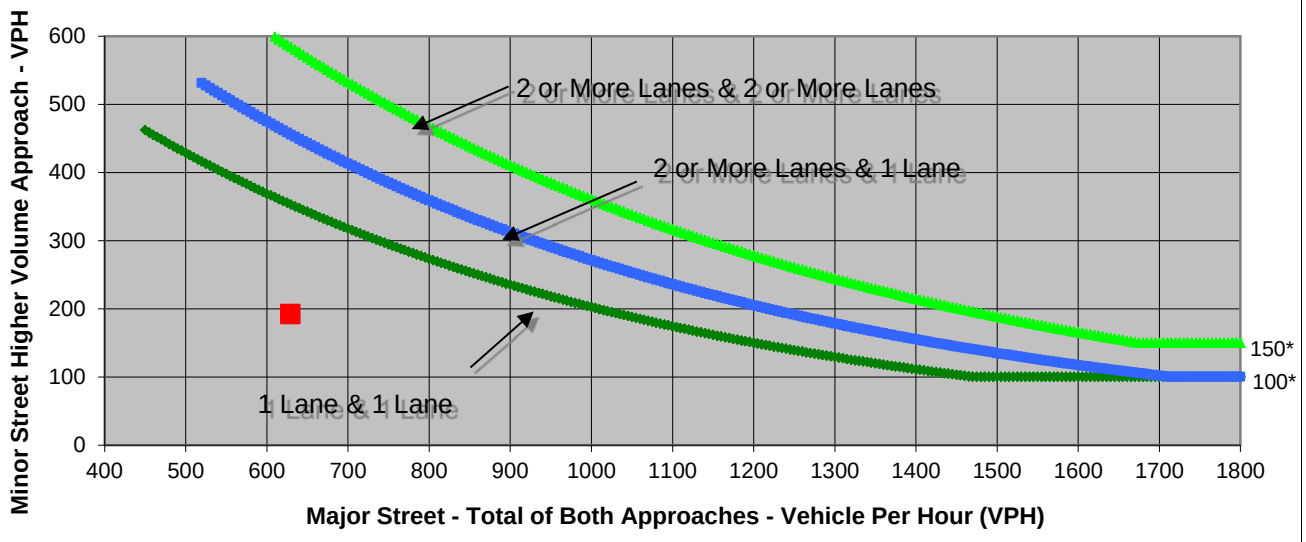
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	192	0
Through	0	629	0	0
Right	0	0	0	0
Total	0	629	192	0

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**629**	**192**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Near-Term with Connection and Park Conditions		
Peak Hour	PM		
Major Street	Mandela Parkway Southbound		
Minor Street	20th Street		

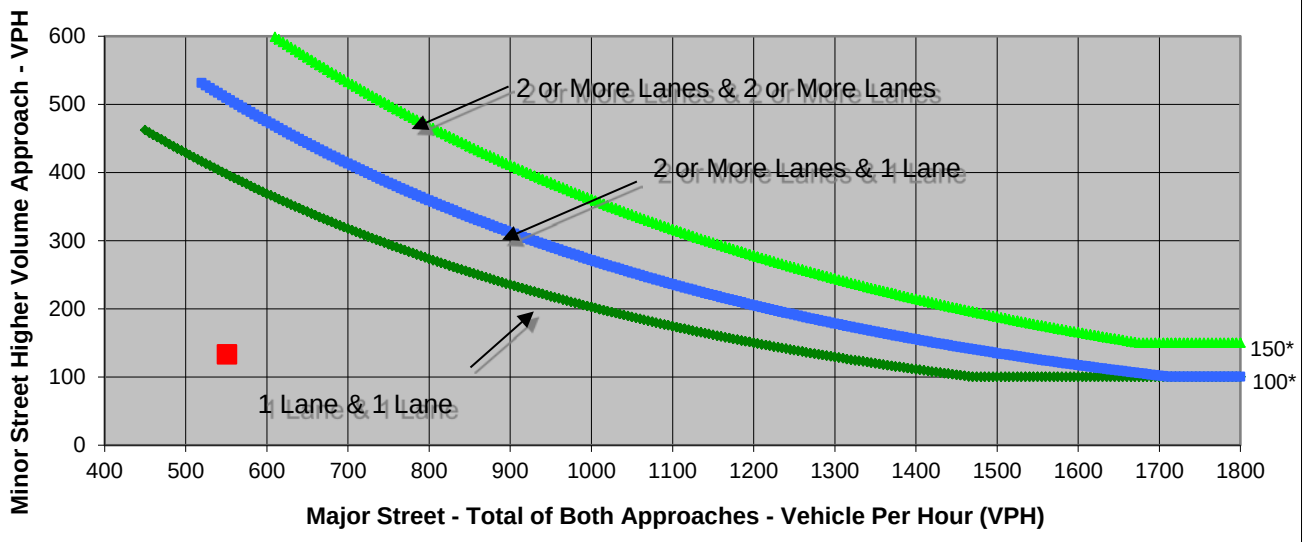
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	8	38	5
Through	0	540	86	1
Right	0	3	9	0
Total	0	551	133	6

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**551**	**133**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Gateway Regional Park
Scenario	Near-Term with Connection and Park Conditions
Peak Hour	PM
Major Street	Mandela Parkway Northbound
Minor Street	24th Street

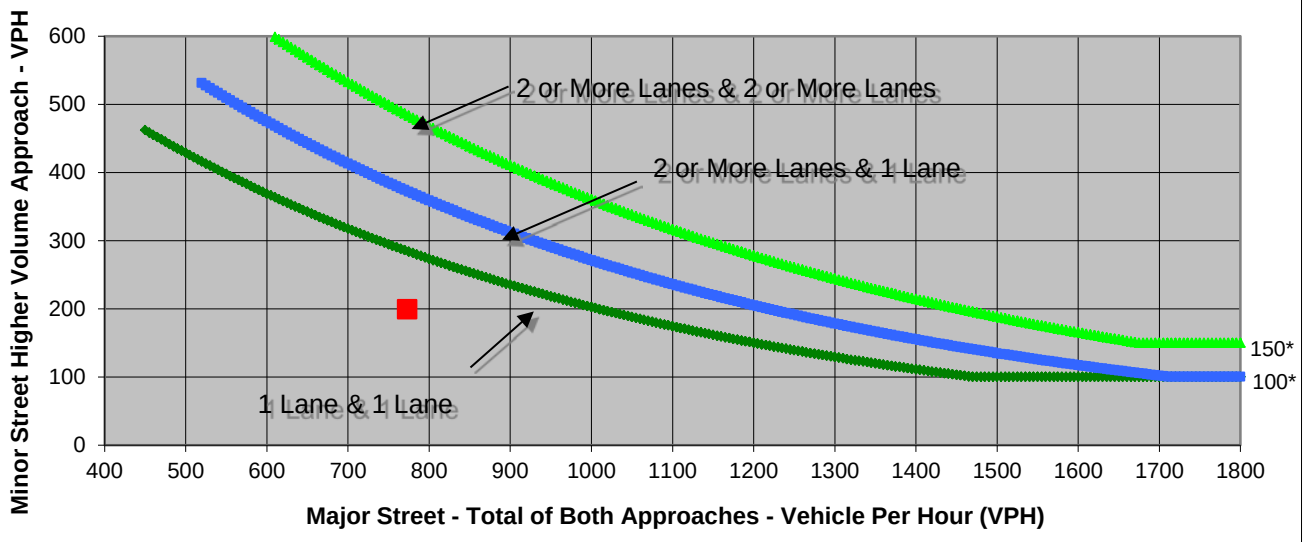
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	0	0
Through	768	0	0	187
Right	0	0	0	12
Total	773	0	0	199

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**773**	**199**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Gateway Regional Park
Scenario	Near-Term with Connection and Park Conditions
Peak Hour	PM
Major Street	Mandela Parkway Northbound
Minor Street	20th Street

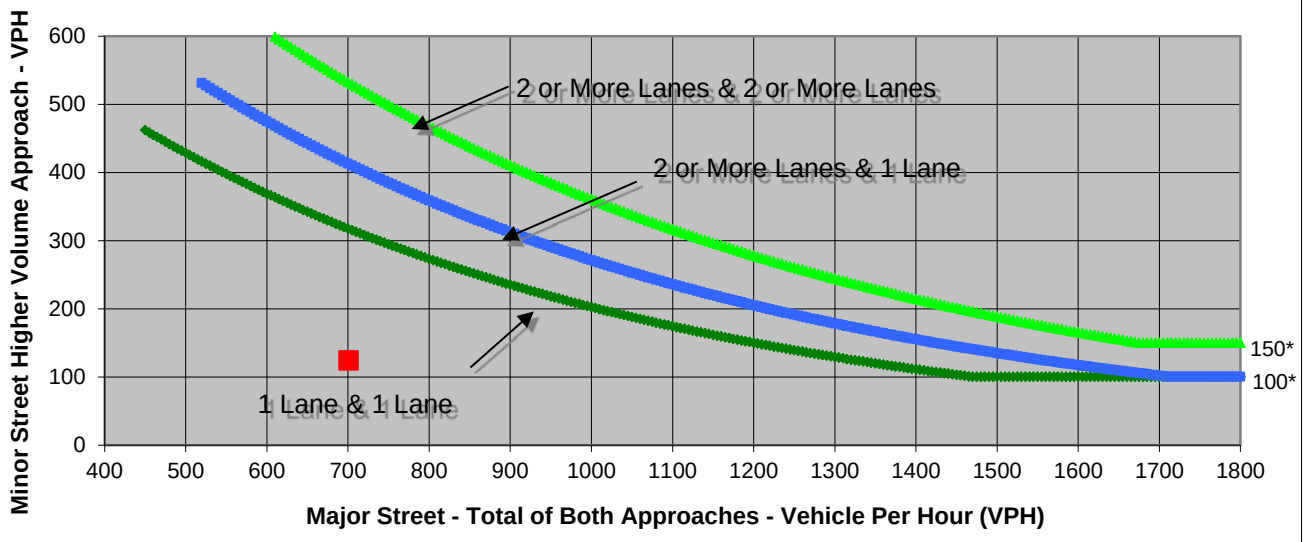
Turn Movement Volumes

	NB	SB	EB	WB
Left	6	0	124	0
Through	692	0	0	1
Right	3	0	0	5
Total	701	0	124	6

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**701**	**124**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: W. Grand Ave
Minor Street: Campbell St.

Scenario: Near-Term with Connection and Park Conditions
Peak Hour: SAT

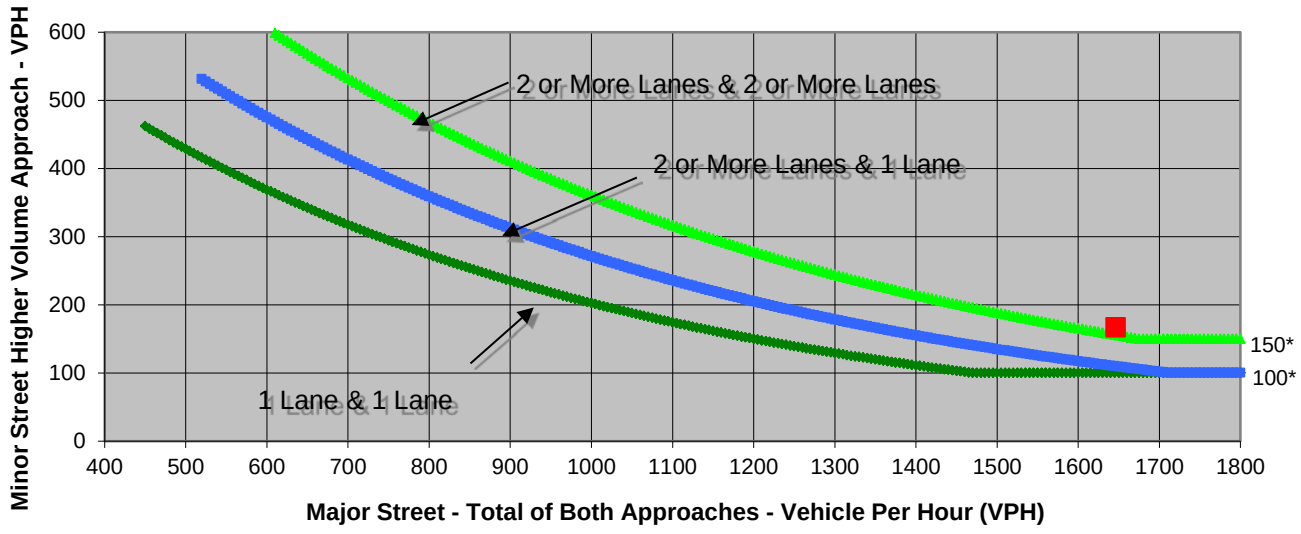
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	4	54	0
Through	0	0	608	932
Right	0	163	0	52
Total	0	167	662	984

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street W. Grand Ave	Minor Street Campbell St.	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,646**	**167**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Near-Term with Connection and Park Conditions		
Peak Hour	SAT		

Major Street	Mandela Parkway Southbound
Minor Street	24th Street

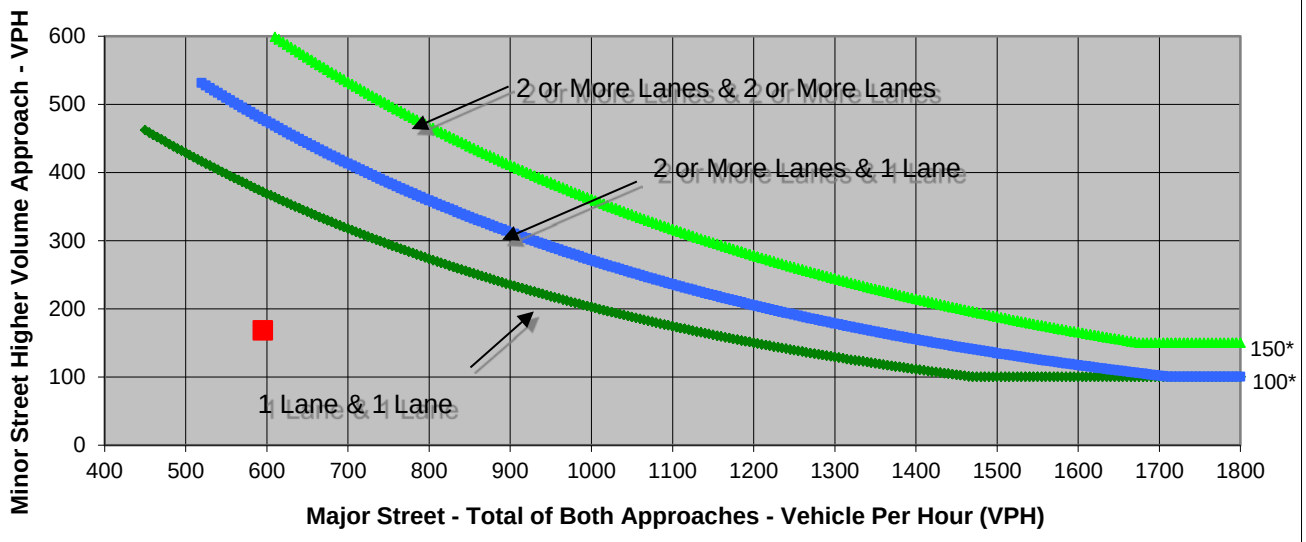
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	168	0
Through	0	595	0	0
Right	0	0	0	0
Total	0	595	168	0

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway Southbound	Minor Street 24th Street	Warrant Met
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**595**	**168**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Gateway Regional Park
Scenario	Near-Term with Connection and Park Conditions
Peak Hour	SAT
Major Street	Mandela Parkway Southbound
Minor Street	20th Street

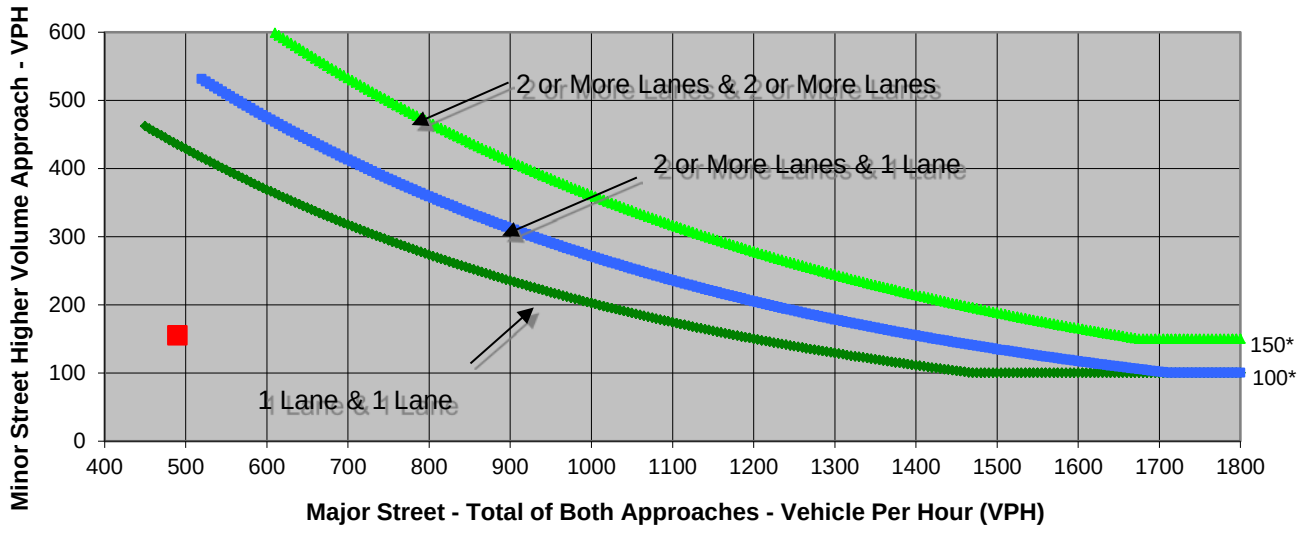
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	32	74	6
Through	0	445	63	0
Right	0	13	18	12
Total	0	490	155	18

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**490**	**155**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: Mandela Parkway Northbound
Minor Street: 24th Street

Scenario: Near-Term with Connection and Park Conditions
Peak Hour: SAT

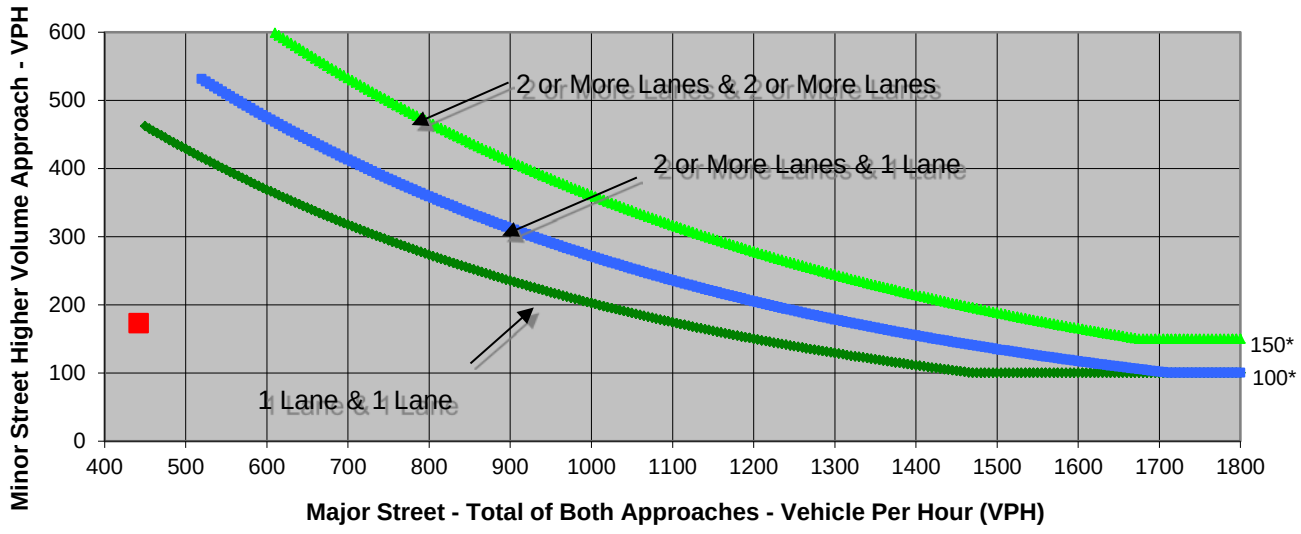
Turn Movement Volumes

	NB	SB	EB	WB
Left	4	0	0	0
Through	438	0	0	164
Right	0	0	0	9
Total	442	0	0	173

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway Northbound	Minor Street 24th Street	Warrant Met
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**442**	**173**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: Mandela Parkway Northbound
Minor Street: 20th Street

Scenario: Near-Term with Connection and Park Conditions
Peak Hour: SAT

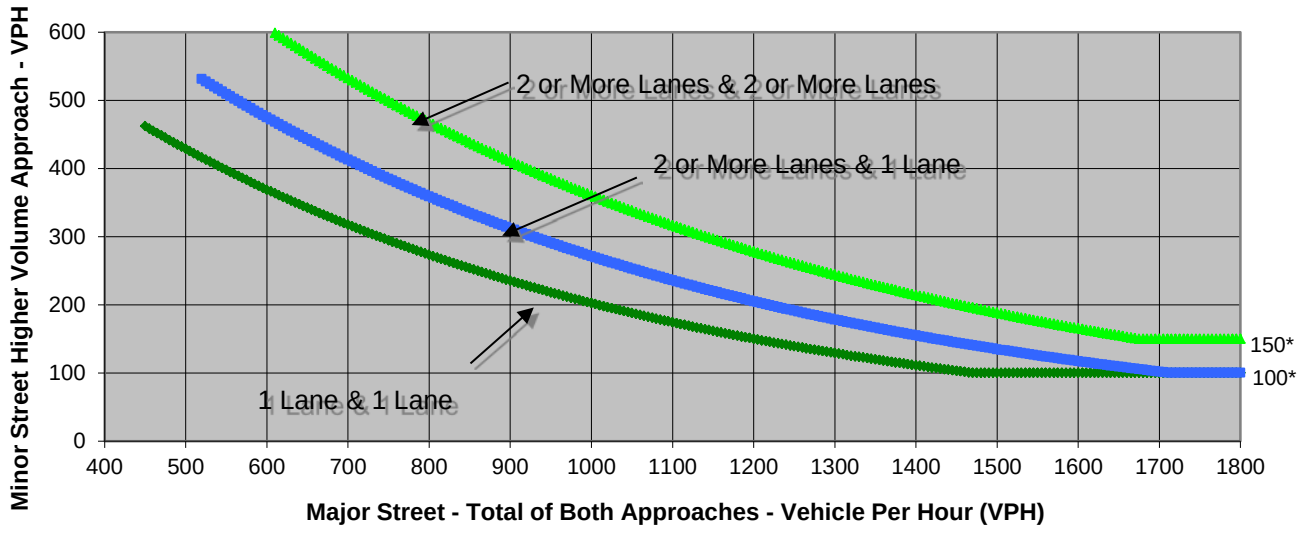
Turn Movement Volumes

	NB	SB	EB	WB
Left	4	0	62	0
Through	354	0	76	1
Right	27	0	0	0
Total	385	0	138	1

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway Northbound	Minor Street 20th Street	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**385**	**138**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

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Project Gateway Regional Park

Major Street W. Grand Ave
Minor Street Campbell St.

