

Conference Call Number  
Dial 1-888-273-3658  
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## AGENDA

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- 11:15 a.m.    **1. Introductions and Agenda Overview**
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- 11:25            **Schedule Update – Plan Bay Area 2040 and Equity Analysis**  
Adam Noelting, MTC  
<https://mtc.legistar.com/LegislationDetail.aspx?ID=2673861&GUID=F7E90FD8-DF81-4412-97CA-3A629771D118>
- 
- 11:35            **2. Draft Plan Bay Area 2040 Scenarios**  
Adam Noelting, MTC  
<https://mtc.legistar.com/LegislationDetail.aspx?ID=2555453&GUID=4B5BB96B-FB97-497D-B075-BED97FC5CB77>
- 
- 12:00 p.m.    **3. Draft Results for Equity Measures – Project Performance**  
Kristen Carnarius and Dave Vautin, MTC  
<https://mtc.legistar.com/LegislationDetail.aspx?ID=2679005&GUID=F1229DEA-73B0-4574-940F-07A8F856AD18>
- 
- 12:50            **4. Updated Communities of Concern**  
Vikrant Sood, MTC and Pedro Galvao, ABAG  
<http://arcg.is/1Wd39dF>
- 
- 1:05            **5. California Health Disadvantage Index**  
Vikrant Sood, MTC  
<http://phasocal.maps.arcgis.com/apps/Viewer/index.html?appid=e1215eae472a4c458c5e9157d6b8ec8e>
- 
- 1:15            **Close**
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- Next REWG meeting is scheduled for **Wednesday, May 11, 2016. Location TBD**

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## Schedule of Upcoming Meetings

*Note: meetings and agenda items are subject to change*

All meetings are scheduled from 11:15am to 1:00pm in the Claremont Conference Room at MTC, 101 8th Street Oakland CA 94607, unless otherwise stated

### 2016

May	Preliminary Results from Additional Research
Summer	Preliminary Scenario Analysis Results for Equity Measures
Summer	Preliminary Preferred Alternative Analysis Results for Equity Measures
Fall/Winter	Title VI and Environmental Justice Analysis on Preferred Alternative

### 2017

Winter/Spring	Draft and Final Equity Report for PBA 2040
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TO: Bay Area Partnership Board

Date: March 18, 2016

FR: Ken Kirkey, Director, Planning

RE: Plan Bay Area 2040 Update

**Plan Bay Area 2040 Key Milestones**

The following table summarizes the upcoming milestones to develop the transportation investment strategy for the preferred scenario.

<b>Key Milestone</b>	<b>Revised Timing</b>
Transportation Operations and Maintenance Needs Assessments	April 2016
Transportation Project Performance Assessment	April 2016
Release Defined Land Use and Transportation Scenarios	May 2016
Release Scenario Targets Evaluation	May 2016
Public Workshops/Open Houses	May/June 2016
Final Action on Project Performance Assessment Results	July 2016
Adoption of Preferred Scenario	September 2016

**Upcoming Open Houses**

MTC’s adopted Public Participation Plan calls for conducting public meetings for Plan Bay Area 2040 at key planning and decision milestones. Looking ahead to the next such milestone — September 2016 adoption of a preferred scenario by ABAG and MTC — staff is planning a series of nine public open houses slated for late spring of 2016 (late May and early June). The open houses will present general information about Plan Bay Area 2040, provide an overview on the scenarios, and focus on the evaluation results of the scenarios.

Given the largely positive feedback received from the 2015 open houses, staff proposes to replicate this format for this second round of outreach. MTC staff is working to schedule a series of nine public open houses, one in each county, to be held in the evening from approximately 7 p.m. to 9 p.m. We will look for the same type of venue (one large-capacity room, flexible floor plan).

Please contact Adam Noelting (anoelting@mtc.ca.gov or 510.817.5966) of MTC staff with any questions or comments.



TO: Regional Advisory Working Group  
FR: Miriam Chion, ABAG and Ken Kirkey, MTC  
RE: Plan Bay Area 2040 Draft Scenario Strategies

DATE: January 19, 2016

ABAG and MTC are working to develop three land use and transportation scenarios to inform discussions about the strategic update of *Plan Bay Area*, Plan Bay Area 2040 (PBA 2040). Scenarios show different options for how the Bay Area can grow and change over time in ways that help us meet our goals for a more prosperous, sustainable, and equitable region. The scenarios will in turn be scored on the 13 performance targets adopted by the two agencies' boards in fall 2015. The purpose of this item is to update the RAWG on recent progress and provide more detail on some of the potential land use and transportation strategies to be incorporated into the scenarios.