Scenario Cumulative Conditions
Peak Hour PM

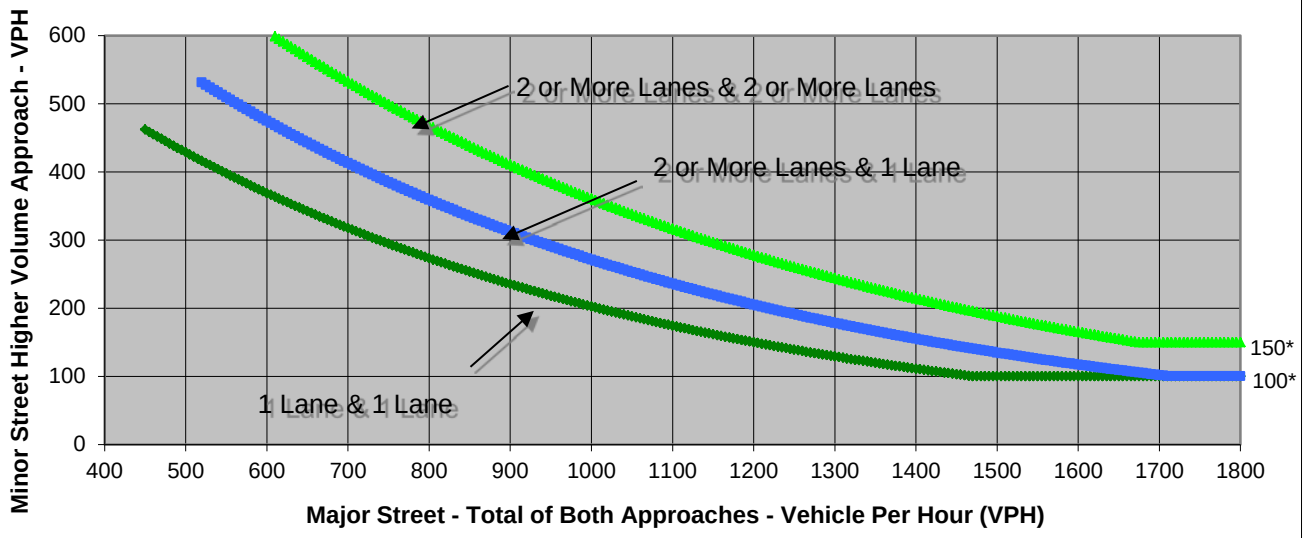
Turn Movement Volumes

	NB	SB	EB	WB
Left	54	3	128	30
Through	0	7	1,008	1,079
Right	22	232	67	17
Total	76	242	1,203	1,126

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	W. Grand Ave	Campbell St.	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,329**	**242**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park

Major Street Mandela Parkway Southbound
Minor Street 24th Street

Scenario Cumulative Conditions
Peak Hour PM

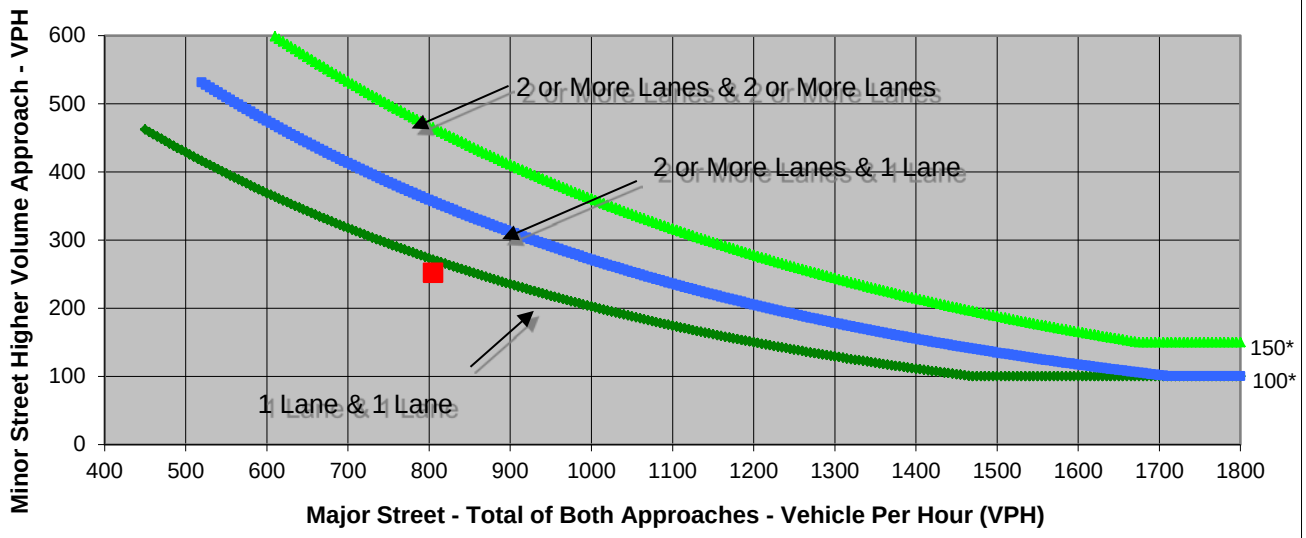
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	252	0
Through	0	805	0	0
Right	0	0	0	0
Total	0	805	252	0

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**805**	**252**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Cumulative Conditions
Peak Hour PM

Major Street Mandela Parkway Southbound
Minor Street 20th Street

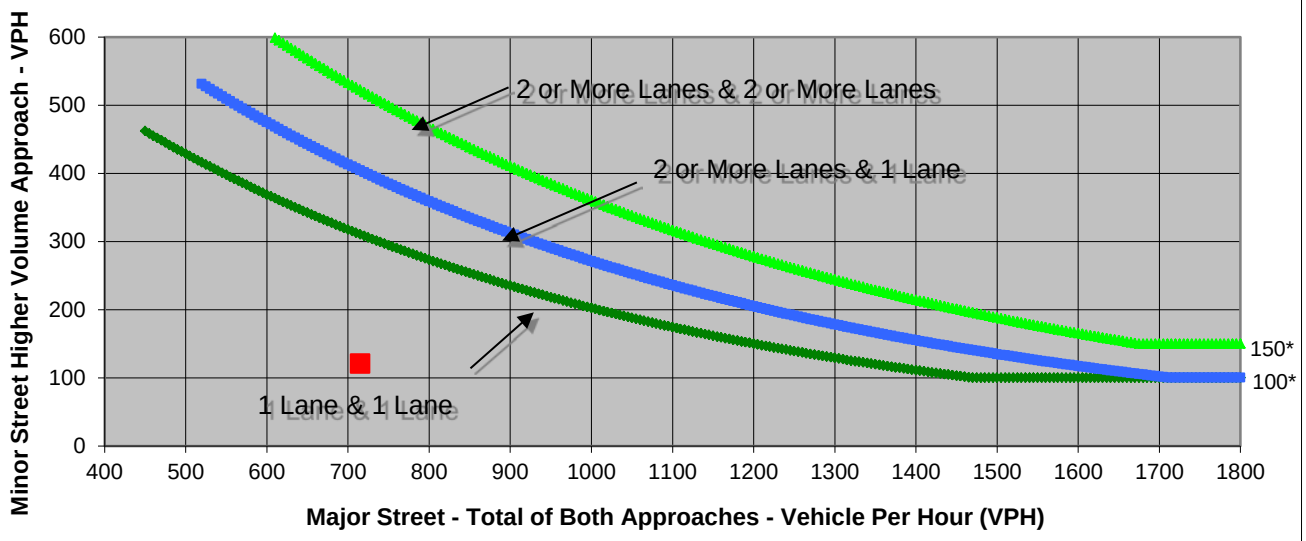
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	10	0	7
Through	0	702	109	2
Right	0	3	12	0
Total	0	715	121	9

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**715**	**121**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

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Project Gateway Regional Park
Scenario Cumulative Conditions
Peak Hour PM

Major Street Mandela Parkway
Minor Street 24th Street

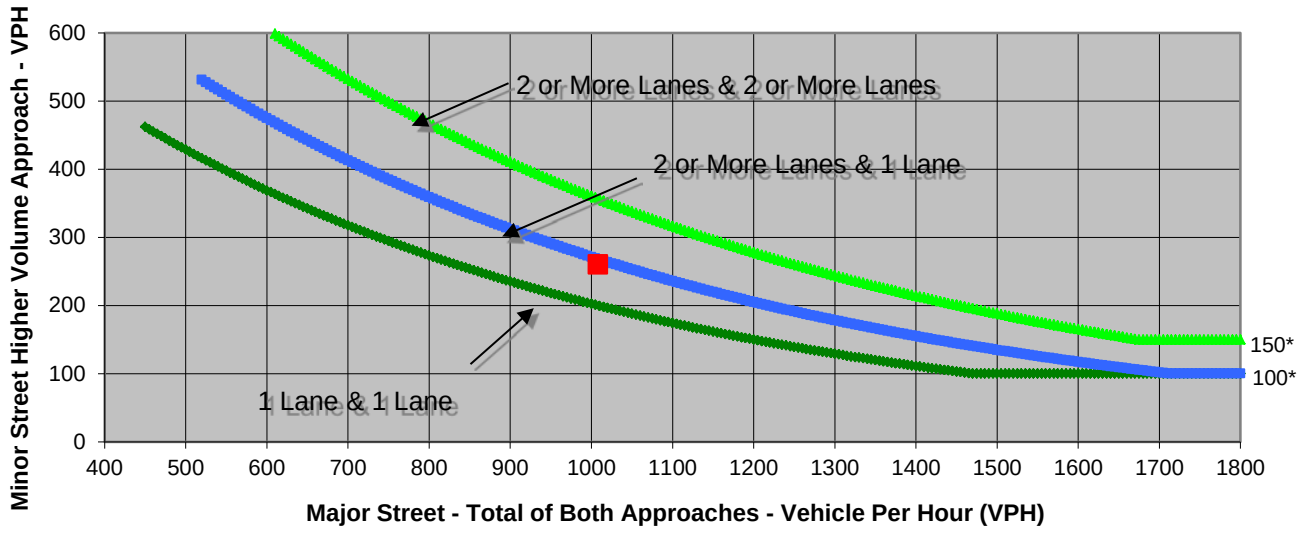
Turn Movement Volumes

	NB	SB	EB	WB
Left	7	0	0	0
Through	1,001	0	0	245
Right	0	0	0	15
Total	1,008	0	0	260

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**1,008**	**260**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

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Project Gateway Regional Park
Scenario Cumulative Conditions
Peak Hour PM

Major Street Mandela Parkway Northbound
Minor Street 20th Street

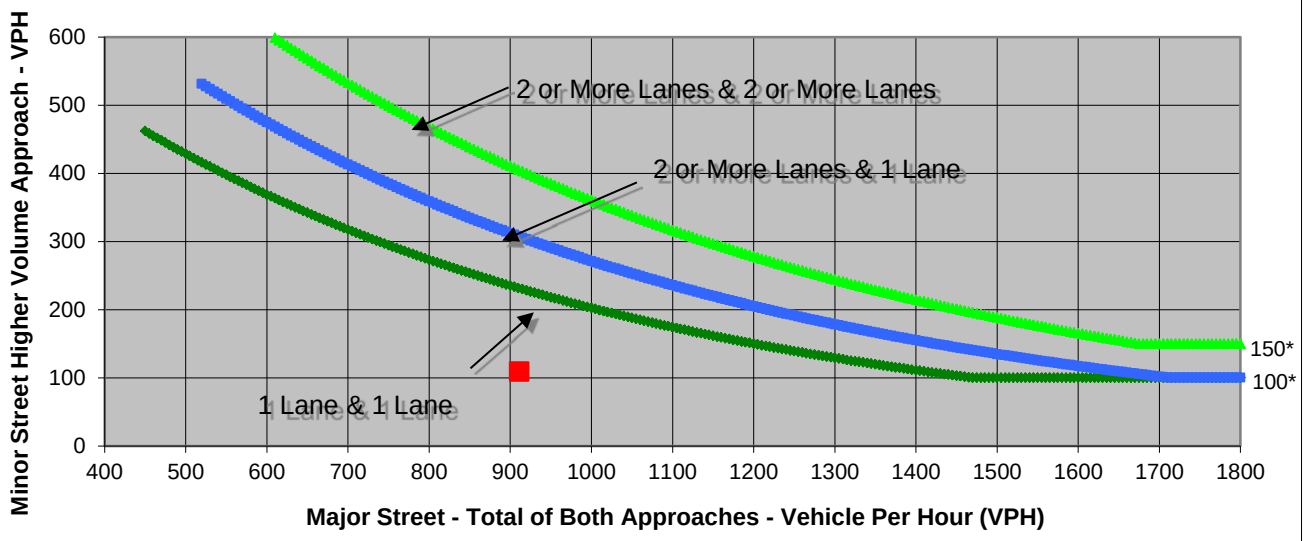
Turn Movement Volumes

	NB	SB	EB	WB
Left	8	0	109	0
Through	900	0	0	2
Right	3	0	0	7
Total	911	0	109	9

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**911**	**109**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park

Major Street W. Grand Ave
Minor Street Campbell St.

Scenario Cumulative Conditions
Peak Hour SAT

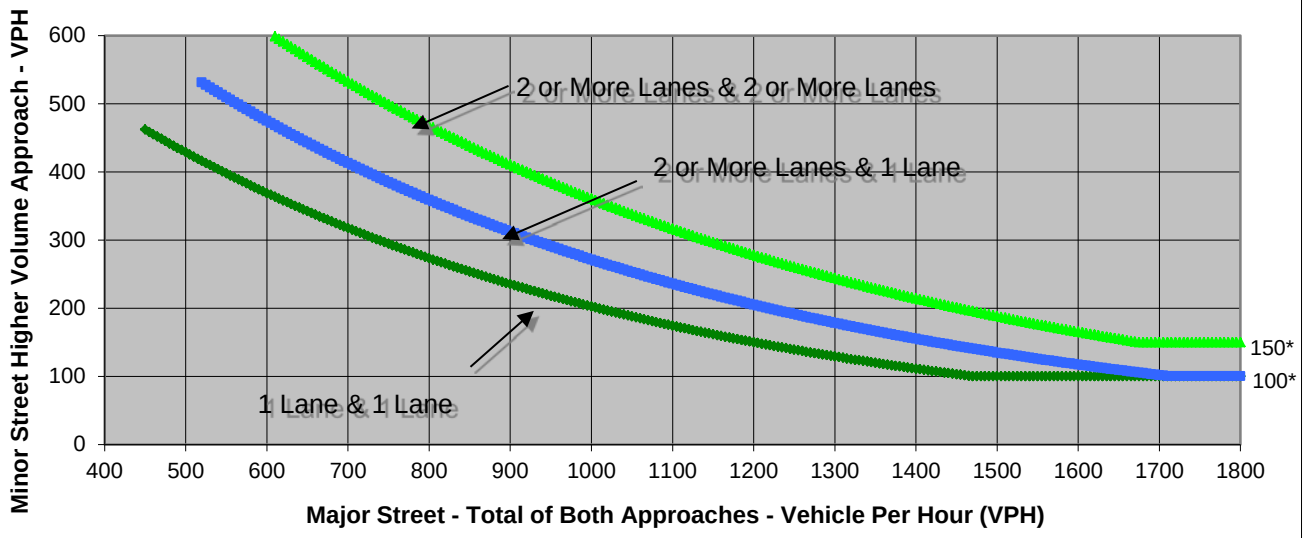
Turn Movement Volumes

	NB	SB	EB	WB
Left	72	5	55	30
Through	7	17	606	1,048
Right	39	151	55	8
Total	118	173	716	1,086

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	W. Grand Ave	Campbell St.	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,802**	**173**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

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Project Gateway Regional Park

Major Street Mandela Parkway Southbound
Minor Street 24th Street

Scenario Cumulative Conditions
Peak Hour SAT

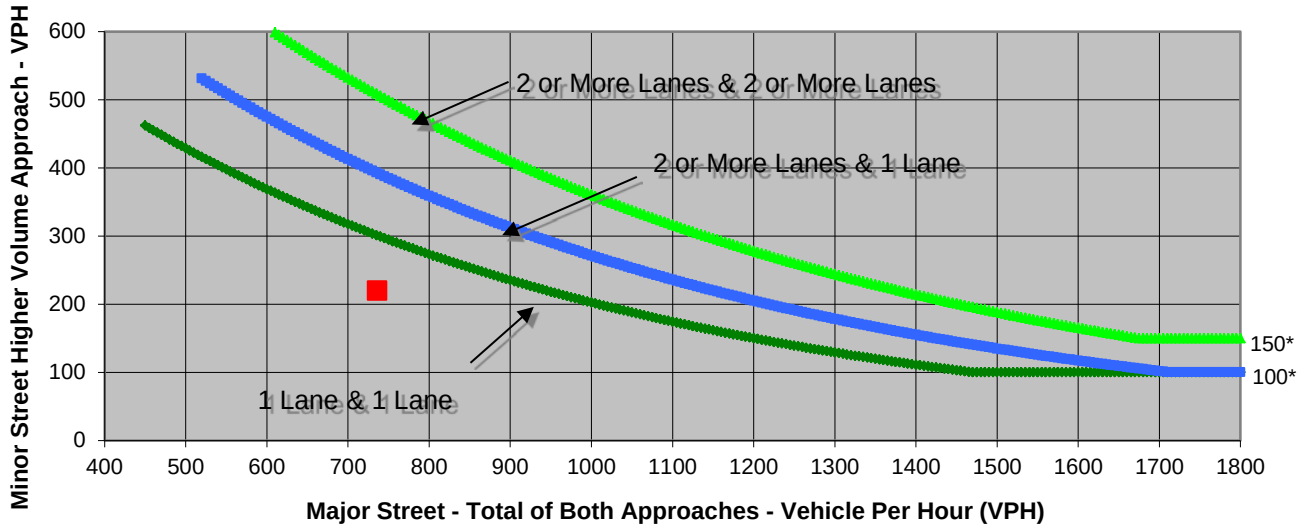
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	220	0
Through	0	736	0	0
Right	0	0	0	0
Total	0	736	220	0

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**736**	**220**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Project Gateway Regional Park
Scenario Cumulative Conditions
Peak Hour SAT

Major Street Mandela Parkway Southbound
Minor Street 20th Street

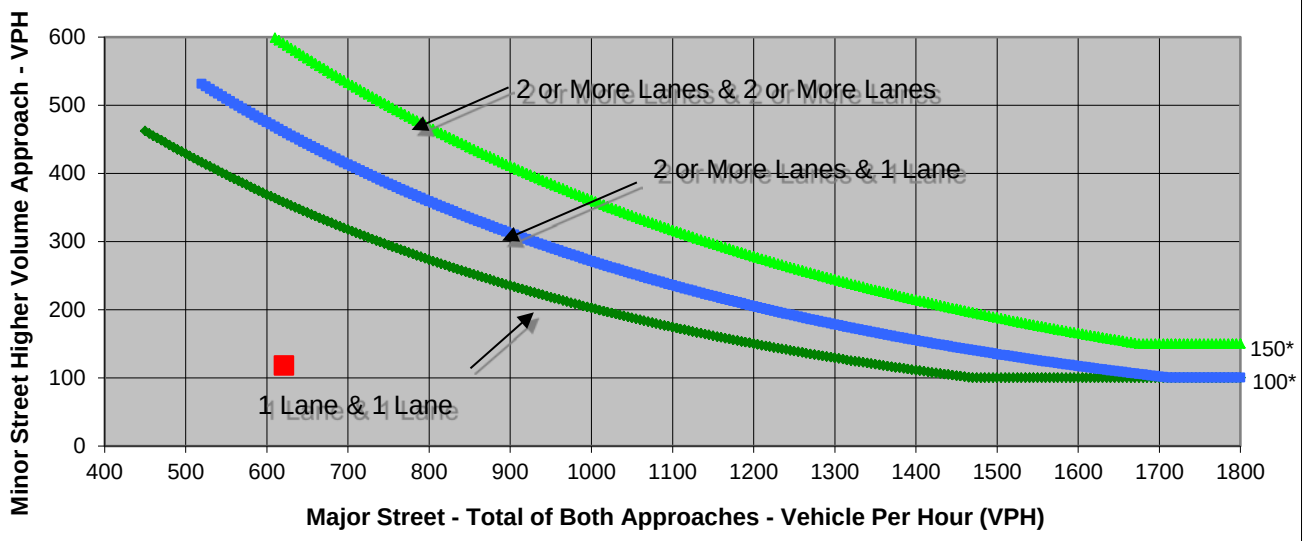
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	42	92	0
Through	0	562	2	99
Right	0	17	24	0
Total	0	621	118	99

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**621**	**118**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

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Project Gateway Regional Park
Scenario Cumulative Conditions
Peak Hour SAT

Major Street Mandela Parkway
Minor Street 24th Street

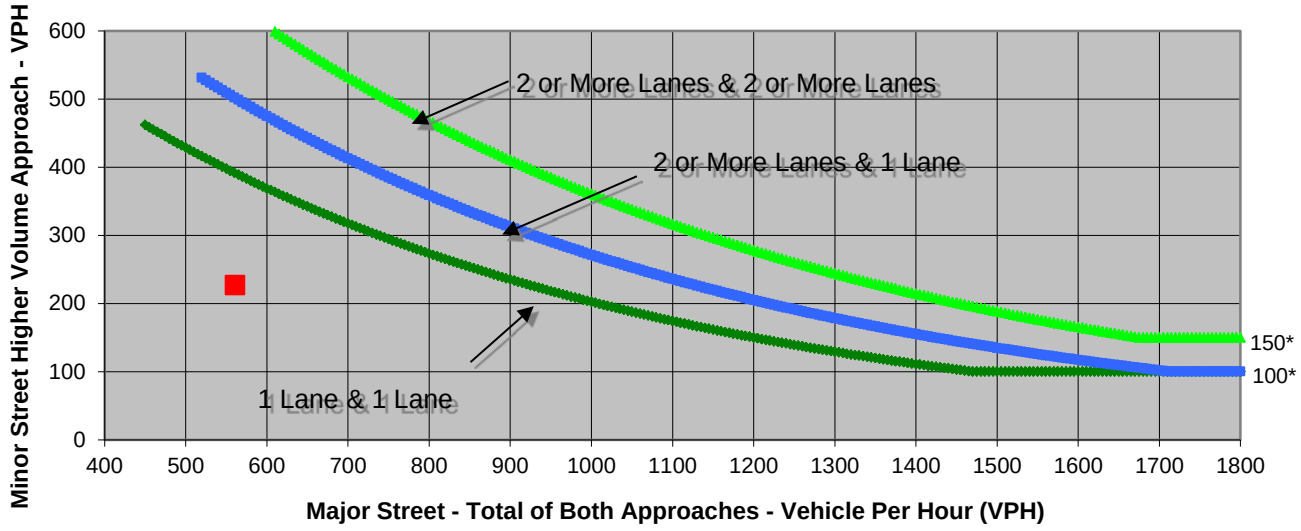
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	0	0
Through	556	0	0	215
Right	0	0	0	12
Total	561	0	0	227

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**561**	**227**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

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Project Gateway Regional Park
Scenario Cumulative Conditions
Peak Hour SAT

Major Street Mandela Parkway Northbound
Minor Street 20th Street

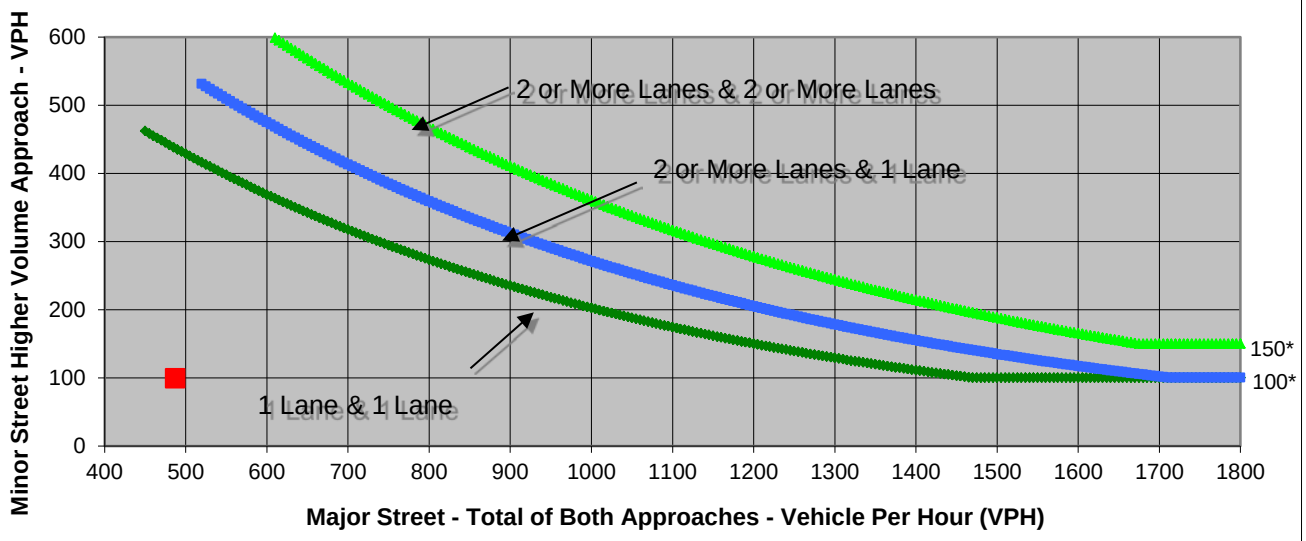
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	0	0
Through	447	0	99	2
Right	35	0	0	0
Total	487	0	99	2

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**487**	**99**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: W. Grand Ave
Minor Street: Campbell St.

Scenario: Cumulative with Park Conditions
Peak Hour: PM

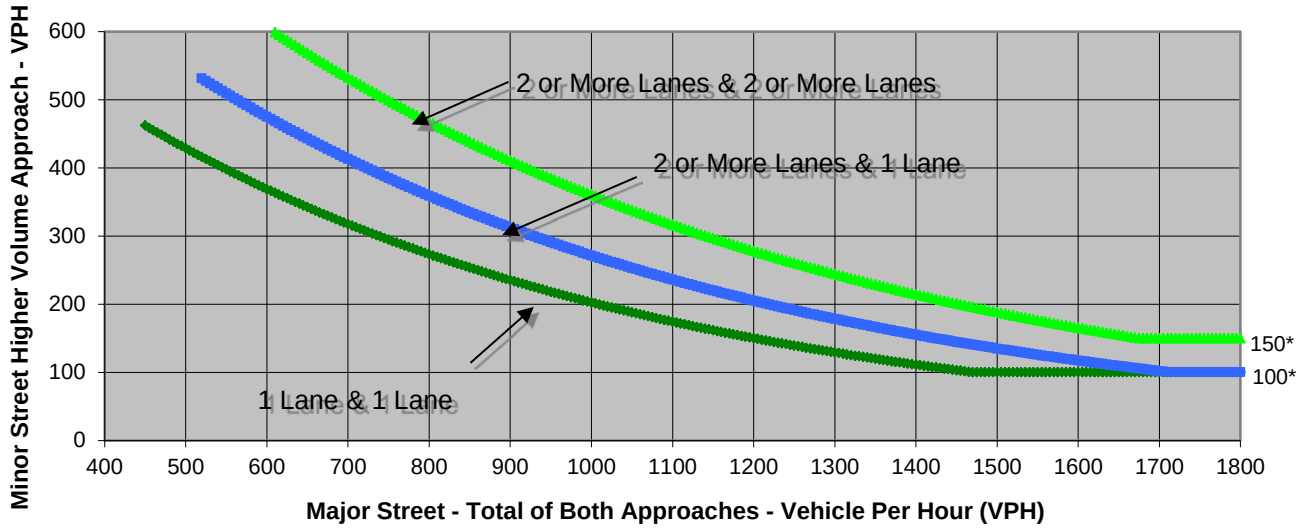
Turn Movement Volumes

	NB	SB	EB	WB
Left	54	3	128	30
Through	0	7	1,048	1,136
Right	22	232	67	17
Total	76	242	1,243	1,183

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street W. Grand Ave	Minor Street Campbell St.	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,426**	**242**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: Mandela Parkway Southbound
Minor Street: 24th Street

Scenario: Cumulative with Park Conditions
Peak Hour: PM

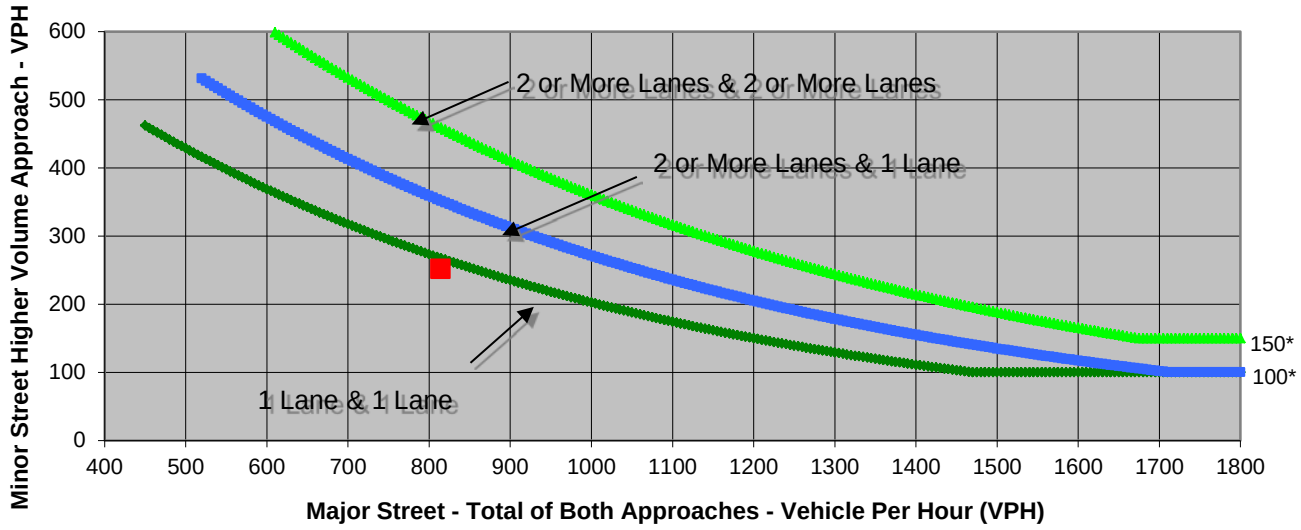
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	252	0
Through	0	814	0	0
Right	0	0	0	0
Total	0	814	252	0

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**814**	**252**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

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Project Gateway Regional Park
Scenario Cumulative with Park Conditions
Peak Hour PM

Major Street Mandela Parkway Southbound
Minor Street 20th Street

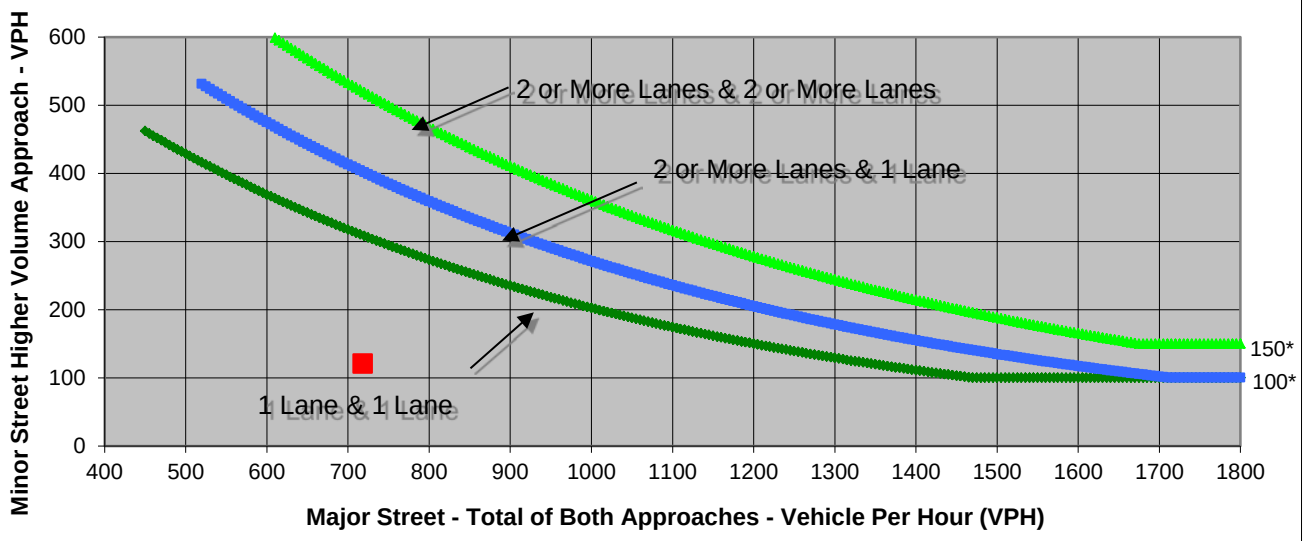
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	10	0	7
Through	0	705	109	2
Right	0	3	12	0
Total	0	718	121	9

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**718**	**121**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Cumulative with Park Conditions
Peak Hour PM

Major Street Mandela Parkway
Minor Street 24th Street

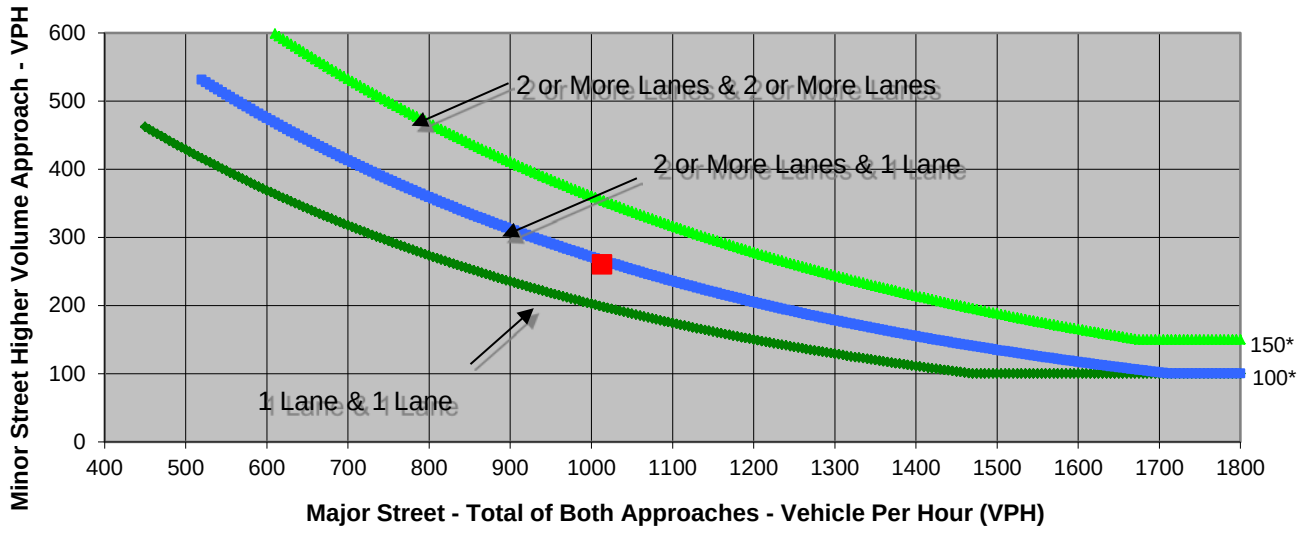
Turn Movement Volumes

	NB	SB	EB	WB
Left	7	0	0	0
Through	1,006	0	0	245
Right	0	0	0	15
Total	1,013	0	0	260

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway	Minor Street 24th Street	Warrant Met
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**1,013**	**260**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

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Project Gateway Regional Park
Scenario Cumulative Conditions
Peak Hour PM

Major Street Mandela Parkway Northbound
Minor Street 20th Street

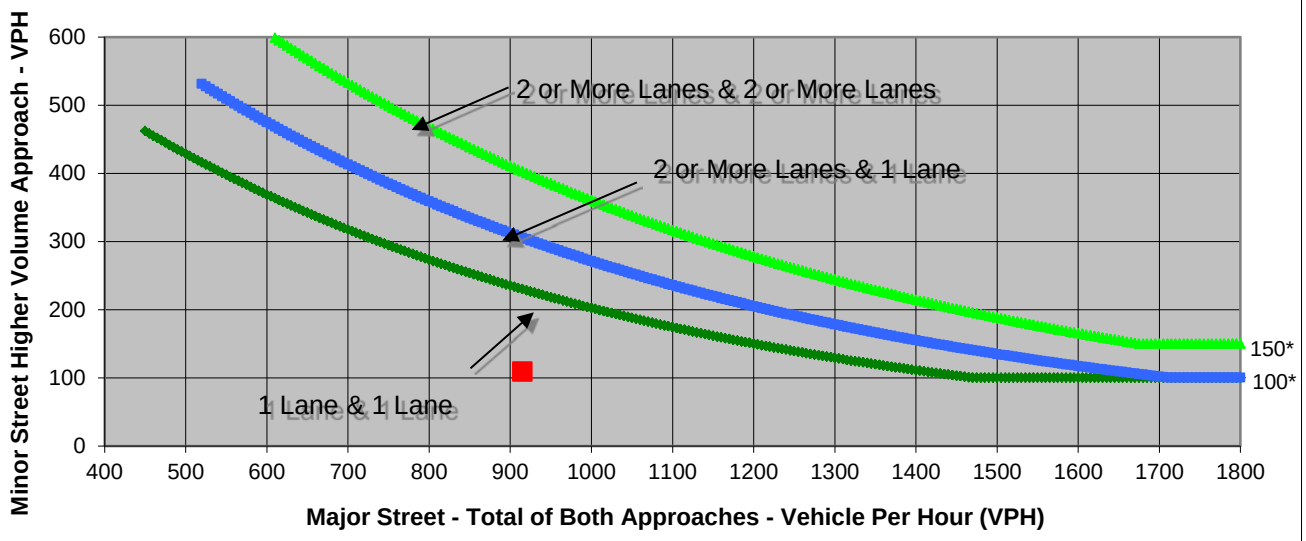
Turn Movement Volumes

	NB	SB	EB	WB
Left	8	0	109	0
Through	904	0	0	2
Right	3	0	0	7
Total	915	0	109	9

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**915**	**109**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: W. Grand Ave
Minor Street: Campbell St.

Scenario: Cumulative with Park Conditions
Peak Hour: SAT

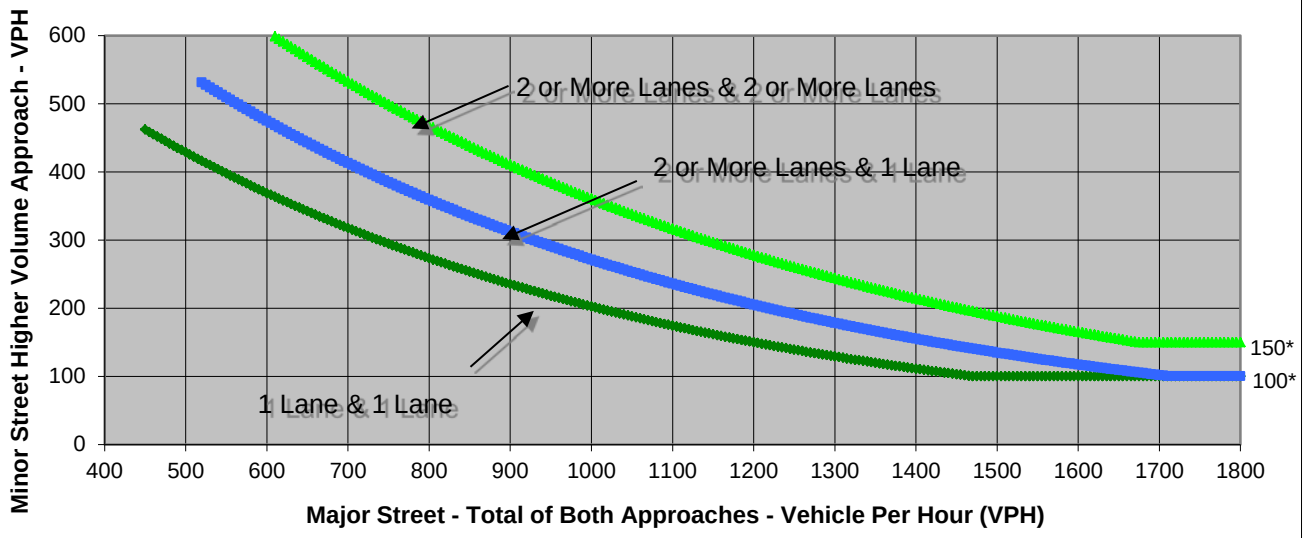
Turn Movement Volumes

	NB	SB	EB	WB
Left	72	5	55	30
Through	7	17	710	1,151
Right	39	151	55	8
Total	118	173	820	1,189

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street W. Grand Ave	Minor Street Campbell St.	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,009**	**173**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: Mandela Parkway Southbound
Minor Street: 24th Street

Scenario: Cumulative with Park Conditions
Peak Hour: SAT

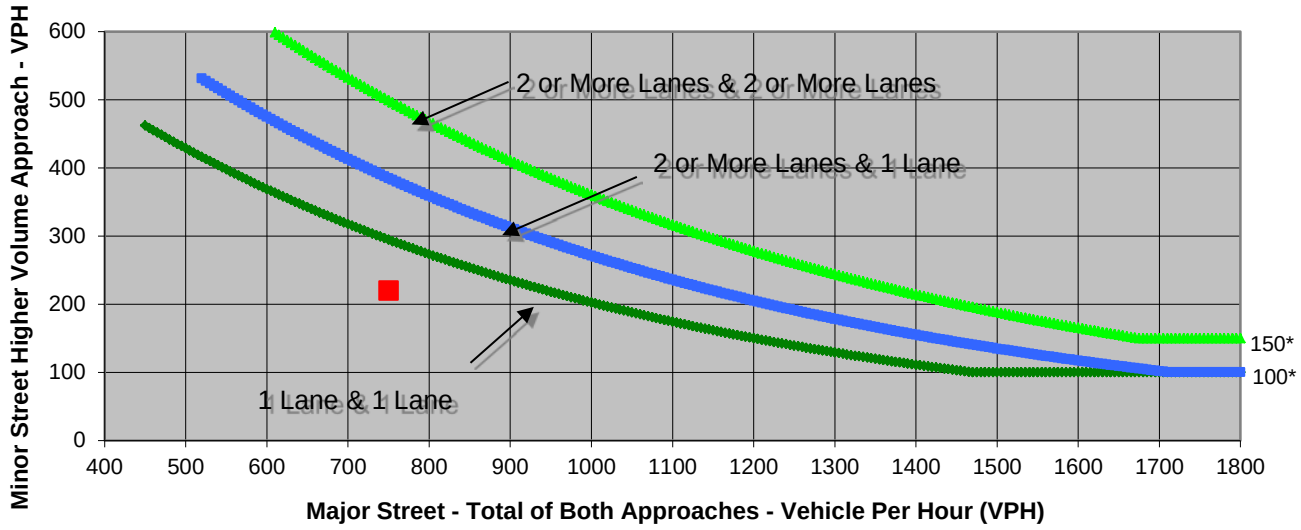
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	220	0
Through	0	750	0	0
Right	0	0	0	0
Total	0	750	220	0

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**750**	**220**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

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Project Gateway Regional Park
Scenario Cumulative with Park Conditions
Peak Hour SAT

Major Street Mandela Parkway Southbound
Minor Street 20th Street

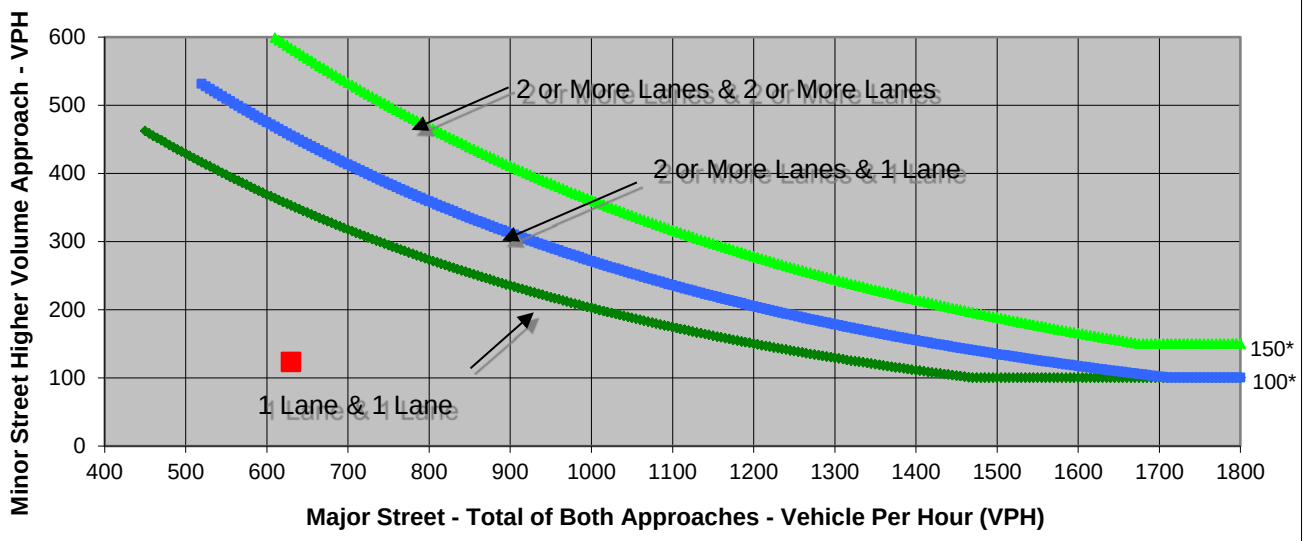
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	42	97	8
Through	0	571	2	0
Right	0	17	24	15
Total	0	630	123	23