### Background

Beginning in October, ABAG and MTC held scenario workshops to present the scenario development approach and discuss three draft scenario concepts. The purpose of the workshops was to receive feedback on the initial concepts, as well as specific strategies for how to maximize their effectiveness. The feedback was summarized (**Attachment 1**) and presented alongside the scenario approach and initial concepts at the November joint meeting of ABAG's Administrative Committee and MTC's Planning Committee.

Based on the feedback to date, staff has worked to adjust some aspects of the initial scenario concept narratives. Furthermore, staff has provided more detail on some of the specific land use policy and transportation investment strategies that underpin each scenario's growth pattern. See **Attachment 2** for this detail. Broadly speaking, the more significant changes to the scenarios can be summarized as follows:

- Automation and connected vehicles – all the scenarios will assume a level of automation, connected vehicles and other technologies commensurate with the Bay Area's history of early adoption and leadership in the development of new technologies during the plan horizon. Previously, these strategies were only assumed to emerge in Scenario 1.
- Regional equity emphasis – Recognition of high-opportunity areas, access to jobs and other funding strategies.
- Greenfield development – Scenario 2 removes a reference to “small amount of greenfield growth,” and focuses on infill development.
- Transit Priority Areas (TPAs) – Recognition of TPAs along with PDAs.

### Scenario Development

**Attachment 2** provides the narrative of each scenario presented at the scenario workshops as well as a preliminary snapshot of each scenario's potential land use and transportation investment strategies. The transportation investment strategies represent an illustrative list and reflect only a subset of the major projects submitted through the MTC Call for Projects process. For each scenario, staff is working to include a more extensive set of transportation and land use strategies, policies and investments. Staff will present more detailed scenario descriptions, as well as evaluations of each scenario against the adopted regional goals and targets, in spring 2016.

*Land Use*

The land use strategies described in **Attachment 2** show different combinations of policies that can be used to accommodate future population, households, and employment in ways that are consistent with the growth pattern described in each scenario concept. The strategies included generally affect land use patterns by changing a community’s capacity for new development or incentivizing a particular type or location of growth. Each scenario builds on the Bay Area’s existing land use pattern and transportation network, while also taking into account local plans for growth, historical trends, the results of the most recent PDA Assessment, output from the UrbanSim model, as well as the growth envisioned in Plan Bay Area 2013. While the scenarios are designed to be realistic from a policy perspective, they also bundle policies in ways that provide substantial and meaningful contrasts for policy makers.

*Transportation Investment Strategies*

The transportation investment strategies included in **Attachment 2** exemplify the types of major projects likely to be included under each scenario. These focus primarily on some of the major investments submitted by project sponsors through the MTC Call for Projects process, and reflect the types of transportation investments most likely to impact a regional scenario’s performance. Additionally, each scenario will also assume a baseline comprising the existing network and committed projects, and include other transportation strategies and policies to accommodate the growth pattern. The transportation investments will be balanced across scenarios, each representing a financially constrained set of investments.

The following table summarizes the potential “intensity” of transportation investments across the three scenarios, by purpose, mode, and geography.

Draft Investment Summary		Scenario #1	Scenario #2	Scenario #3	
by Purpose and Mode	Streets & Highways	State of Good Repair	● ● ●	● ●	●
		Efficiency	● ● ●	● ● ●	● ●
		Expansion / Extension	● ● ●	● ●	●
	Transit	State of Good Repair	● ● ●	● ●	●
		Efficiency / Operations	● ●	● ● ●	● ● ●
		Expansion / Extension	●	● ●	● ● ●
	Bicycle / Pedestrian	● ●	● ●	● ●	
Climate Program	● ● ●	● ● ●	● ● ●		
by Geography	Big 3 Cities	●	● ●	● ● ●	
	Bayside	●	● ●	●	
	Inland	● ● ●	●	●	

**Preferred Scenario Development Process**

The scenarios and their respective strategies do not constitute staff proposals or recommendations. Rather, these strategies are presented to illustrate tradeoffs between alternatives and serve as a building block for identifying the preferred scenario, which will incorporate some of the best ideas from each scenario alternative. The preferred scenario will strive to achieve the adopted PBA 2040 goals and performance targets, and will be informed by numerous ongoing efforts, including the:

- Local government efforts related to Priority Development Areas (PDAs) and Priority Conservation Areas (PCAs)
- Regional Jobs, Housing & Population Forecast;
- Regional Transportation Revenue Forecast;
- Project Performance Assessment and Call for Projects;
- Transportation System Operations and Maintenance Needs Assessments; and,
- Public Workshops and Stakeholder Feedback.