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**630**	**123**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Cumulative with Park Conditions
Peak Hour SAT

Major Street Mandela Parkway
Minor Street 24th Street

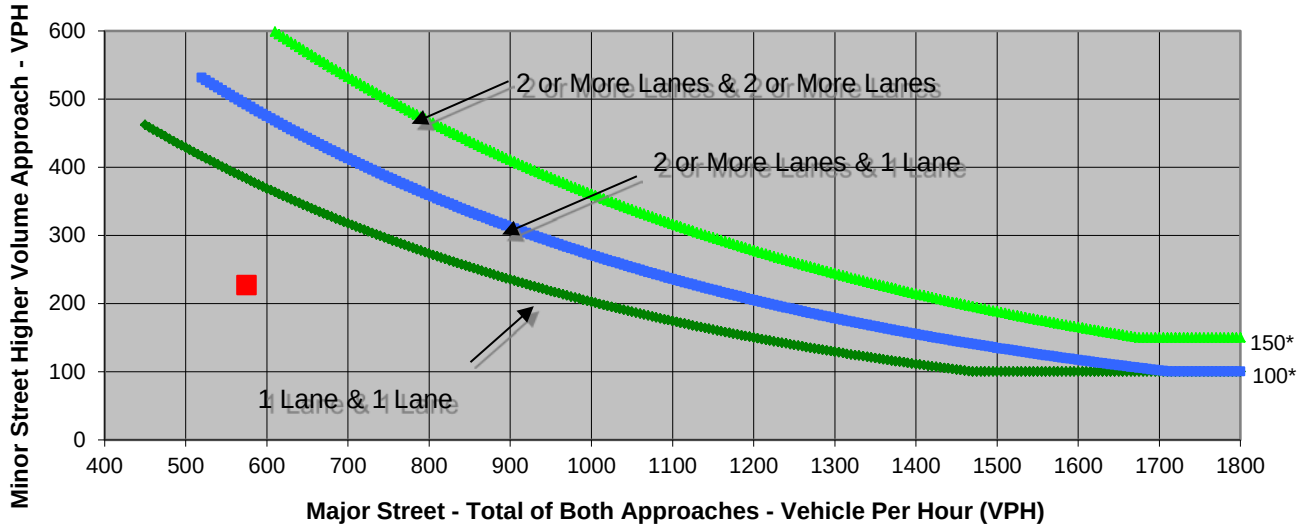
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	0	0
Through	570	0	0	215
Right	0	0	0	12
Total	575	0	0	227

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**575**	**227**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project Gateway Regional Park
Scenario Cumulative Conditions
Peak Hour SAT

Major Street Mandela Parkway Northbound
Minor Street 20th Street

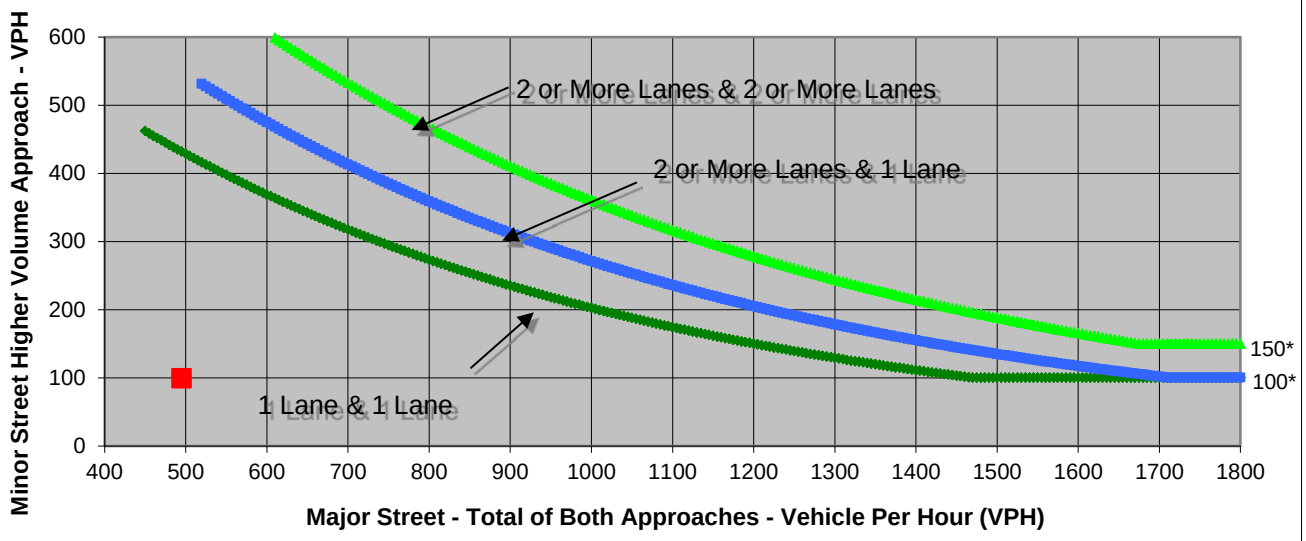
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	99	0
Through	455	0	0	2
Right	35	0	0	0
Total	495	0	99	2

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**495**	**99**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: W. Grand Ave
Minor Street: Campbell St.

Scenario: Cumulative with Connection Conditions
Peak Hour: PM

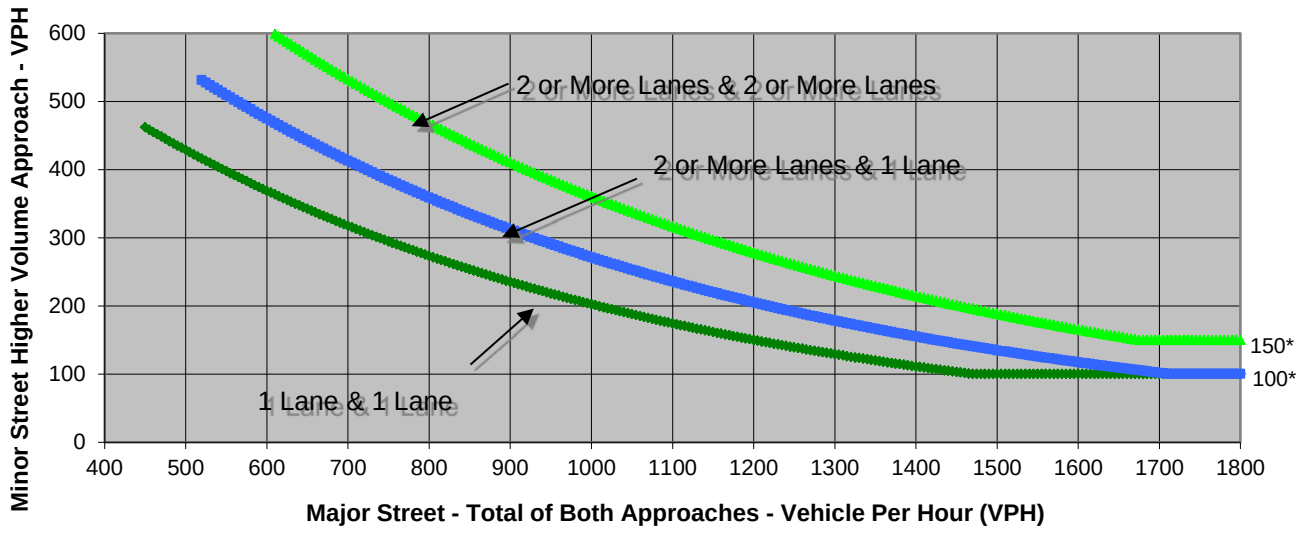
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	3	135	0
Through	0	0	1,075	1,108
Right	0	265	0	43
Total	0	268	1,210	1,151

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street W. Grand Ave	Minor Street Campbell St.	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,361**	**268**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: Mandela Parkway Southbound
Minor Street: 24th Street

Scenario: Cumulative with Connection Conditions
Peak Hour: PM

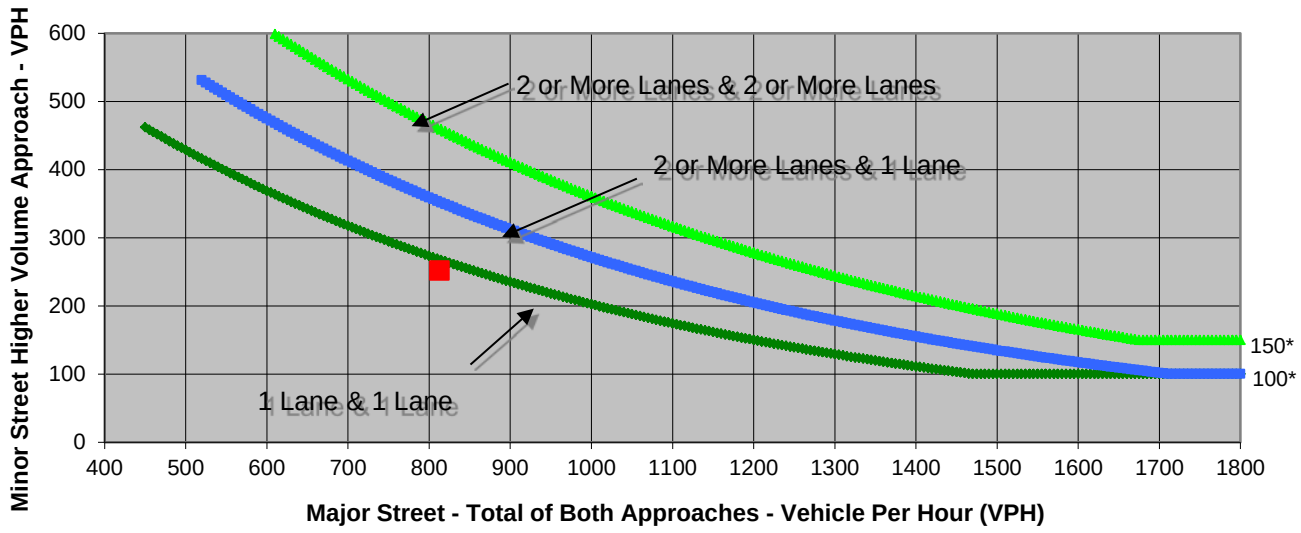
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	252	0
Through	0	813	0	0
Right	0	0	0	0
Total	0	813	252	0

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway Southbound	Minor Street 24th Street	Warrant Met
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**813**	**252**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Cumulative with Connection Conditions		
Peak Hour	PM		

Major Street: Mandela Parkway Southbound
Minor Street: 20th Street

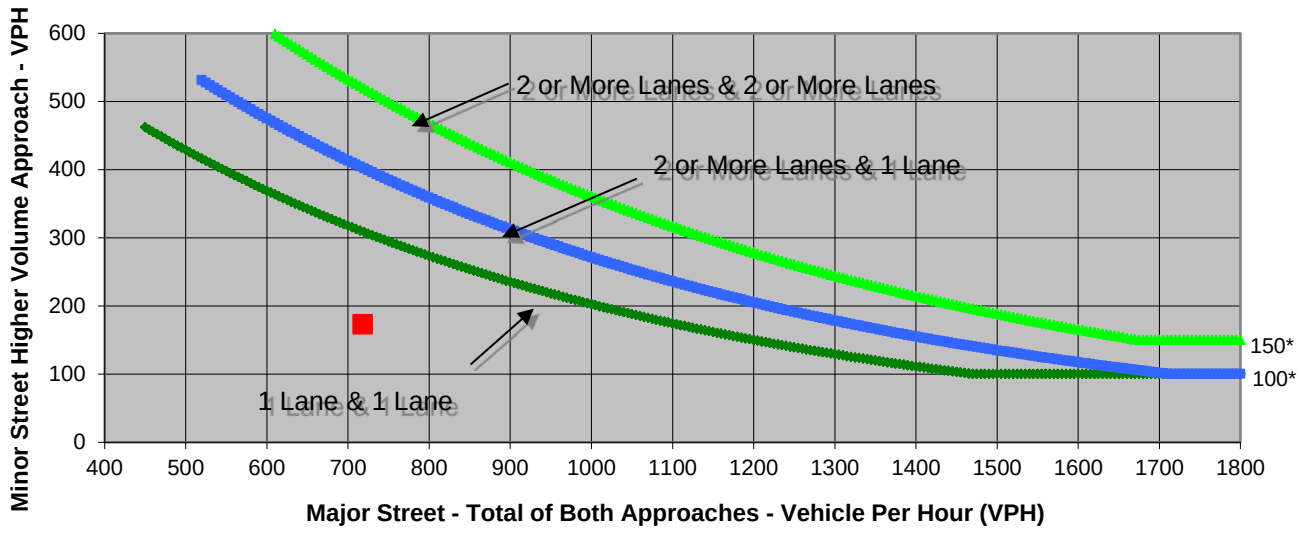
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	10	0	7
Through	0	705	161	2
Right	0	3	12	0
Total	0	718	173	9

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**718**	**173**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: Mandela Parkway
Minor Street: 24th Street

Scenario: Cumulative with Connection Conditions
Peak Hour: PM

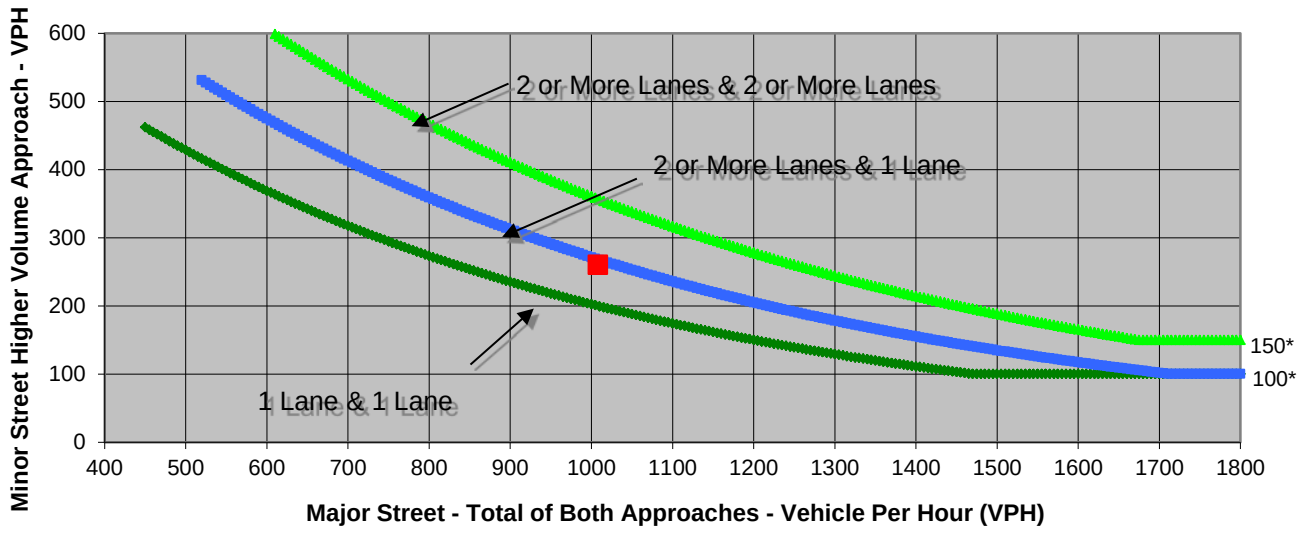
Turn Movement Volumes

	NB	SB	EB	WB
Left	7	0	0	0
Through	1,001	0	0	245
Right	0	0	0	15
Total	1,008	0	0	260

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway	Minor Street 24th Street	Warrant Met
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**1,008**	**260**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: Mandela Parkway Northbound
Minor Street: 20th Street

Scenario: Cumulative with Connection Conditions
Peak Hour: PM

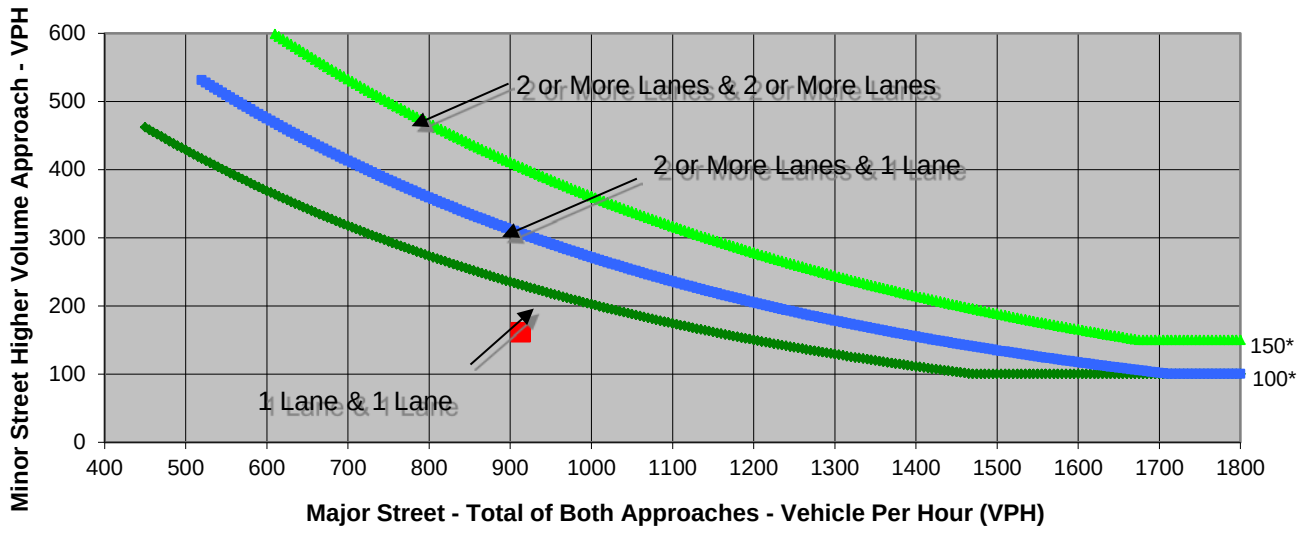
Turn Movement Volumes

	NB	SB	EB	WB
Left	8	0	161	0
Through	902	0	0	2
Right	3	0	0	7
Total	913	0	161	9

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**913**	**161**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Cumulative with Connection Conditions		
Peak Hour	SAT		

Major Street	W. Grand Ave
Minor Street	Campbell St.

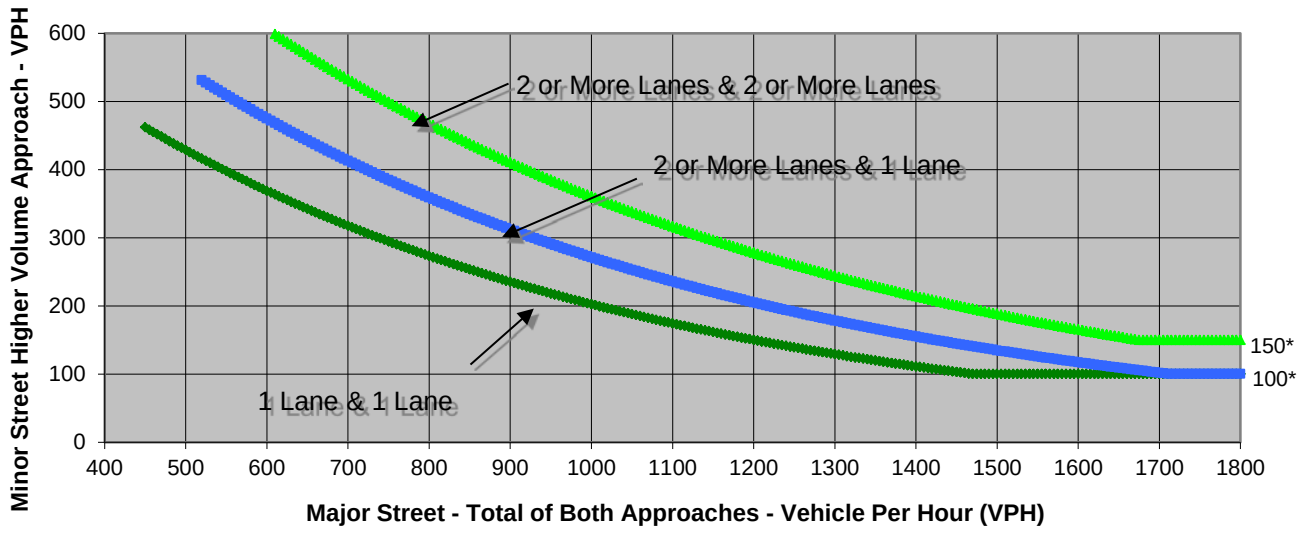
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	5	77	0
Through	0	0	661	1,089
Right	0	205	0	57
Total	0	210	738	1,146

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street W. Grand Ave	Minor Street Campbell St.	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,884**	**210**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Cumulative with Connection Conditions		
Peak Hour	SAT		

Major Street	Mandela Parkway Southbound
Minor Street	24th Street

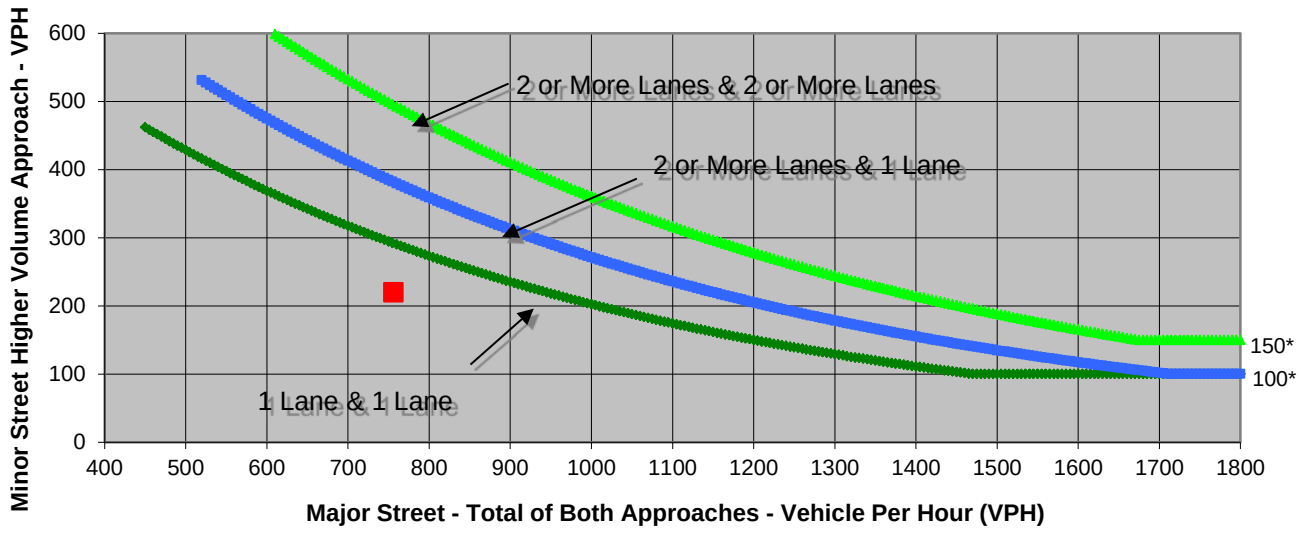
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	220	0
Through	0	756	0	0
Right	0	0	0	0
Total	0	756	220	0

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**756**	**220**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Cumulative with Connection Conditions		
Peak Hour	SAT		

Major Street	Mandela Parkway Southbound
Minor Street	20th Street

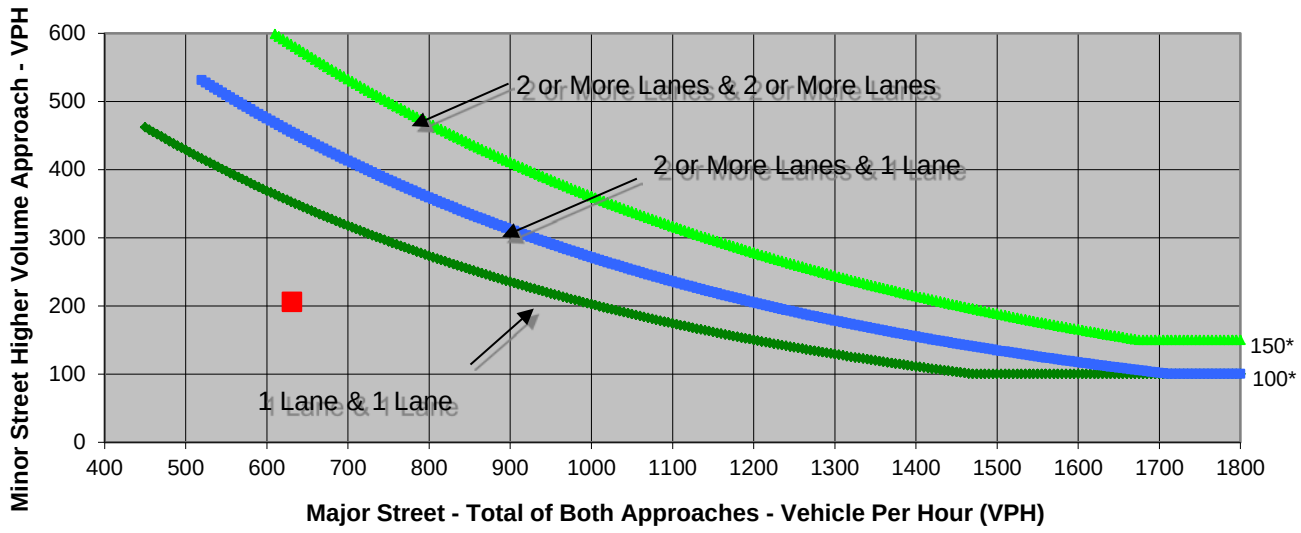
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	17	0	8
Through	0	572	182	0
Right	0	42	24	0
Total	0	631	206	8

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**631**	**206**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: Mandela Parkway
Minor Street: 24th Street

Scenario: Cumulative with Connection Conditions
Peak Hour: SAT

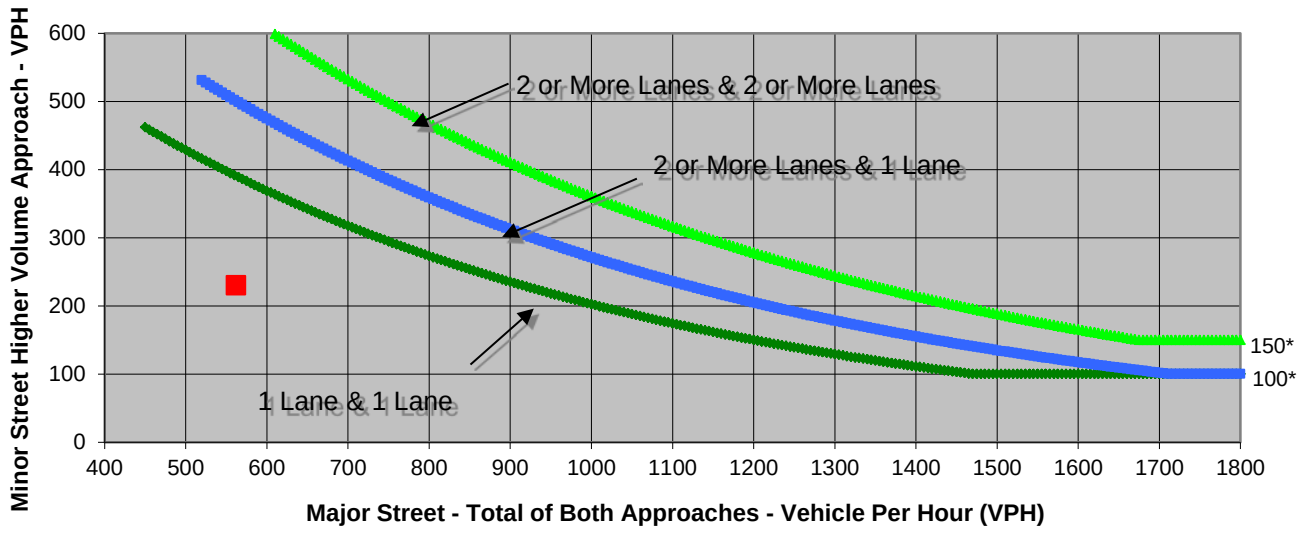
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	0	0
Through	557	0	0	215
Right	0	0	0	15
Total	562	0	0	230

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway	Minor Street 24th Street	Warrant Met
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**562**	**230**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Cumulative with Connection Conditions		
Peak Hour	SAT		
Major Street	Mandela Parkway Northbound		
Minor Street	20th Street		

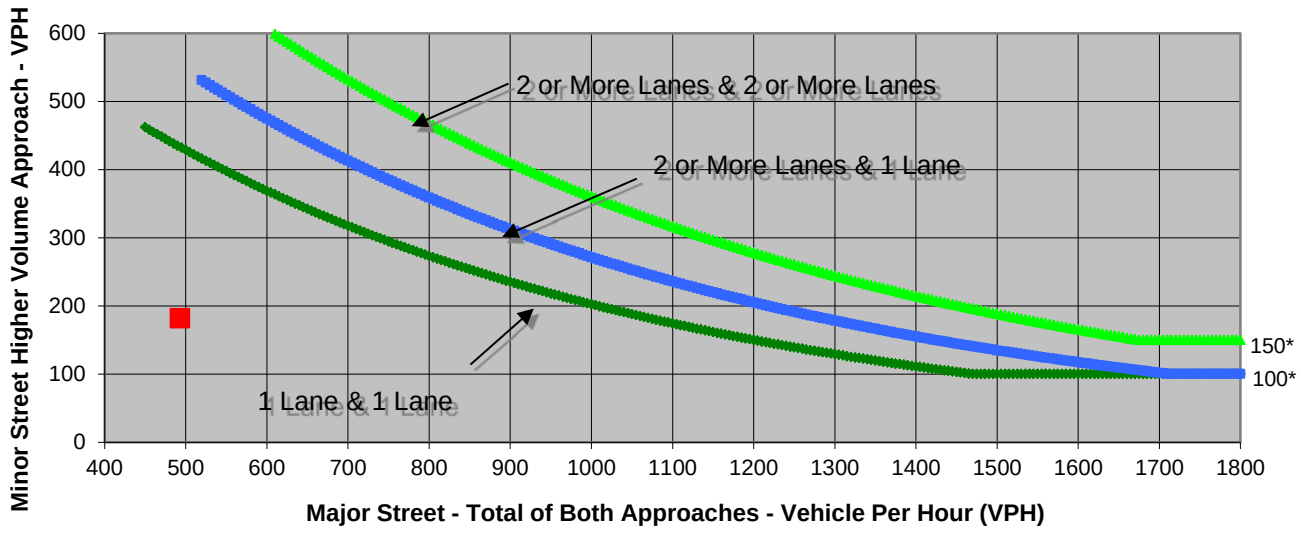
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	182	0
Through	453	0	0	2
Right	35	0	0	0
Total	493	0	182	2

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**493**	**182**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: W. Grand Ave
Minor Street: Campbell St.

Scenario: Cumulative with Connection & Park Conditions
Peak Hour: PM

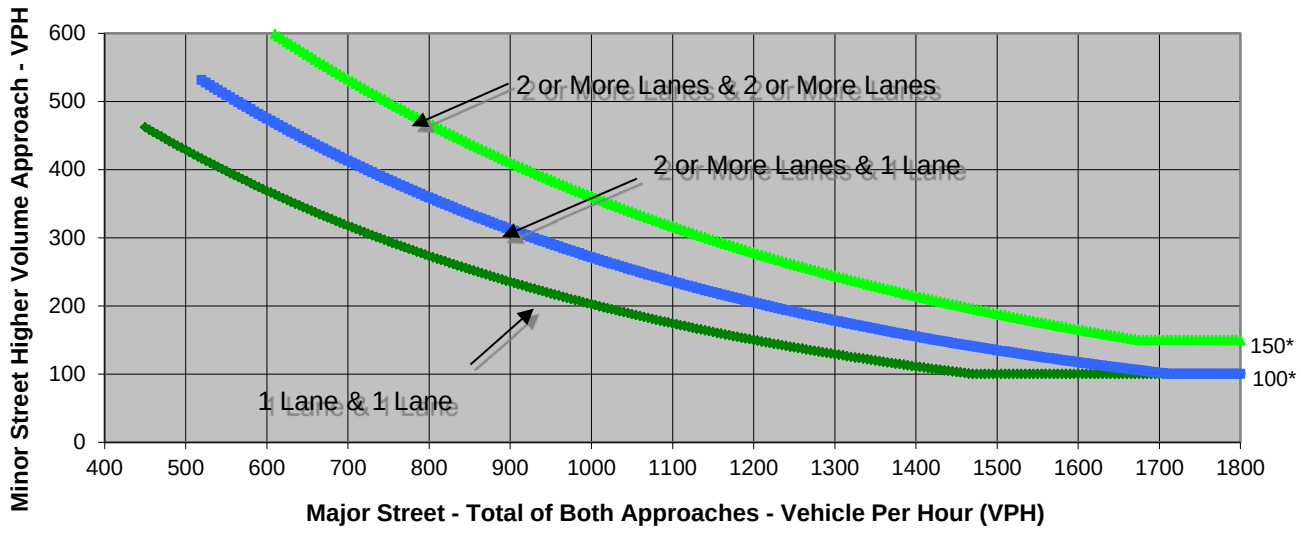
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	3	135	0
Through	0	0	1,115	1,165
Right	0	265	0	43
Total	0	268	1,250	1,208

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street W. Grand Ave	Minor Street Campbell St.	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,458**	**268**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Cumulative with Connection and Park Conditions		
Peak Hour	PM		
Major Street	Mandela Parkway Southbound		
Minor Street	24th Street		

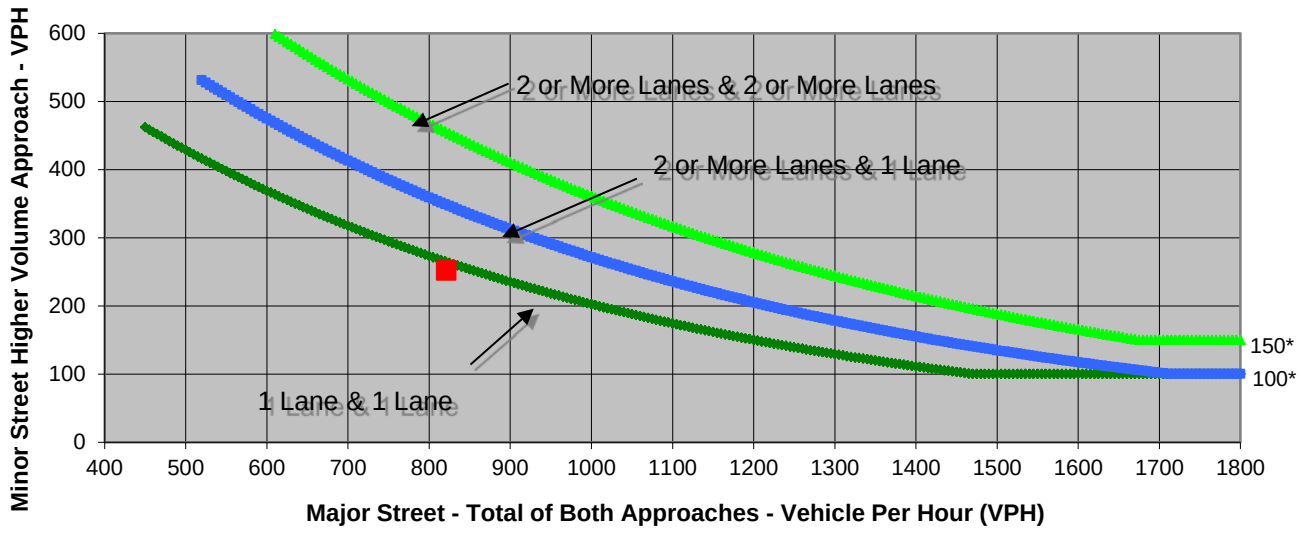
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	252	0
Through	0	821	0	0
Right	0	0	0	0
Total	0	821	252	0

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**821**	**252**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Cumulative with Connection and Park Conditions		
Peak Hour	PM		

Major Street	Mandela Parkway Southbound
Minor Street	20th Street

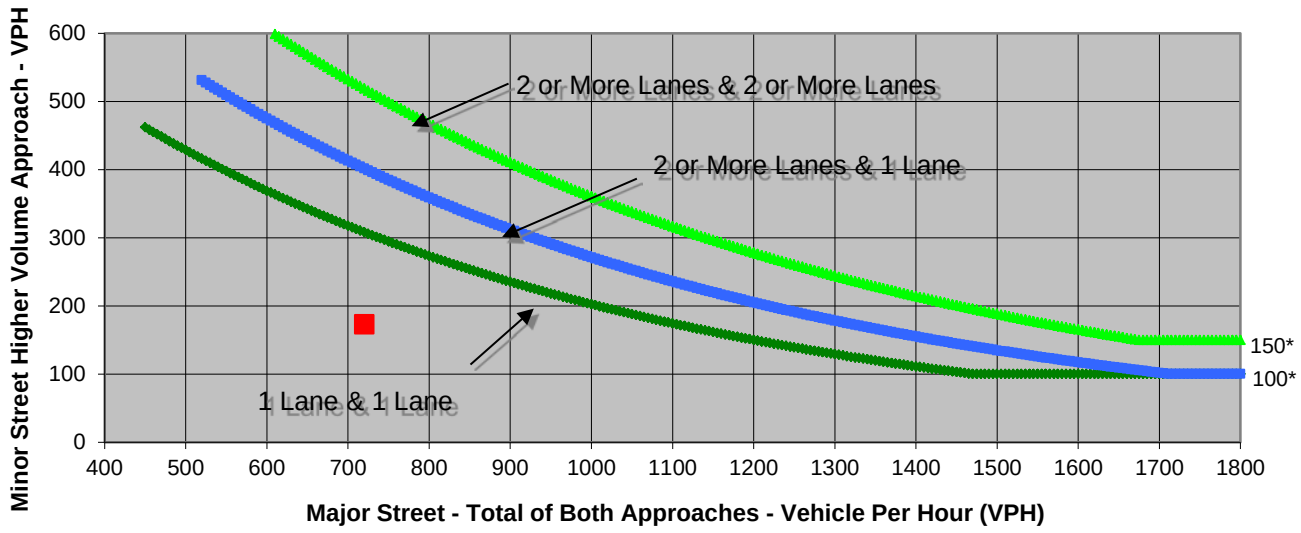
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	10	0	7
Through	0	707	161	2
Right	0	3	12	0
Total	0	720	173	9

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**720**	**173**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: Mandela Parkway
Minor Street: 24th Street

Scenario: Cumulative with Connection and Park Conditions
Peak Hour: PM

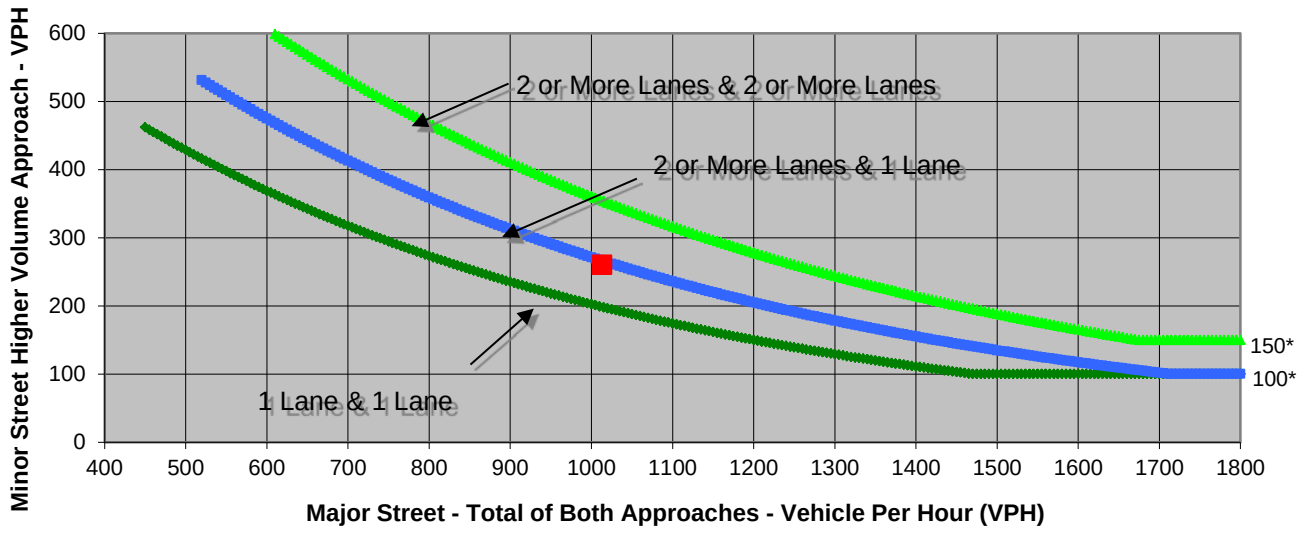
Turn Movement Volumes

	NB	SB	EB	WB
Left	7	0	0	0
Through	1,006	0	0	245
Right	0	0	0	15
Total	1,013	0	0	260

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway	Minor Street 24th Street	Warrant Met
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**1,013**	**260**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1

Project	Gateway Regional Park
Scenario	Cumulative with Connection and Park Conditions
Peak Hour	PM
Major Street	Mandela Parkway Northbound
Minor Street	20th Street

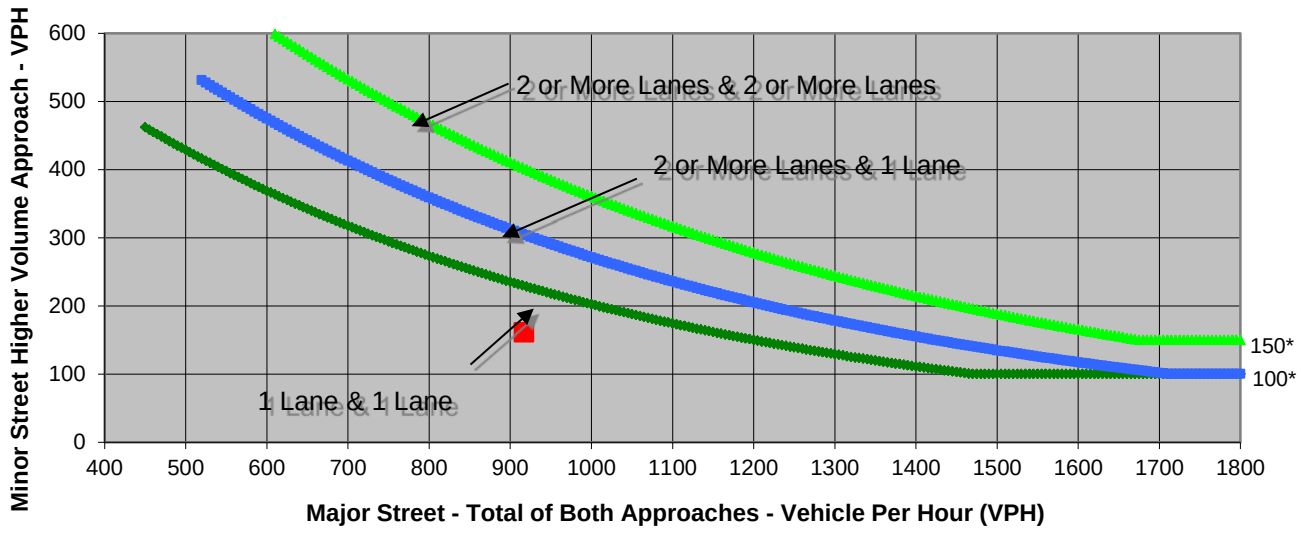
Turn Movement Volumes

	NB	SB	EB	WB
Left	8	0	161	0
Through	906	0	0	2
Right	3	0	0	7
Total	917	0	161	9

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**917**	**161**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: W. Grand Ave
Minor Street: Campbell St.