### **Other Policies and Strategies**

It is important to recognize that Plan Bay Area 2040's scenario process uses a relatively modest set of land use and transportation strategies to show different options for future land use patterns and the transportation investments and policies needed to support these distributions of future housing and employment growth. The combinations of strategies in the scenarios are included to enable a discussion about regional priorities, and do not represent all of the potential public policy interventions that regional, state, or local governments could use to accomplish the Plan's goals. For instance, the specific structure of many potential state and local tax and regulatory policies falls largely outside the analytic scope of the scenario process, and requires a separate, more robust public policy analysis to determine costs and benefits. Once the preferred scenario is adopted, the final Plan Bay Area 2040 document will describe a wider range of policies to support the Plan's goals.

### **Next Steps**

The scenarios will continue to be refined over the next several months, and then will be evaluated to understand the effects of the different combinations of land use and transportation strategies on our shared goals and targets. Key milestones include the release of the scenario evaluation planned in spring 2016, with public workshops immediately following. The adoption of a preferred scenario is expected to occur in late summer 2016. The scenario planning process is summarized in **Attachment 3**.

**Attachments:** Workshop Comments Summary  
Draft Scenario Strategies  
Scenario Development Process  
Presentation



METROPOLITAN  
TRANSPORTATION  
COMMISSION



Association of  
Bay Area Governments

# What We Heard from RAWG & RPC

## Goals and Aspirations for Scenario Planning

- Plan for diverse, inclusive and supportive communities
- Preserve what is unique about each community
- Focus on vibrant downtowns and neighborhoods with clean, safe and attractive streets; more walking and activity on the streets; great parks, schools and lots of services
- Promote equitable community development that brings new life to neighborhoods without displacement
- Plan to improve public health and improve the health of the natural environment

## General Comments: Scenario Development Process

- Appreciated ability to provide early input in the scenario process
- Include social equity as a guiding theme in each scenario
- Concern about achieving greenhouse gas (GHG) reduction and housing goals under any scenario
- Concern that policies to promote compact growth could lead to segregation
- Solutions to region's challenges will be different in every city; need scalable solutions
- Provide examples of how the type of development discussed in each scenario concept worked in other regions
- Consider changing demographics (race, age, and lifestyle preferences such as young people driving significantly less)
- Priorities for unincorporated communities and/or smaller communities are not reflected in the scenarios.
- Consider discussing tradeoffs what will the region gain and what is the region willing to give up?
- Provide the general public with an opportunity to have a discussion about scenario concepts before scenarios are solidified

## Plan Bay Area 2040: Scenario Draft Concept #1

### Housing

- Requires suburban co-location of jobs/housing
- Affordable housing will be harder to produce in less dense areas; requires more subsidy
- Consider housing subsidies for low-income residents; more funds for affordable housing
- Encourage density bonuses
- Could help smaller cities become complete communities while still maintaining their character

### Transportation

- Consider transit subsidies for low income residents; public shuttles; toll roads
- Last mile connection still an issue
- Regional bus system and high occupancy toll/express lane network important to this scenario (24/7)
- Scenario requires expanded roadways, leaving less funding for transit
- Greater need for transit infrastructure (transit in suburbs) with dispersed development
- Consider parking policy reform

- Invest more in goods movement
- Scenario is heavy on technology but the innovations aren't here yet; be cautious when planning

## Equity

- Scenario could lead to displacement; need renters' protection
- Explicitly include inclusionary zoning as a policy solution

## Economy

- Need more employment growth in the dispersed areas
- Consider how to disperse jobs
- Need transportation demand management strategies to encourage working remotely

## Environment

- This scenario could encourage greenfield development and sprawl
- This scenario could be detrimental to preserving open space
- Consider better coordination between Bay Area Air Quality Management District and Bay Conservation and Development Commission and ABAG and MTC as policies are moving in opposite direction than priority development areas (PDAs)
- Vehicle miles traveled will increase under this scenario; won't achieve GHG target
- Could achieve GHG target with zero emissions vehicles
- Keep some lots for urban agriculture
- Maintain urban growth boundaries
- Implement indirect source review

## Other

- Congestion pricing to raise money to pay for roadways; development fees for transit
- Consider providing funding for areas outside of PDAs; many cities cannot accommodate all growth within PDAs.
- One Bay Area Grants (OBAG) could expand the definition of PDAs and provide incentives if close to transit

## Plan Bay Area 2040: Scenario Draft Concept #2

### Housing

- Need anti-displacement policies, both carrots and sticks
- Need more incentives to get needed densities to support more affordable housing
- Convert older office parks to low-income housing and provide needed transit
- Need for senior housing near transit given changing demographics
- Clarify and specify PDA criteria about PDAs with respect to housing
- Smaller cities will need technical support to plan in a way that supports this scenario

### Transportation

- First/last mile transportation will be key with this scenario
- Scenario will require significant investment in rail/fixed-guideway transit, but that only works in the core
- Consider new types of transit or Transportation Demand Management for suburbs
- Support mobility-management programs for seniors
- Consider bicycle/pedestrian improvements

- Scenario doesn't offer enough for small suburban or rural communities

## Equity

- This scenario offers potential for most equitable growth
- This scenario will need to address suburbanization of poverty; lower income communities will increasingly have longer commutes, less access to services
- Consider policies to provide living wage
- Consider non-work transit trips (many other needs - school, recreation, medical, shopping)
- Don't just focus on housing; look at location of and access to jobs

## Economy

- Pay equal attention to jobs and housing
- Policies should promote more working remotely
- Promote job creation, especially in PDAs (though some wanted jobs outside PDAs to increase accessibility to lower income residents)
- Need more clarity and specificity about PDA policies with respect to jobs
- Need more California Environmental Quality Act relief/regulatory streamlining

## Environment

- This scenario encourages greenfield development and sprawl
- Would require enormous investments in transit (esp. rail or bus-rapid transit) to avoid sprawl
- Need to address hazards like fault lines and sea-level rise with this scenario
- Ensure that PDA policies are not weakened or the region will not be able to realize environmental benefits from concentrated growth
- Commuter Benefit Ordinances could be helpful to making this scenario work

## Other

- Would require new regional sales tax for bus service as well as a regional gas tax
- OBAG should go to all "red dot" areas (outside PDAs as well as within)

## Plan Bay Area 2040: Scenario Draft Concept #3

### Housing

- Exacerbates displacement and affordability; more stress regarding displacement if jobs are focused in urban core
- The three cities are already behind in their jobs/housing balance
- Would need to incentivize affordable housing, but land costs will be a huge barrier
- Needs anti-displacement policies
- Needs inclusionary zoning
- Consider a housing trust fund
- Missed opportunity to consider infill in smaller cities

### Transportation

- Transit will need large investments plus operating funds
- Transit could not handle this scenario; already at capacity now
- Transit investments needed in other parts of the region; need to support smaller cities and suburbs too.

## Equity

- Least equitable scenario
- This scenario provides least amount of choice
- There will be the highest pressures on displacement under this scenario
- Who could afford to live in the cities?

## Economy

- The kind of growth discussed in the scenario is already happening so let's make it successful by investing in cities
- Infrastructure in other areas will deteriorate, and so will economic vitality
- Goods movement in and out of these corridors will be a challenge
- How will we fund regional initiatives if benefits only flow to big cities?

## Environment

- Only this scenario will help us reach targets; most environmentally sustainable
- This scenario will be hard to implement due to economic and political realities
- Change urban growth boundaries to change development

## Other

- Other cities need investments in order to be walkable, complete, equitable and green; creates "have" vs "have nots"
- Need to address other areas such as schools, safety, parks to improve quality of life in three big cities
- Three big cities enjoy economies of scale and are better able to address major issues
- Consider creating incentives for public-private partnerships

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# Draft Scenario Alternative #1

## Description

Scenario 1 targets future population and employment growth to the downtowns of every city in the Bay Area to foster a region of moderately-sized, integrated town centers. This scenario emphasizes a dispersed distribution of households and jobs and limited growth in San Jose, San Francisco, and Oakland. As a result, a number of the region's cities would experience significant growth and different types of development compared to existing patterns. As in the other scenarios, most growth will be in locally-identified PDAs, but this scenario offers the most dispersed growth pattern, meaning that cities outside the region's core are likely to see higher levels of growth. Within cities, more growth will be accommodated outside of PDAs than in other scenarios, with an emphasis on high opportunity areas that have higher levels of educational opportunities, economic mobility, and neighborhood services.