Scenario: Cumulative with Connection & Park Conditions
Peak Hour: SAT

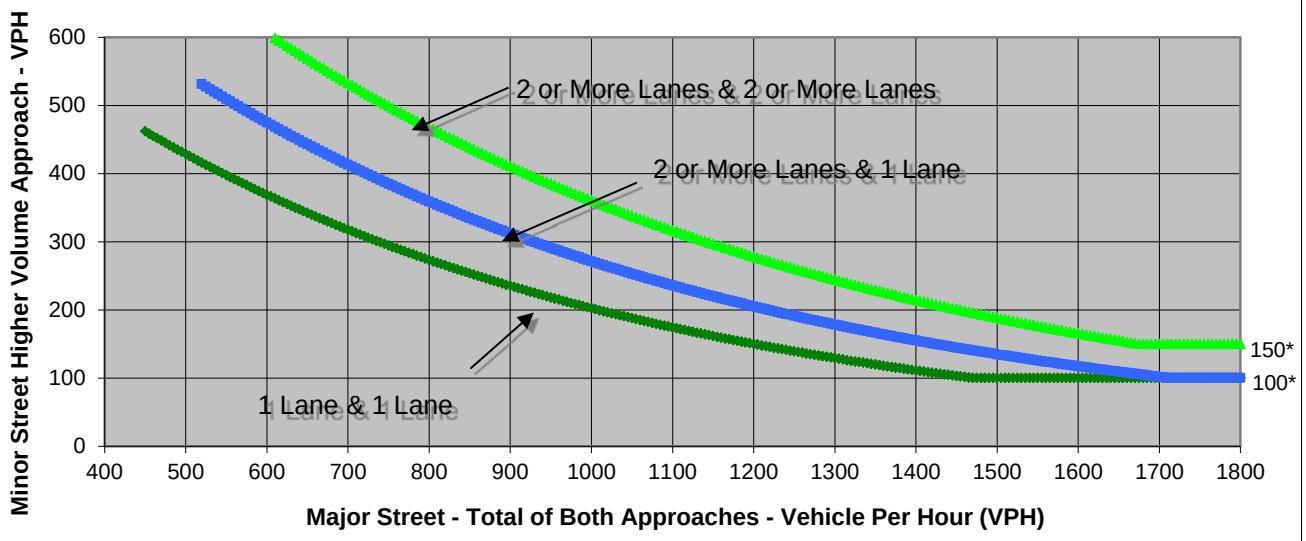
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	5	77	0
Through	0	0	765	1,192
Right	0	205	0	57
Total	0	210	842	1,249

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street W. Grand Ave	Minor Street Campbell St.	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,091**	**210**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Cumulative with Connection and Park Conditions		
Peak Hour	SAT		

Major Street	Mandela Parkway Southbound
Minor Street	24th Street

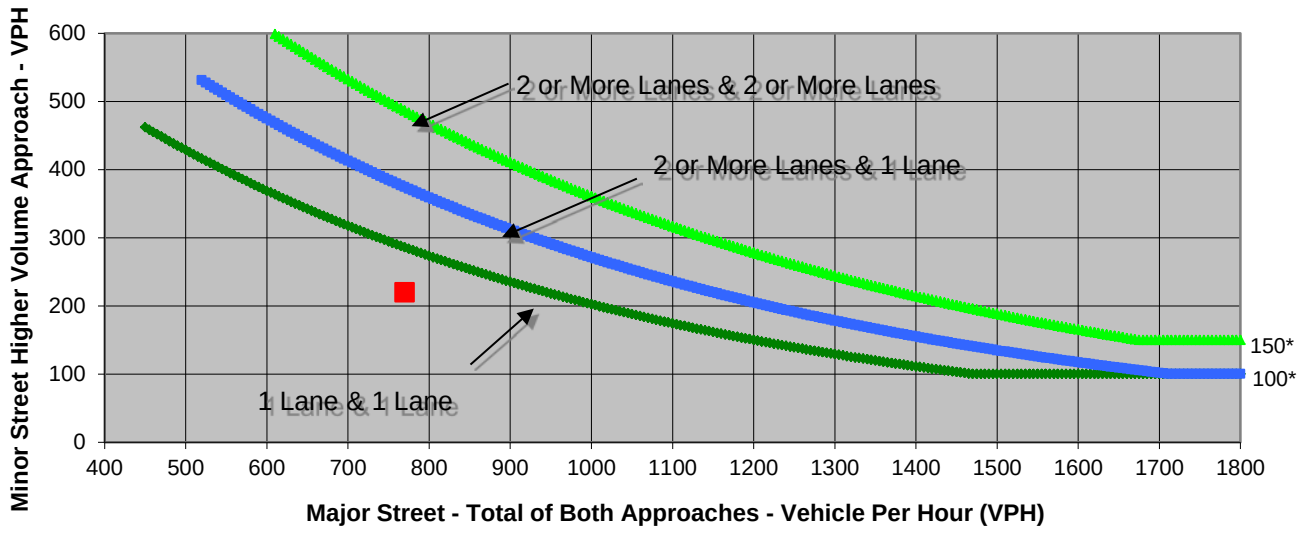
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	220	0
Through	0	770	0	0
Right	0	0	0	0
Total	0	770	220	0

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	24th Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**770**	**220**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: Mandela Parkway Southbound
Minor Street: 20th Street

Scenario: Cumulative with Connection and Park Conditions
Peak Hour: SAT

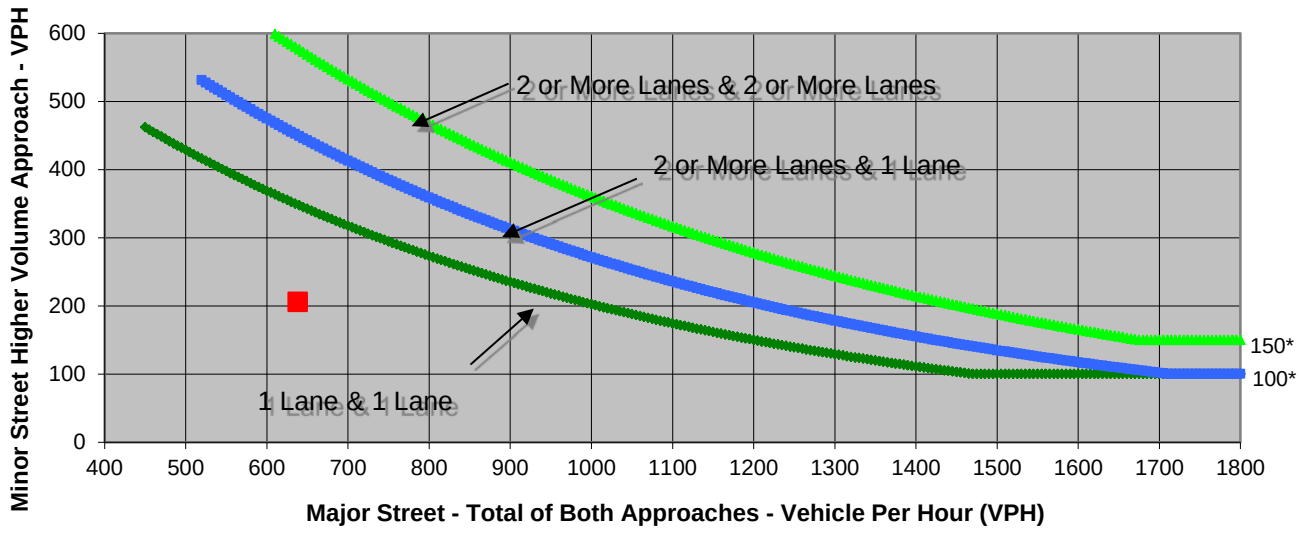
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	42	0	8
Through	0	579	182	0
Right	0	17	24	0
Total	0	638	206	8

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Southbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**638**	**206**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 1 of 1

Project: Gateway Regional Park

Major Street: Mandela Parkway
Minor Street: 24th Street

Scenario: Cumulative with Connection and Park Conditions
Peak Hour: SAT

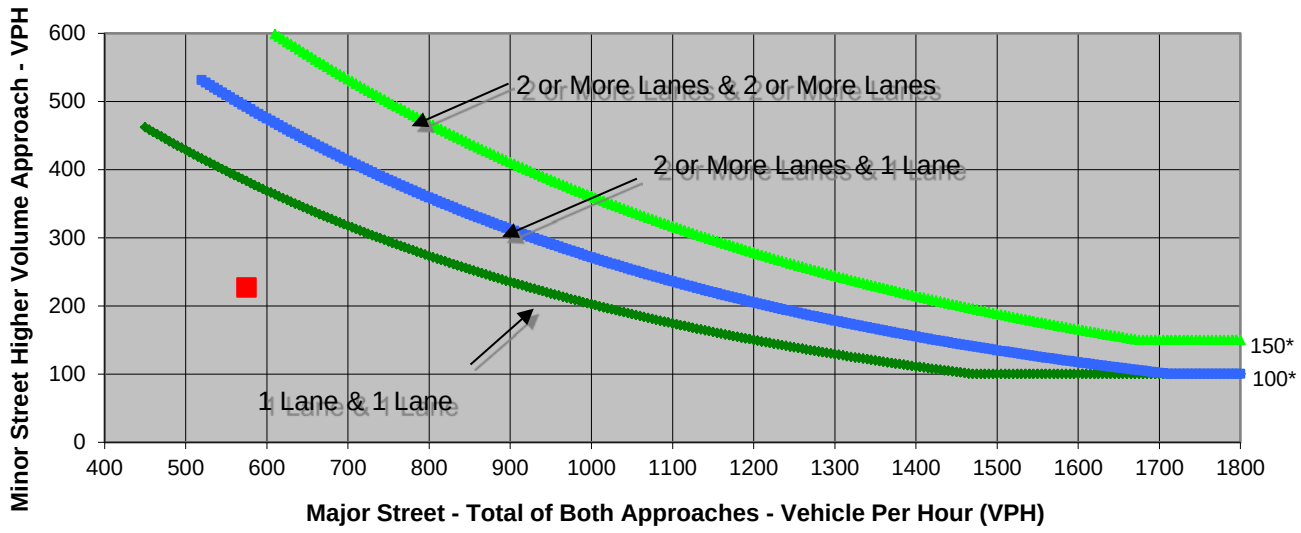
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	0	0
Through	570	0	0	215
Right	0	0	0	12
Total	575	0	0	227

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Mandela Parkway	Minor Street 24th Street	Warrant Met
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**575**	**227**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	1
Project	Gateway Regional Park		
Scenario	Cumulative with Connection and Park Conditions		
Peak Hour	SAT		

Major Street	Mandela Parkway Northbound
Minor Street	20th Street

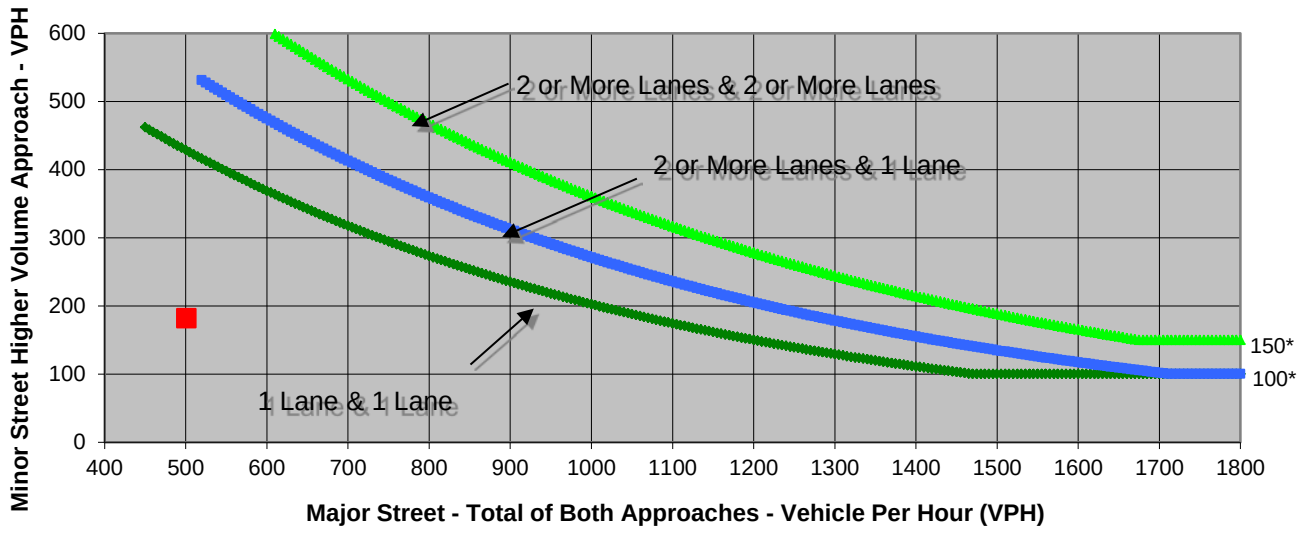
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	0	182	0
Through	461	0	0	2
Right	35	0	0	0
Total	501	0	182	2

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Mandela Parkway Northbound	20th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**501**	**182**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

APPENDIX D: BICYCLE AND PEDESTRIAN FORECASTING METHOD



MEMORANDUM

Date: November 28, 2011

To: Blake Clark, PE and Francis Lo, PE; T.Y. Lin International

From: Brooke DuBose & Matt Goyne; Fehr & Peers

Subject: ***SFOBB West Span Bicycle/Pedestrian/Maintenance Path PSR Project – Forecasting and Traffic Analysis Methodology***

SF10-0477

This memorandum presents our proposed methodology for conducting pedestrian and bicycle forecasts and a traffic analysis for the San Francisco-Oakland Bay Bridge West Span Bicycle/Pedestrian/ Maintenance (BPM) Path.

The methodology for conducting pedestrian and bicycle forecasts for the BPM was previously documented in the memorandum *SFOBB West Span Bicycle/Pedestrian/Maintenance Path PSR Project – Forecasting Methodology*, dated April 12, 2010. **Attachment A** includes Fehr & Peers' responses to comments received from Caltrans. In addition, **Attachment A** includes responses to comments received from Caltrans regarding the October 31, 2011 "Forecasting and Traffic Analysis Methodology" memorandum.

This traffic analysis will include weekday AM and PM and weekend mid-day peak hour intersection analysis at up to five intersections for existing and future conditions. Forecasted traffic to the project staging area will be added to existing and future no project conditions intersection traffic volumes to determine the project's effects.

BICYCLE AND PEDESTRIAN TRAVEL DEMAND FORECASTING

Per our previous conversations, we understand that the team does not expect pedestrian and bicycle forecasts of the facility to substantially affect the proposed width of the path on the bridge. However, forecasts will be used to determine the scope and project elements for vertical circulation. Overall, we expect the product of this effort to be order-of-magnitude bicycle and pedestrian usage forecasts for the subject facility, for purposes of sizing and locating vertical circulation elements.

Bicycle and pedestrian demand forecasts will rely on existing data at other facilities and minimal collection of new data. Other bridges in the Bay Area allow bicycles and pedestrians (Antioch, Carquinez, Dumbarton, and Golden Gate). However, the only one of those bridges that experiences commuter, recreational, and tourism-related usage at relatively high levels is the Golden Gate Bridge. Although we do not expect that tourism-related use for the west span of the Bay Bridge will be as high as the Golden Gate Bridge, we do anticipate that pedestrian and

bicycle volumes near the San Francisco anchorage of the Bay Bridge will experience similar demand. Recreational use for the west span will likely be less on the Bay Bridge compared to the Golden Gate Bridge, while commuter use may be significant in the long-term once the proposed Treasure Island development and the eastern span of the Bay Bridge are complete.

To obtain an order-of-magnitude estimate of bicycle and pedestrian usage on the Bay Bridge, we will:

A. Collect bicycle and pedestrian counts from the "Bicycle Safety Study for the Golden Gate Bridge" report prepared by Alta Planning + Design (April 15, 2011).
B. Coordinate with Caltrans to obtain bicycle and pedestrian counts from other bridges in the Bay Area
C. Coordinate with AC Transit, BART, and Caltrans to obtain data on the use of bicycles on transit and bicycle shuttle service for transbay trips (if available)
D. Review forecasted bicycle demand prepared as a part of plans for proposed development on Treasure Island and in SoMa as well as the proposed expansion of ferry service by the Water Transit Authority (WTA).
E. Compare the data and determine an approximate forecast the Bay Bridge usage, likely within the range between the Golden Gate Bridge observations and counts provided by Caltrans from other sites.

A detailed approach for each task is described below.

Task A. Collect Data at the Golden Gate Bridge

Bicycle and pedestrian counts were collected in August 2010 as a part of the "Bicycle Safety Study for the Golden Gate Bridge" report prepared by Alta Planning + Design (April 15, 2011). These counts identify the weekday and weekend peak hours for pedestrian and bicycle use on the Golden Gate Bridge. These peak hour counts will be used for forecasting the pedestrian and bicycle volumes on the BPM Path. No new pedestrian and bicycle counts will be collected at the Golden Gate Bridge as a part of this study.

Task B. Collect Data from Caltrans

Fehr & Peers will review data collected by Caltrans for bicycle and pedestrian volumes on the other bridges in the Bay Area. It is our understanding that Caltrans has recent data from the Dumbarton Bridge that will assist in our forecasting for the Bay Bridge. We will evaluate Caltrans data and assume all trips are primarily recreational or commuter-related.

Task C. Collect Data from AC Transit, BART, and Caltrans for Transbay Bicycle Service

To evaluate existing transbay bicycle usage, we will collect available data from AC Transit for bus-mounted and under carriage bicycle racks as well as data from Caltrans on the use of transbay bicycle shuttles. We will review existing shuttle schedules and policies for bicycles on buses to assess the current capacity and operations of transbay service. In addition, we will collect available data regarding transbay peak hour bicycle demand on BART. This demand

estimate will include order of magnitude bicycle latent demand, and will be likely be much lower than the bicycle forecasts proposed in Task E.

Task D. Review Plans for Forecasted Future Transbay Bicycle Demand

Fehr & Peers will review plans prepared for proposed developments on Treasure Island and in SoMa (if available) and document bicycle forecast demand for transbay crossings presented in those plans. We will also review WTA plans for projected bicycle demand on future ferry service. We do not propose to do additional analysis regarding ferries or the proposed developments. As noted in Task C, the projected future bicycle demand included in these studies is likely to be much lower than the bicycle forecasts proposed in Task E.

Task E. Compare Data and Forecast Bay Bridge Use

We will compile the data collected on the Golden Gate Bridge, Dumbarton Bridge, and other bridges for which data is available from Caltrans and create a matrix to compare the results based on total volumes, type of use, adjacent land use and population density. We will incorporate relevant data from our work on the Treasure Island Redevelopment project to assist with our analysis.

Given the unique characteristics of the Golden Gate Bridge (GGB) and Bay Bridge (BB) compared to other bridges in the area, we will forecast the combined pedestrian and bicycle volumes on the Bay Bridge with the following approach:

- Volumes near the San Francisco anchorage of BB will be 90-100% of GGB volumes
- Volumes between 500-1000 feet (distance to be determined based on qualitative assessment conducted in Task A) of San Francisco end of BB will be 80-90% of GGB volumes
- Volumes near the Yerba Buena anchorage of BB will be between 60-80% of GGB volumes.

We will review these percentages with the project development team to ensure consensus in our approach. These percentages assume that bicycles on the west span of the Bay Bridge are likely to continue across the bridge to Yerba Buena while many pedestrians will only travel part of the way across before returning to San Francisco, similar to the existing patterns at the Golden Gate Bridge. The forecasts will be critical to appropriately size the proposed connections at each end of the bridge which include ramps to the Rincon Hill area, a path to the Transbay Terminal in San Francisco, as well as the elevators/stairs at Pier W-1 at the Embarcadero.

There will also be a qualitative discussion of the potential for modal shift for transbay travel.

We recognize that this is a relatively simplistic approach; however, based on the unique nature of the project, the variable nature of some of the forecasting assumptions, and the limited effects the forecasting may have on the design of the path width in general, we believe that this is an appropriate level of study for the current phase of project development. As the project is further developed and as it enters the environmental review and project approval phase, additional work may be required.

The forecasted volumes will provide a conservative assessment of the volumes at the landing areas to the bridge. They will not be used as a part of the purpose or need statement for the project.

VEHICULAR TRAFFIC ANALYSIS

Fehr & Peers proposes to study vehicle traffic at the following five intersections, as shown on **Figure 1**:

- Harrison Street / The Embarcadero
- Harrison Street / Spear Street
- Harrison Street / Fremont Street
- Folsom Street / Fremont Street
- Folsom Street / 1st Street

Vehicular access routes to and from the elevator staging area include Harrison Street, Folsom Street, Fremont Street, 1st Street, Bryant Street, and The Embarcadero. The above study intersections were chosen as they represent key gateways into the adjacent Rincon Hill neighborhood and will likely serve the highest amount of project-generated vehicle traffic on critical movements. The above intersections will be analyzed under existing, existing plus project, and cumulative plus project conditions to determine the potential effects of the proposed BPM. In addition, a qualitative discussion regarding the pedestrian and bicycle conditions at these intersections and on adjacent study area roadways will be included for existing and plus project conditions.

Task A. Existing Conditions

Fehr & Peers will collect existing weekday AM and PM peak period (7 to 9 AM and 4 to 6 PM) and Saturday peak period (1 to 3 PM) intersection vehicle turning movement volumes at the five study intersections. During the vehicle counts, we will also collect pedestrian and bicycle counts at the study intersections. We will use these volumes to evaluate existing peak hour intersection vehicle levels of service. We will also qualitatively describe existing pedestrian, bicycle, and transit circulation and amenities in the area. This will include observing and identifying existing amenities the intersection of Spear Street and The Embarcadero, which currently has low levels of pedestrian and bicycle activity but would likely be an important connection to the BPM in the future.

Task B. Forecast Vehicular Traffic Generation

As previously discussed, we will use the Golden Gate Bridge as a proxy for roughly approximating the potential usage of Bay Bridge bicycle and pedestrian facilities, as both bridges are likely to offer scenic views that attract relatively high levels of tourism, in addition to commuter traffic. Fehr & Peers will collect peak period vehicular traffic counts at the parking facilities adjacent to each end of the Golden Gate Bridge as shown in **Table 1**.



N

Not to Scale

FEHR & PEERS

Proposed Study Locations

Figure 1

TABLE 1
GOLDEN GATE BRIDGE TRAFFIC COUNTS

Location	Weekday AM Peak Period (7 to 9 AM)	Weekday PM Peak Period (4 to 6 PM)	Weekend Mid-Day (1 to 3PM)
South End of Golden Gate Bridge	New Counts	2010 Counts[1]	2010 Counts[1]
North End of Golden Gate Bridge	New Counts	New Counts	New Counts

Notes:

1. Existing weekday PM and weekend mid-day peak period traffic counts were collected at the southern parking lot for the *Doyle Drive Replacement Project Merchant Road & Toll Plaza East Study* (January 2011, ARUP) in August 2010.

Source: Fehr & Peers, October 2011

We recognize that some of the vehicular traffic using the Golden Gate Bridge parking areas is generated simply by the scenic views from the parking lot itself, making a direct comparison between parking areas adjacent to the Golden Gate Bridge and those proposed for staging at the Bay Bridge difficult. We will conduct site observations during the weekend mid-day peak period (the busiest time period) to determine the percent of vehicles that park in the parking lots and then walk or bicycle on the bridge. This portion of the vehicular traffic generated at the Golden Gate Bridge lots will be assumed to be the vehicular demand associated with the Bridge's bicycle and pedestrian facilities. We will make a similar assumption for the proposed Bay Bridge facility to determine weekday AM and PM peak hour and Saturday peak hour vehicle traffic generation, although we propose to work with T.Y. Lin and Caltrans to determine whether some adjustments may be warranted. We recognize that availability of convenient parking at the Bay Bridge and the Golden Gate Bridge may not be similar, but for conservative measure the parking supply at the Bay Bridge will not limit the trip generation to the site.

Task C. Vehicular Trip Distribution and Assignment

Based on the results of Tasks A and B and the proposed staging area layout, we will determine the directions of approach and departure for new vehicle traffic, specifically the changes to individual intersection turning movement volumes during the evaluation periods (weekday AM and PM peak hours, and Saturday peak hour).

Task D. Existing Plus Project Conditions

We will add the forecasted net increase in peak hour vehicle traffic to the existing conditions traffic volumes to forecast "existing plus project" intersection traffic volumes. We will calculate intersection vehicle levels of service for the weekday AM and PM peak hours and Saturday peak hour. We will assume that the near-term proposed bicycle infrastructure is in place as proposed in the San Francisco Bike Plan (2009). This includes Class II bicycle lanes on Fremont Street and on Beale Street south of Folsom Street. If the additional vehicle traffic (and modified roadway network) results in unacceptable traffic conditions, based on the City of San Francisco criteria for identifying traffic impacts, we will identify appropriate improvements, if feasible and consistent with the City's "transit first" policies. It should be noted that the traffic analysis and improvement recommendations are not intended for use in environmental clearance for the

proposed project, but are rather for preliminary planning purposes. Future environmental analysis, if required, may require substantially more analysis than included in this scope.