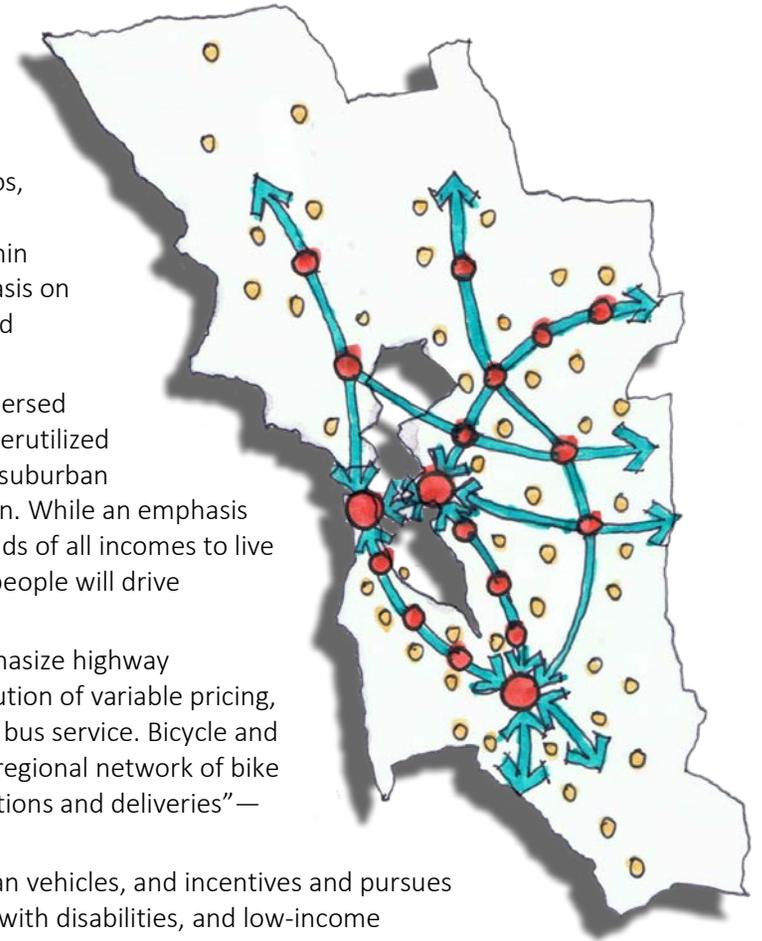
To accommodate this growth, investments, including resources for affordable housing, will be dispersed across PDAs, Transit Priority Areas (TPAs), other transit-proximate locations outside PDAs, and underutilized transportation corridors across the region. This scenario comes closest to resembling a traditional suburban pattern, with an increase in greenfield development to accommodate the dispersed growth pattern. While an emphasis on multi-family and mixed-use development in downtowns will provide opportunities for households of all incomes to live near a mix of jobs, shopping, services, and other amenities, this scenario also assumes that many people will drive significant distances by automobile to get to work.

To support this scenario's dispersed growth pattern, transportation investment priorities will emphasize highway strategies, including the expansion of high-occupancy toll lanes on all regional highways, the institution of variable pricing, and highway widening at key bottlenecks. The scenario will also emphasize expansion of suburban bus service. Bicycle and pedestrian infrastructure will create a network of regional trails and bike lanes, including a robust regional network of bike sharing. To support industry and goods movement, the scenario will focus largely on "smart operations and deliveries" — technology and operations to reduce congestion and increase safety on urban and rural roads.

To reach our climate goals, this scenario sees heavy investments in technology advancements, clean vehicles, and incentives and pursues near-zero and zero emissions strategies wherever feasible. The mobility needs of seniors, persons with disabilities, and low-income communities will be addressed most centrally by "mobility management" solutions to link individuals to travel options that meet their specific needs, as well as the provision of demand-responsive strategies by the public, non-profit, and private sectors.

## Strategies

The transportation investment strategies listed below exemplify the types of major projects likely to be included under this scenario. These focus primarily on some of the major investments submitted by project sponsors through the MTC Call for Projects process. This scenario will include a larger set of transportation and land use strategies, policies, and investments to reflect the scenario description.



## Land Use

In this scenario, land use strategies emphasize a more dispersed growth pattern, with capacity increases to accommodate both population and employment growth directed to PDAs, TPAs, and the downtowns of every city in the region. Compared to the other scenarios, cities outside the region's core are likely to see higher levels of growth and, within cities, more growth will be accommodated outside PDAs, with an emphasis on high opportunity areas.