Task E. Future Conditions

A number of studies have been conducted in the area, including the Transit Center District Plan, have projected future conditions (year 2030) vehicle traffic volumes. We will use growth factors developed from these studies to forecast future conditions intersection vehicle traffic volumes for the weekday AM and PM peak hours. Saturday peak hour vehicle traffic forecasts will be determined by applying the existing ratio of Saturday peak hour vehicle traffic to weekday PM peak hour vehicle traffic to future weekday PM peak hour forecasts. Note that some intersections in this study may not have been previously analyzed, so this task may involve applying growth factors developed at other downtown intersections to the study intersections for this analysis. This is an adequate approach for this planning-level study; however, more detailed forecasts may be necessary later in the PSR process and future environmental analysis.

We will conduct future conditions intersection vehicle level of service analysis at the five study intersections and identify future operating conditions. We will recommend improvements to address long-term deficiencies, if any.

Appendix I

Shoreline Treatments Assessment

CH2M HILL
155 Grand Avenue
Suite 800
Oakland, CA 94612
Tel 510.251.2426
Fax 510.622.9000

Technical Memorandum

Project	Gateway Park Project Approval/Environmental Document (PA/ED)	**Date**	May 22, 2015
Ref	Shoreline Treatments Assessment and Cost Estimate		
From	Claudio Fassardi, James Gorham and Anthony Chemali – CH2M HILL		
To	Eva Lillie – TY LIN		

This technical memorandum (TM) describes an assessment of shoreline treatments and a kayak launch for the Gateway Park project, including preliminary cost estimates for construction and engineering. This TM is a revision of the TM submitted on June 7, 2013, and incorporates a revised assessment of the Concept Plan developed by EinwillerKuehl Landscape Architecture (EK) dated October 2014.

The assessment was performed in a cursory manner given that, at this time, only a conceptual plan has been developed. More detailed analyses and assessments are recommended as the design evolves from conceptual to final. Cost estimates are preliminary and intended for budgetary purposes only, and assume no contaminated sediments exist at the site.

1 Introduction

Located along the East Bay waterfront within the City of Oakland, the Gateway Park will be the site where the new Bay Bridge east span connecting Yerba Buena Island and Oakland touches down to land. The expanse of the park includes the area where the bridge touches down as well as the area under the bridge. The site is bordered by the San Francisco Bay to the north, west and south, and by the City of Oakland to the east.

Figure 1 shows a concept layout of the various shoreline treatments and structures proposed for the park, adapted from EK (2014). The concept includes a boardwalk and an upgrade of the existing revetment on the north shore; a seawall and stairs at the west end; a riprap revetment with a vegetated bench along the south shore; and a beach including a kayak launch, a stone and concrete terrace, and a seawall at the east end.

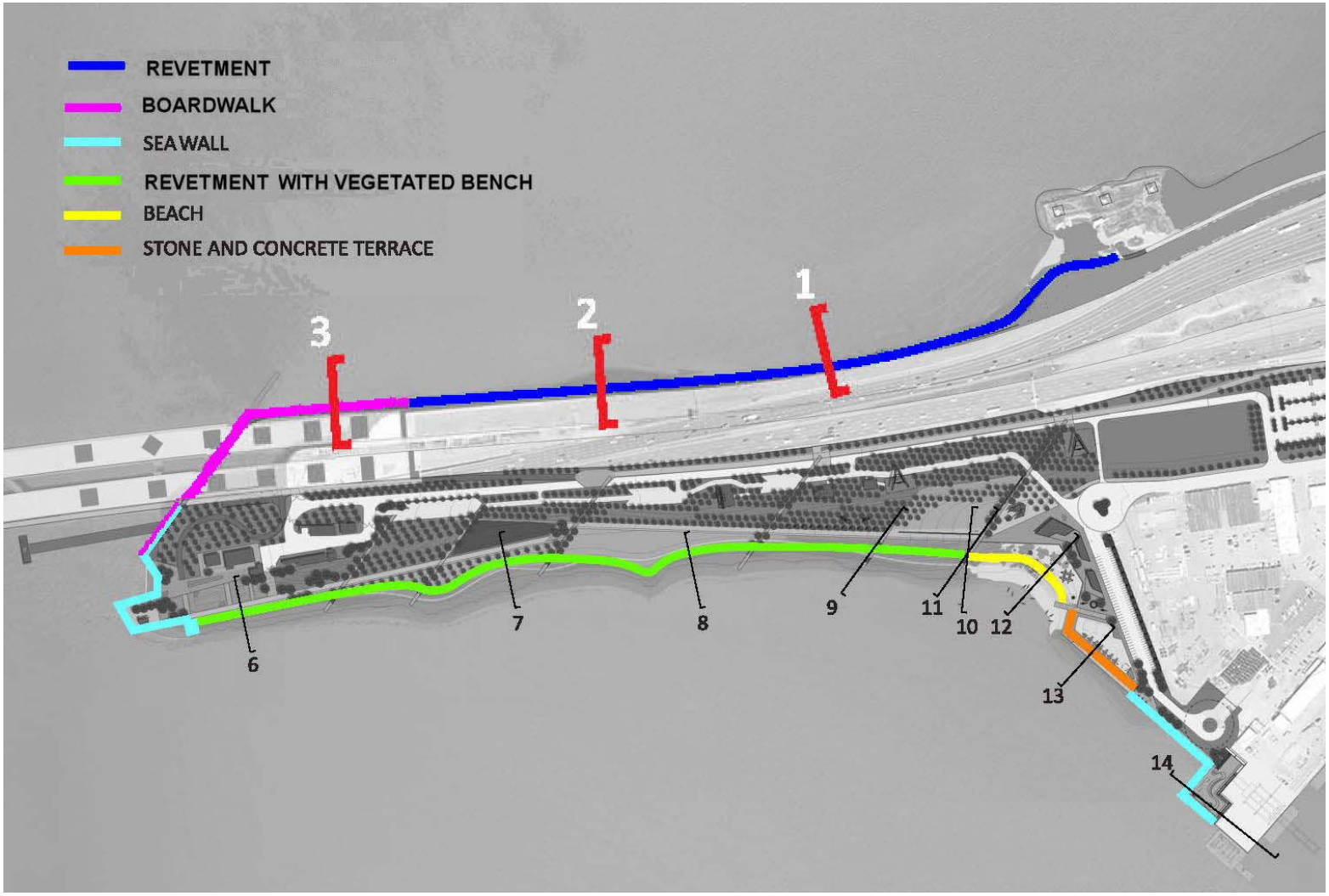


Figure 1. Gateway Park shoreline treatments, adapted from EK (2014).

2 Assessment of Shoreline Treatments

2.1 North Shore Revetment

Figure 2 shows cross sections (Sections 1 and 2) of the proposed revetment along the north shore of Gateway Park. The proposed revetment consists of riprap to be overlaid on the existing riprap revetment maintaining the existing toe location. In other words, an additional armor layer would be added. This would result in a steeper 1v:2h slope from the existing 1v:3h (Caltrans, 2001), and will provide additional area at the crest to include a walkway.

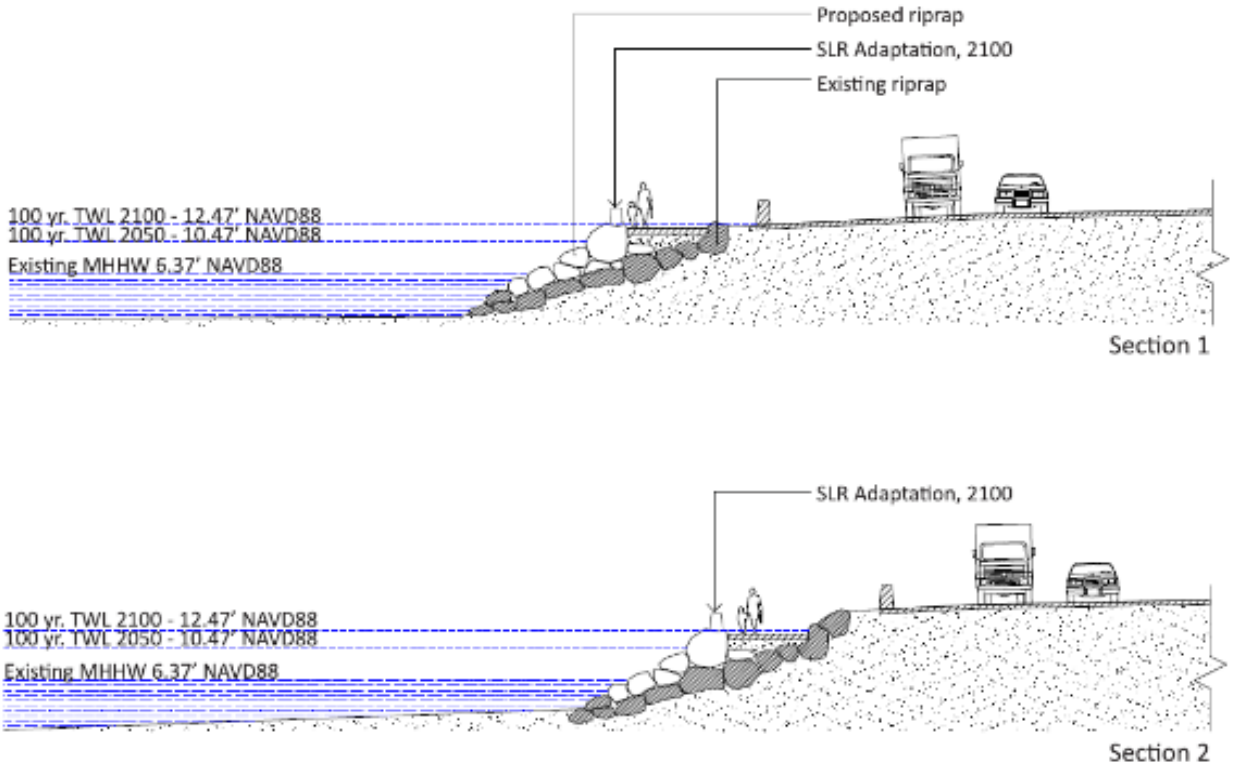


Figure 2. North shore revetment (EK, 2014)

At an elevation of 12.47 feet NAVD88, the proposed revetment would be sufficiently high to keep wave overtopping discharges within acceptable limits in mean higher high water level (MHHW), storm waves and current sea level conditions. While water levels higher than the MHHW can occur (e.g. Highest Astronomical Tide (HAT), 100-year Total Water Level (TWL), etc.), these are events of short duration, in the order of minutes or a few hours, compared to the duration of storm waves and surges which can last several hours or days. The joint occurrence of these events, which would result in a relatively low revetment freeboard and high overtopping, would be rare and with a low probability. For this reason and due to the cursory nature of the assessment presented herein the

MHHW, which is the average of the higher high water elevations of each tidal day, was used as representative of high water levels.

In a 6.37-foot NAVD88 MHHW condition for the current sea level, the 12.47 feet NAVD88 revetment crest elevation would result in a 6.10-foot revetment freeboard. Four-foot, 3-second storm waves (CH2M HILL, 2014a) running on the proposed 1v:2h riprap revetment slope would produce a mean overtopping discharge of 5 liter/sec/m (Eurotop, 2015) which is lower than the minimum mean overtopping discharge guidelines by the USACE (2006) of 50 l/m/sec and 200 l/m/sec to prevent damage on a unpaved and paved promenades, respectively.

For an assumed 50-year design life of the park, a 1-foot sea level rise (SLR) was selected for the medium (A1B) National Research Council (NRC, 2012) scenario due to climate change by 2050 (CH2M HILL, 2014b). For this SLR scenario, MHHW levels by 2050 would be 6.37 + 1 = 7.37 feet NAVD88, which would result in a proposed revetment freeboard of 12.47 – 7.37 = 5.10 feet NAVD88 and an 11 l/m/sec mean overtopping discharge (Eurotop, 2015). This discharge is considered acceptable under the USACE (2006) guidelines.

The armor stone size and weight for the proposed revetment armor layer was calculated using the Van der Meer formulae for the following design parameters:

- significant wave height (H_s) = 4 feet
- peak period (T_p) = 3 seconds
- storm duration = 6 hours
- stone density = 168 lbs/feet^3
- slope = 1v:2h
- damage level = 2 (start of damage equivalent to 5% of stones displaced)
- impermeable core (soil protected with geotextile)

For the design parameters listed above, and on a preliminary basis, the recommended armor stone size and weight are nominal diameter (D_{n50}) = 1.6 feet and nominal weight (W_{50}) = 682 lbs.

2.2 Boardwalk

Because the boardwalk along the north shore is not a shoreline treatment, it was not considered in this assessment.

2.3 West End Seawall and Stairs

Figure 3 shows a rendered view of the proposed shoreline structures at the west end. These consist of a concrete sheet pile seawall along the shoreline, interrupted by stairs to provide public access to the water edge. The proposed structures are considered very suitable given that the seawall would provide the maximum park area and the stairs public access to the water edge at this prime location. Additional access is provided from the top of the stairs to the bottom by means of ramps on both sides.



Figure 3. Seawall and stairs at Gateway Park west end.

It is noted that no ground elevation was provided by EK (2014) for the west end area of Gateway Park and that guidelines provided in CH2M HILL (2014b) are recommended to prevent flooding of the park in extreme SLR conditions. In addition, the bottom of the stairs should be located at an elevation that would prevent the periodic wetting and drying of the lower steps due to tide- and storm-induced water level changes and wave overtopping. In these conditions, the lower steps could accumulate mud and debris which, in conjunction with wave overtopping, will represent a hazard for the public.

2.4 South Shore Revetment with Vegetated Bench

The south shore is approximately 2,500 feet long, from the southern end of the proposed seawall at the west end to the proposed beach at the east end. For approximately the full length of this shoreline, a riprap revetment with a vegetated bench is contemplated for natural tidal marsh habitat establishment and erosion protection, with the exception of areas marked as Sections 9 and 11 in Figure 1 where a transition to the beach is proposed. Figure 4 to Figure 9 show cross sections and

water levels for Sections 6, 7 and 8, for the current sea level and the 2050 SLR scenarios. The riprap revetment is proposed to approximately the MHHW elevation and below the vegetated bench. The proposed crest elevation of the revetment at the MHHW is considered adequate to limit the effect of waves on the vegetated bench, but also to limit the accumulation of floating debris on the bench that could potentially be transported by the southwesterly wind and wind-waves across the bay.

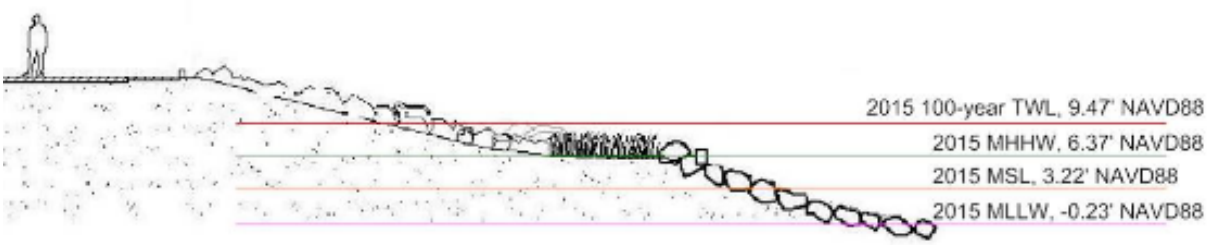


Figure 4. Section 6 cross section and water levels for current sea level scenario.

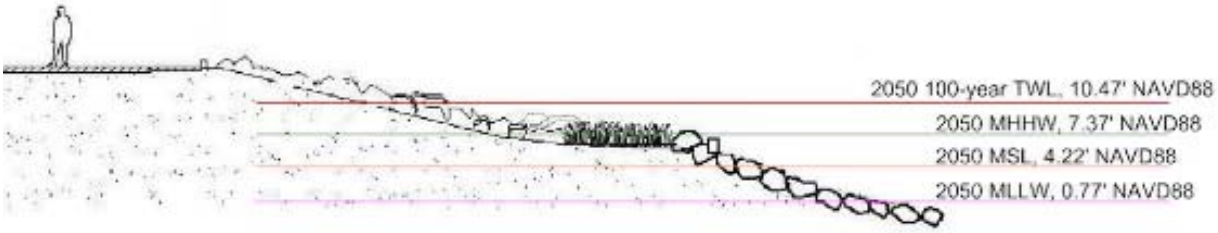


Figure 5. Section 6 cross section and water levels for 2050 SLR scenario.

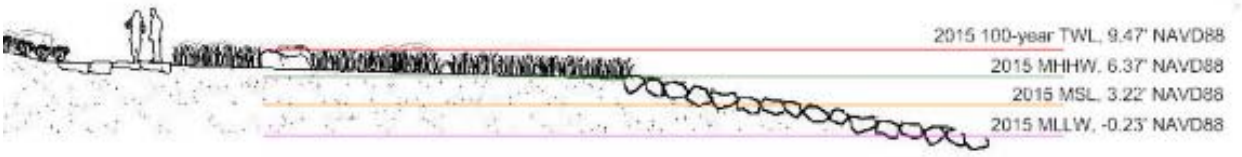


Figure 6. Section 7 cross section and water levels for current sea level scenario.

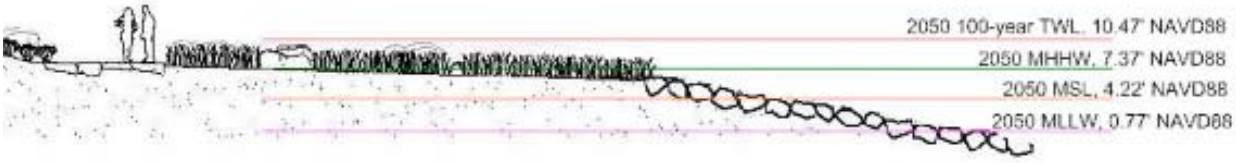


Figure 7. Section 7 cross section and water levels for 2050 SLR scenario.

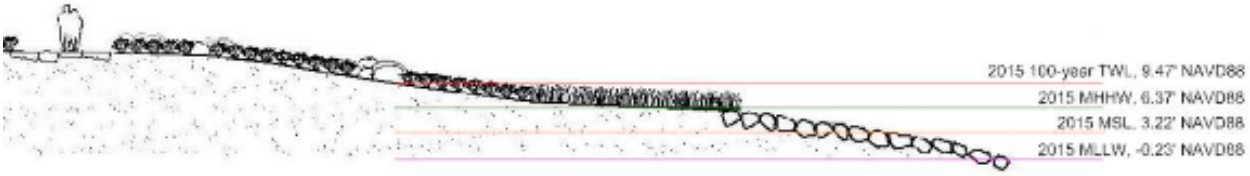


Figure 8. Section 8 cross section and water levels for current sea level scenario.

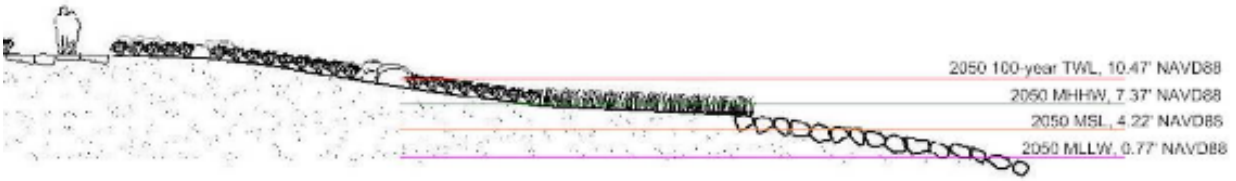


Figure 9. Section 8 cross section and water levels for 2050 SLR scenario.

The assessment of the proposed sections included an analysis of their feasibility and the definition of appropriate planting zones and plant palettes (i.e. what species could grow and where).

San Francisco Bay shores are typically subjected to wind and wave erosion, and revetments are installed to limit erosion and maintain slopes. Where vegetation is anticipated to provide the primary protection for erosion, maximum slopes (gradient) of 1v:15h are normally considered necessary to attenuate wind and wave energy, and provide for the establishment of vegetation.

The south shore of Gateway Park is well protected and exposed to light winds and a mild wave climate generated by wind within San Francisco Bay. Typical wind is westerly 0 to 10-knot and typical wind-wave conditions are short 1 to 2-second waves, less than 1-foot high (CH2M HILL, 2014a). The reduced gradient benches proposed for Sections 6, 7 and 8, for the expected relatively mild wave conditions, appear suitable and the establishment of a band of tidal marsh vegetation along the south shore would be feasible. This approach has successfully created tidal marsh habitat in a number of other locations within San Francisco Bay (see PWA, 2004). Benches for a band of tidal marsh are typically above rock slopes and with gradients of less than 1v:15h.

Figure 10 shows marsh zones in an ideal tidal marsh. Slopes are normally very gentle to flat (e.g. 1v:20h), except along tidal creeks, where banks may be steeper. Unvegetated mudflat can be expected in the lowest intertidal zone, above mean lower low water (MLLW) and mean sea level (MSL). Low marsh dominated by chordgrass (*Spartina foliosa*) typically establishes between MSL and mean high water (MHW). Middle marsh establishes between MHW and MHHW and may be dominated by various species of pickleweed (*Salicornia* spp.). High marsh establishes between MHHW and HAT, and may be dominated by various herbaceous salt-tolerant species including alkali heath (*Frankenia salina*) or saltgrass (*Distichlis spicata*).

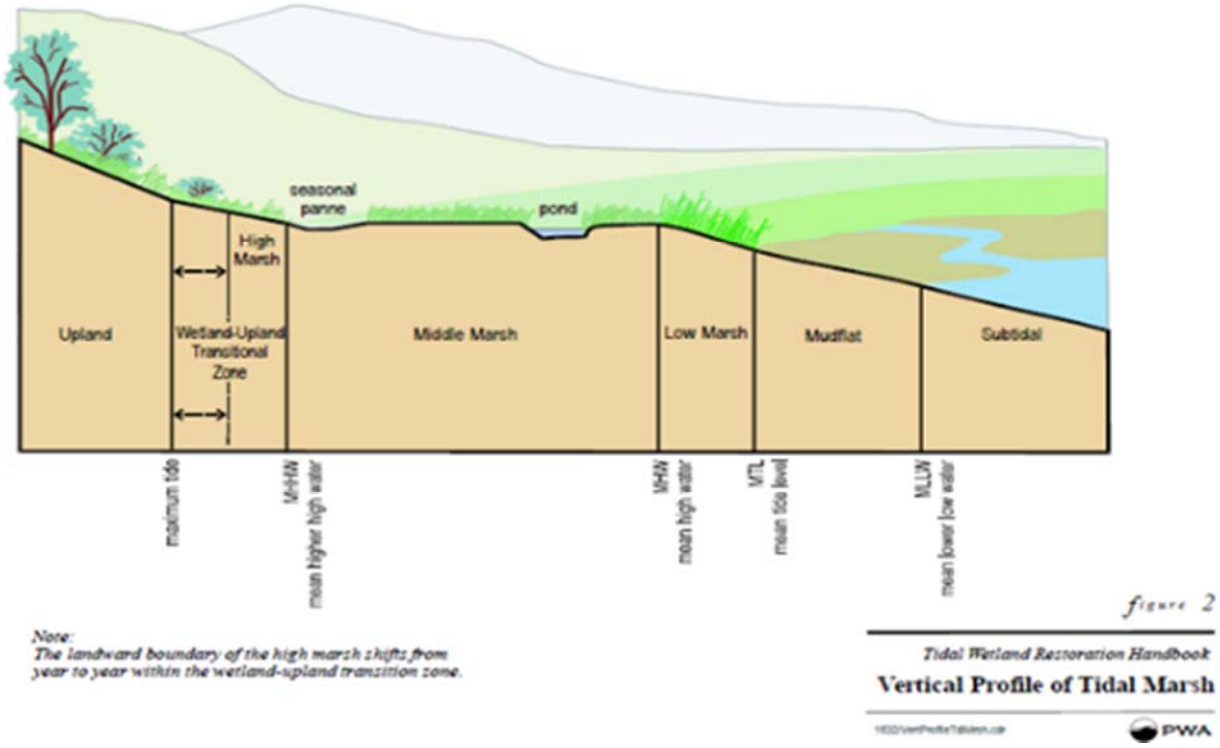


Figure 10. Tidal marsh profile and zonation (PWA, 2004).

2.4.1 Vegetated Bench

Table 1 lists the feasible species for Sections 6, 7 and 8 considering tidal datums, water levels, percent of time emerged/submerged and guidelines provided by Zedler (2001), PWA (2004) and the San Francisco Bay Conservation and Development Commission (BCDC, 2007). Percentage of time emerged/submerged was estimated based on 14 years (2000 to 2013) of water level measurements at the NOAA tide gage (9752695) in nearby Alameda.

At Section 6, vegetation is proposed on a low gradient bench which is approximately at and slightly above MHHW, representing the high middle marsh and high marsh zone. Feasible species appropriate for this section are listed in Table 1, and would consist of a mix of pickleweeds typical in middle marsh areas, and other herbaceous species associated with high marsh areas.

At Section 7, a broader low gradient vegetated bench is proposed, similarly situated above the riprap revetment, and located at or above MHHW. Feasible species for this section are similar to those for Section 6 and listed in Table 1.

At Section 8, the gradient of the proposed vegetated bench is steeper than those at Sections 6 and 7, extending from just below MHHW up to 2 to 3 feet above MHHW. The riprap revetment is situated below the vegetated bench. Feasible species for Section 8 would range from middle marsh species to upper marsh species including some plants in the marsh-upland transition zone such as saltgrass and alkali heath. For the uppermost portions of the site, upland plants are appropriate, including dwarf coyotebush or beach saltbush. Feasible species for Section 8 are listed in Table 1.

Table 1. Feasible species for Gateway Park south shore vegetated benches.

Zones	Tidal Datums (feet, NAVD88)	Water Level (feet, NAVD 88)	% of Time Emerged	% of Time Submerged	*Spartina foliosa* Cordgrass	*Salicornia depressa* Common Pickleweed	*Triglochin concinna* Arrow-Grass	*Jaumea carnosa* Saltmarsh Daisy	*Limonium californicum* Sea Lavender	*Frankenia salina* Alkali Heath	*Cressa truxillensis* Alkali Weed	*Grindelia stricta var. angustifolia* Grindelia	*Baccharis glutinosa* Marsh Baccharis	*Salicornia pacifica* Pickleweed	*Heliotropium curassavicum* Seaside Heliotrope	*Suaeda californica* Horned Sea-Blite	*Distichlis spicata* Salt Grass	*Arthrocnemum subterminale* Glasswort	*Baccharis pilularis var. pilularis* Dwarf Coyotebush	*Atriplex leucophylla* Beach Saltbush
Low Marsh	MSL (3.22)	3	57.58	42.42	RIPRAP REVETMENT															
		4	75.55	24.45																
	MHW (5.75)	5	90.64	9.36																
Middle Marsh		6																		
	MHHW (6.37)		98.29	1.71																
High Marsh		7																		
	HAT (7.75)		99.94	0.06																
Wetland / Upland Transition		8																		
	MAX (9.42)	9	100.00	0.00																
Upland		10																		

The 1-foot SLR projection assumed for the year 2050 for the NRC (2012) medium scenario, would result in a MHHW in the year 2050 of 7.37 feet NAVD88, compared to 6.37 feet NAVD88 for the current sea level. The impact of this on the vegetation zones would be to push the upland transition

and high marsh zones to high and middle marsh zones, and middle marsh zones to low marsh zones. Plant communities are expected to show an adaptive response to this, with species with more tolerance for submergence becoming increasingly dominant as conditions change. The plant palettes for the vegetated bench along the south shore should include species that can tolerate a range of tidal elevations, including middle and high marsh species appropriate to the proposed design and current conditions, but also augmented with middle and low marsh species which may become more dominant as water levels increase by 2050. In addition, a highly diverse palette is suggested to allow for greater community adaptability as conditions change. Some plants in diverse array of species may disappear from the community, while others may become more dominant through natural recruitment or mortality.

Planting pattern and plant palettes for Section 6, 7 and 8 are provided in Table 2, Table 3 and Table 4, respectively, including proposed container type and spacing. Note than many species are recommended for planting in single-species copses, with on-center plant spacing as recommended. Other species may be scattered through the planting area.

Table 2. Planting pattern and plant palettes for Section 6.

Species	Planting Pattern and Location	Percent of Zone	Container Size	On-center Planting Distance
Section 6				
Spartina foliosa Cordgrass	Single species copse at lowest elevations in zone	6%	D-16 or 1-gallon	2 feet
Salicornia depressa Common Pickleweed	Single species copse at mid elevations in zone	16%	plugs	1 foot
Salicornia pacifica Pickleweed	Single species copse at mid elevations in zone	24%	plugs	1 foot
Jaumea carnosa Saltmarsh Daisy	Single species copses and scattered throughout zone between copses	4%	plugs	1 foot
Limonium californicum Sea Lavender	Scattered throughout zone between copses	4%	plugs or D-16	1.5 feet
Distichlis spicata Salt Grass	Single species copses at upper elevations of zone	10%	plugs	1 foot
Cressa truxillensis Alkali Weed	Scattered throughout zone between copses	4%	plugs	1 foot
Grindelia stricta var. angustifolia Grindelia	Scattered throughout zone between copses	4%	D-16 or 1-gallon	2 feet
Frankenia salina Alkali Heath	Single species copses and scattered throughout zone between copses	16%	D-16 or 1-gallon	1.5 feet
Triglochin concinna Arrow-Grass	Single species copses at upper elevations of zone	10%	plugs	1 foot
Arthrocnemum subterminale Glasswort	Single species copses at upper elevations of zone	2%	plugs or D-16	2 feet

Table 3. Planting pattern and plant palettes for Section 7.

Species	Planting Pattern and Location	Percent of Zone	Container Size	On-center Planting Distance
Section 7				
Spartina foliosa Cordgrass	Single species copse at lowest elevations in zone	6%	D-16 or 1-gallon	2 feet
Salicornia depressa Common Pickleweed	Single species copse at mid elevations in zone	16%	plugs	1 foot
Salicornia pacifica Pickleweed	Single species copse at mid elevations in zone	24%	plugs	1 foot
Jaumea carnosa Saltmarsh Daisy	Single species copses and scattered throughout zone between copses	4%	plugs	1 foot
Limonium californicum Sea Lavender	Scattered throughout zone between copses	4%	plugs or D-16	1.5 feet
Distichlis spicata Salt Grass	Single species copses at upper elevations of zone	10%	plugs	1 foot
Cressa truxillensis Alkali Weed	Scattered throughout zone between copses	4%	plugs	1 foot
Grindelia stricta var. angustifolia Grindelia	Scattered throughout zone between copses	4%	D-16 or 1-gallon	2 feet
Frankenia salina Alkali Heath	Single species copses and scattered throughout zone between copses	16%	D-16 or 1-gallon	1.5 feet
Triglochin concinna Arrow-Grass	Single species copses at upper elevations of zone	10%	plugs	1 foot
Arthrocnemum subterminale Glasswort	Single species copses at upper elevations of zone	2%	plugs or D-16	2 feet

Table 4. Planting pattern and plant palettes for Section 8.

Species	Planting Pattern and Location	Percent of Zone	Container Size	On-center Planting Distance
Section 8 (below MHHW + 2 feet)				
Spartina foliosa Cordgrass	Single species copse at lowest elevations in zone	6%	D-16 or 1-gallon	2 feet
Salicornia depressa Common Pickleweed	Single species copse at mid elevations in zone	20%	plugs	1 foot
Salicornia pacifica Pickleweed	Single species copse at mid elevations in zone	30%	plugs	1 foot
Jaumea carnosa Saltmarsh Daisy	Single species copses and scattered throughout zone between copses	4%	plugs	1 foot
Limonium californicum Sea Lavender	Scattered throughout zone between copses	4%	plugs or D-16	1.5 feet
Distichlis spicata Salt Grass	Single species copses at upper elevations of zone	16%	plugs	1 foot
Frankenia salina Alkali Heath	Single species copses and scattered throughout zone between copses	20%	D-16 or 1-gallon	1.5 feet
Section 8 (above MHHW + 2 feet)				
Distichlis spicata Salt Grass	Single species copses throughout zone	15%	plugs	1 foot
Cressa truxillensis Alkali weed	Scattered throughout zone between copses	6%	plugs	1 foot
Grindelia stricta var. angustifolia Grindelia	Scattered throughout zone between copses	6%	D-16 or 1-gallon	2 feet
Frankenia salina Alkali Heath	Single species copses and scattered throughout zone between copses	18%	D-16 or 1-gallon	1.5 feet
Arthrocnemum subterminale Glasswort	Single species copses throughout zone	10%	plugs or D-16	2 feet
Heliotropium curassavicum Seaside Heliotrope	Scattered throughout zone between copses	5%	D-16	1.5 feet
Suaeda californica Horned Sea-Blite	Single species copses throughout zone	20%	D-16 or 1-gallon	2 feet
Baccharis glutinosa Marsh Baccharis	Small singles species copses throughout zone	10%	D-16 or 1-gallon	2 feet
Baccharis pilularis var. pilularis Dwarf Coyotebush	Single species copses at upper edge of zone	5%	D-16 or 1-gallon	2 feet
Atriplex leucophylla Beach Saltbush	Single species copses at upper edge of zone	5%	D-16 or 1-gallon	2 feet

2.4.2 Riprap Revetment

A riprap revetment is proposed to protect the majority of the south shore. Estimated extreme waves at the south shore are 3-foot high, 3 to 4 seconds from the southwest (CH2M HILL, 2014a). The proposed revetment is considered adequate and necessary to protect the shoreline from erosion. Furthermore, its gentle gradient estimated at 1v:5h from Sections 6, 7 and 8, would provide a surface for incoming waves to dissipate and reach the vegetated bench above the revetment significantly reduced.

Preliminary revetment parameters, listed in Table 5, were determined using the Van der Meer formulae for the following design parameters:

- significant wave height (H_s) = 3 feet
- peak period (T_p) = 4 seconds
- storm duration = 6 hours
- stone density = 168 lbs/feet^3
- slope = 1v:5h
- damage level = 2 (start of damage equivalent to 5% of stones displaced)
- impermeable core (soil protected with geotextile)

Table 5. Riprap revetment parameters.

Armor Layer	
nominal diameter, D_{n50}	1 foot
nominal weight, W_{50}	130 lbs
no. of layers	2
total layer thickness	2 feet
Underlayer	
nominal diameter, D_{n50}	0.50 foot
nominal weight, W_{50}	15 lbs
no. of layers	2
total layer thickness	1 foot

2.5 Beach

A beach is proposed at the east end, to provide typical park recreational amenities, public access to the water edge and a kayak launch. Figure 11 shows a rendered view of the proposed beach area at the east end and Figure 12 shows a cross section (Section 12) and water levels. The proposed location is adequate as it is the location of an existing natural beach. However, it is noted that based in the inspection of historical aerial photos, the existing beach appears to be in need of a significant clean up, due to many years of lack of maintenance and the accumulation of floating debris by southwesterly wind and wind-waves. As part of a clean up, the nourishment of the beach with clean, beach-quality sand, including all necessary engineering studies, is recommended.

An assessment of the beach (e.g. stability, wave runup, etc.) could not be made at this time because the conceptual design does not provide basic parameters such as nourishment profile, sediment constitution, wave climate, etc. Beaches are dynamic and change in response to waves and water level changes about an equilibrium profile likely different than that shown in Figure 12.



Figure 11. Beach at the east end of Gateway Park.

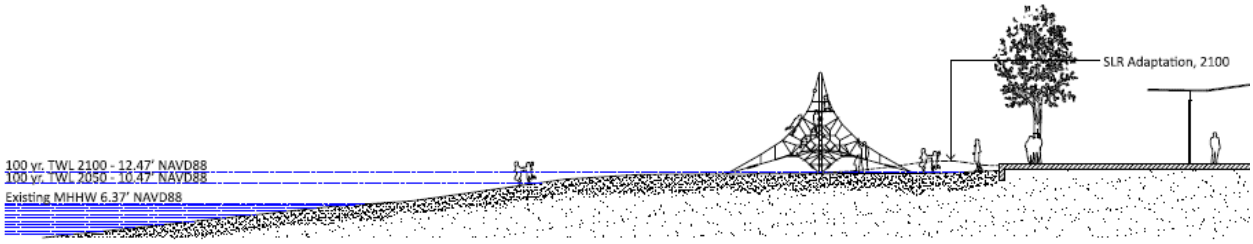


Figure 12. Beach (Section 12) cross section and water levels.

2.6 Stone and Concrete Terrace

A stone and concrete terrace, similar to a stairway transitioning to a riprap revetment, is proposed at the east end on the south side of the beach, to provide public access to the water edge and shoreline protection. Figure 13 shows a rendered view of the proposed terrace and Figure 14 shows a cross section (Section 13) and water levels. The proposed elevation of the terrace is assessed as adequate for the current sea level, and for water levels towards the end of the life of park by mid century (e.g. between 2050 and 2100).



Figure 13. Stone and concrete terrace at the east end of Gateway Park.

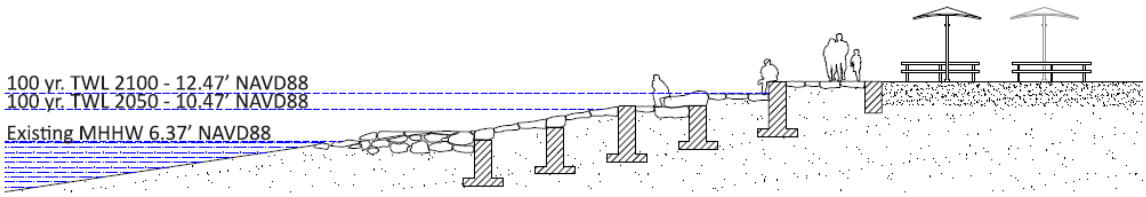


Figure 14. Terrace (Section 13) cross section and water levels.

2.7 East End Seawall

The seawall at the east end (Section 14 in Figure 1) is an existing structure and, therefore, it was not considered in this assessment.

3 Costs of Shoreline Treatments

On the basis of the characteristics and site conditions described above and assumptions described herein, estimates of construction and engineering costs were developed. These are preliminary and intended for budgetary purposes only. The cost estimates assume no contaminated sediments exist at the site. Planting costs are given per unit area, given that planting areas are not known at this time.

Table 6. Cost estimate for north shore revetment.

Description	Quantity	Units	Unit Price	Total
MOB/DEMOBILIZATION		LS		$ -
REMOVE/DISPOSE DEBRIS	1,712	CY	$ 35	$ 59,920
PREPARATION	1,712	CY	$ 5	$ 8,560
REVETMENT (2 layers of new stone)	7,766	TONS	$ 95	$ 737,735
Subotal				**$ 806,215**
20% Contingency				$ 161,243
Total Construction				**$ 967,458**
10% Engineering				$ 96,746
Total				**$1,064,204**

Assumptions:
Mob/demobilization not included, assumed lumped into overall park construction
Construction with land-based equipment
Rock void porosity 40%
Two layers of new stone will be placed on top of the existing revetment
Removal and disposal of debris on the existing revetment will be necessary
Some repairs/preparation of the existing revtement will be necessary

Table 7. Cost estimate for west end concrete sheet pile seawall.

Description	Quantity	Units	Unit Price	Total
MOB/DEMOBILIZATION		LS		$ -
FURNISH CONCRETE SHEET PILES	580	LF	$ 2,200	$1,276,000
INSTALL SHEET PILE SEAWALL	145	EA	$ 1,500	$ 217,500
GROUT AND SEAL JOINTS	2,175	LF	$ 5	$ 10,875
Subotal				**$1,504,375**
20% Contingency				$ 300,875
Total Construction				**$1,805,250**
10% Engineering				$ 180,525
Total				**$1,985,775**

Assumptions:
Mob/demobilization not included, assumed lumped into overall park construction
Precast concrete sheet pile, tie backs and dead man and reinforced concrete cap
Construction with land-based equipment
4-foot wide x 40-foot long x 1-foot thick concrete piles

Table 8. Cost estimate for west end stairs.

Description	Quantity	Units	Unit Price	Total
MOB/DEMOBILIZATION		LS		$ -
CONCRETE STAIRS	100	CY	$ 600	$ 60,000
Subotal				**$ 60,000**
20% Contingency				$ 12,000
Total Construction				**$ 72,000**
10% Engineering				$ 7,200
Total				**$ 79,200**

Assumptions:
Mob/demobilization not included, assumed lumped into overall park construction
Includes preparation work
Construction with land-based equipment, cast in place
Rise height 1 foot, run length 2 feet
Average width of the stairs is 70 feet

Table 9. Cost estimate for south shore revetment.

Description	Quantity	Units	Unit Price	Total
MOB/DEMOBILIZATION		LS		$ -
REMOVE/DISPOSE ROCK AND DEBRIS	13,456	CY	$ 35	$ 470,951
EARTHWORK SLOPE PREPARATION	13,456	CY	$ 8	$ 107,646
GEOTEXTILE	13,456	SY	$ 5	$ 67,279
REVETMENT	12,207	TONS	$ 95	$ 1,159,670
Subotal				**$ 1,805,546**
20% Contingency				$ 361,109
Total Construction				**$ 2,166,655**
10% Engineering				$ 216,665
Total				**$ 2,383,320**

Assumptions:
Mob/demobilization not included, assumed lumped into overall park construction
Construction with land-based equipment
Rock void porosity 40%
Removal and disposal of debris will be necessary
Slope preparation will be necessary

Table 10. Cost estimate for planting on bench.

Description	Units	Unit Price
SOIL PREPARATION	SF	$ 0.25
SECTION 6 MARSH PLANTING	SF	$ 2.15
SECTION 7 MARSH PLANTING	SF	$ 2.15
SECTION 8 MARSH PLANTING - LOWER ZONE (BELOW MHHW + 2 FEET)	SF	$ 2.15
SECTION 8 MARSH PLANTING - HIGHER ZONE (ABOVE MHHW + 2 FEET)	SF	$ 1.95

Total Construction = Construction + 20% contingency
Engineering = 10% of Total Construction
Environmental Documenation = 3% of Total Construction
Construction Management = 8% of Total Construction

Table 11. Cost estimate for beach.

Description	Quantity	Units	Unit Price	Total
MOB/DEMOBILIZATION		LS		$ -
SAND	4,400	CY	$ 35	$ 154,000
GRADING	1	LS	$ 50,000	$ 50,000
Subotal				**$ 204,000**
20% Contingency				$ 40,800
Total Construction				**$ 244,800**
10% Engineering				$ 24,480
Total				**$ 269,280**

Assumptions:
Mob/demobilization not included, assumed lumped into overall park construction
Construction with land-based equipment
Upland sand source
Average 3-foot thick sand layer

Table 12. Cost estimate for kayak launch.

Description	Quantity	Units	Unit Price	Total
MOB/DEMOBILIZATION		LS		$ -
RAMP	71	CY	$ 1,500	$ 106,500
EXCAVATION AND GRADING	1	LS	$ 5,000	$ 5,000
Subotal				**$ 111,500**
20% Contingency				$ 22,300
Total Construction				**$ 133,800**
10% Engineering				$ 13,380
Total				**$ 147,180**

Assumptions:
Mob/demobilization not included, assumed lumped into overall park construction
Construction with land-based equipment
6 to 8-inch thick reinforced concrete, cast in place
Launch is 16 feet wide and 160 feet long

Table 13. Cost estimate for stone and concrete terrace.

Description	Quantity	Units	Unit Price	Total
MOB/DEMOBILIZATION		LS		$ -
PREPARATION	1	LS	$ 10,000	$ 10,000
CONCRETE STAIRS	1	LS	$ 50,000	$ 50,000
REMOVE/DISPOSE ROCK AND DEBRIS	1,408	CY	$ 35	$ 49,276
EARTHWORK SLOPE PREPARATION	1,408	CY	$ 8	$ 11,263
GEOTEXTILE	845	SY	$ 5	$ 4,224
REVETMENT	1,277	TONS	$ 95	$ 121,338
Subotal				**$ 246,101**
20% Contingency				$ 49,220
Total Construction				**$ 295,321**
10% Engineering				$ 29,532
Total				**$ 324,854**

Assumptions:
Mob/demobilization not included, assumed lumped into overall park construction
Construction with land-based equipment
150 feet stair construction, 200 feet revetment construction

4 References

Caltrans (2001). Rock Slope Protection Detail, Drawing (no number).

CH2M HILL (2014a). Gateway Park Project Approval/Environmental Document (PA/ED), Site Characterization and Assessment, Technical Memorandum, November 20, 2014.

CH2M HILL (2014b). Gateway Park Project Approval/Environmental Document (PA/ED), Sea Level Rise Adaptation, Technical Memorandum, November 20, 2014.

EinwillerKuehl Landscape Architecture (2014). Concept Plan Schematics dated October 2014.

Eurotop (2015). http://www.overtopping-manual.com/EmpSlope_Simple.aspx, probabilistic approach.

National Research Council (2012). Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future. Committee on Sea Level Rise in California, Oregon, and Washington; Board on Earth Sciences and Resources; Ocean Studies Board; Division on Earth and Life Studies.

Philip Williams & Associates (PWA) and P.M. Faber (2004). Design Guidelines for Tidal Restoration in San Francisco Bay, December, 2004.

San Francisco Bay Conservation and Development Commission (BCDC) (2007). Shoreline Plants: A Landscape Guide for the San Francisco Bay. http://www.bcdc.ca.gov.

Zedler, J.B. (2001). Handbook for Restoring Tidal Wetlands. CRC Press.

USACE (2006). Coastal Engineering Manual EM 1110-2-1100 Part VI.