- Strategy 1A: Encourage new housing development by increasing residential development capacity in PDAs in cities throughout the region, with limited growth and investments in San Jose, San Francisco, and Oakland.
- Strategy 1B: Encourage expansion of commercial development in areas outside the region's core. Potential strategies include:
  - Increasing commercial density in select high accessibility existing clusters in each county in areas outside of the El Camino Real and East Bay Corridors.
  - Limit commercial capacity in jurisdictions in the region's core.
- Strategy 1C: Protect the region's most critical natural resources by avoiding development on adopted Priority Conservation Areas (PCAs), but allow urban growth boundaries to expand faster than expected compared to past trends to accommodate more dispersed growth.
- Strategy 1D: Encourage additional housing choices by allowing second units in all jurisdictions and reducing parking minimums in PDAs along regional rail transit (such as BART, Caltrain, Amtrak, Altamont Corridor Express, and SMART).
- Strategy 1E: Encourage more affordable housing choices in jurisdictions with at least one PDA by promoting policies to retain existing affordable housing and pursuing funding strategies such as inclusionary zoning, tax increment financing, a regional housing trust fund, etc.

## Transportation Investments

Investments to increase the frequency of suburban bus operations, manage travel demand, and expand the capacity of our highway network will be critical to enable this pattern of growth. Since job growth will be spread throughout the region, major public transit expansions or extensions such as fixed-guideway extensions and core capacity enhancements will be a lower priority.

- Strategy 1A: Pursue strategic transit investments, especially bus improvements, to provide access to increasingly dispersed job centers. Key projects include:
  - Local Suburban Bus Frequency Increases (focused on North Bay, East Bay and Peninsula)
  - Express Bus Network along Express / Managed Lane Corridors
  - Muni Forward Program and Geary Boulevard Bus Rapid Transit (BRT)
- Strategy 1B: Leverage technological advances to use roadway capacity more efficiently, while emphasizing freeway-focused pricing like Express Lanes / Managed Lanes as complementary strategies. Key projects include:
  - Express Lanes Full Buildout (including Managed Lane Network)
  - Columbus Day Initiative (including Adaptive Ramp Metering and Arterial Signal Prioritization)
- Strategy 1C: Invest in strategic highway capacity increases to accommodate this scenario's growth pattern. Key example projects include:
  - SR-84 and SR-262 Widening in Alameda County
  - US-101 Marin-Sonoma Narrows Widening
  - Major I-680 Interchange Improvements and Widening at I-80, SR-4, and SR-84
  - SR-4 Widening and TriLink Tollways in Contra Costa County
- Strategy 1D: Emphasize investment of remaining funds into both state of good repair (particularly for highways and local streets across all nine counties) and localized active transportation projects to support short-distance sustainable transport; leverage innovative technologies to reduce expenditures for transit operations and maintenance in low-density environments when feasible (e.g., autonomous buses, flexible shuttles, etc.).

# Draft Scenario Alternative #2

## Description

Scenario 2 targets future population and employment growth to locally-identified PDAs along major corridors, with an emphasis on growth in medium-sized cities with access to the region's major rail services, such as BART and Caltrain. Outside the PDAs, this scenario sees modest infill development, especially in high opportunity areas. As these communities grow over the next 25 years, compact development and strategic transportation investments will provide residents and workers access to a mix of housing, jobs, shopping, services, and amenities in proximity to transit traditionally offered by more urban environments. Resources for affordable housing will be dispersed across the Bay Area, with some concentration in PDAs to support the development of affordable housing where the most population and employment growth is targeted.

To support this scenario's growth pattern, transportation investments will prioritize maintenance of existing infrastructure. The region's transit system will be modernized and expanded along key corridors to improve commutes and add capacity. Investments in bicycle and pedestrian infrastructure, including the regional bike sharing network, will support the creation of more walkable and bikeable downtowns. While this scenario would see limited expansion of the region's roadways, it will use travel demand strategies, including an expansion of the regional express lanes network, to use existing roadways more efficiently. To support industry and goods movement, particularly the industrial lands clustered along the major corridors, this scenario will support environmentally sustainable investments at our key global gateways to create local jobs, protect the community, and attract international commerce.

To protect the climate, this scenario prioritizes a number of innovative transportation initiatives, including car sharing and near-zero and zero emission goods movement technologies. The mobility and accessibility needs of seniors, persons with disabilities, and low-income communities will be addressed through continued investments in transit operations, transit capital, and a continued focus on "mobility management" solutions to link individuals to travel options that meet their specific needs.

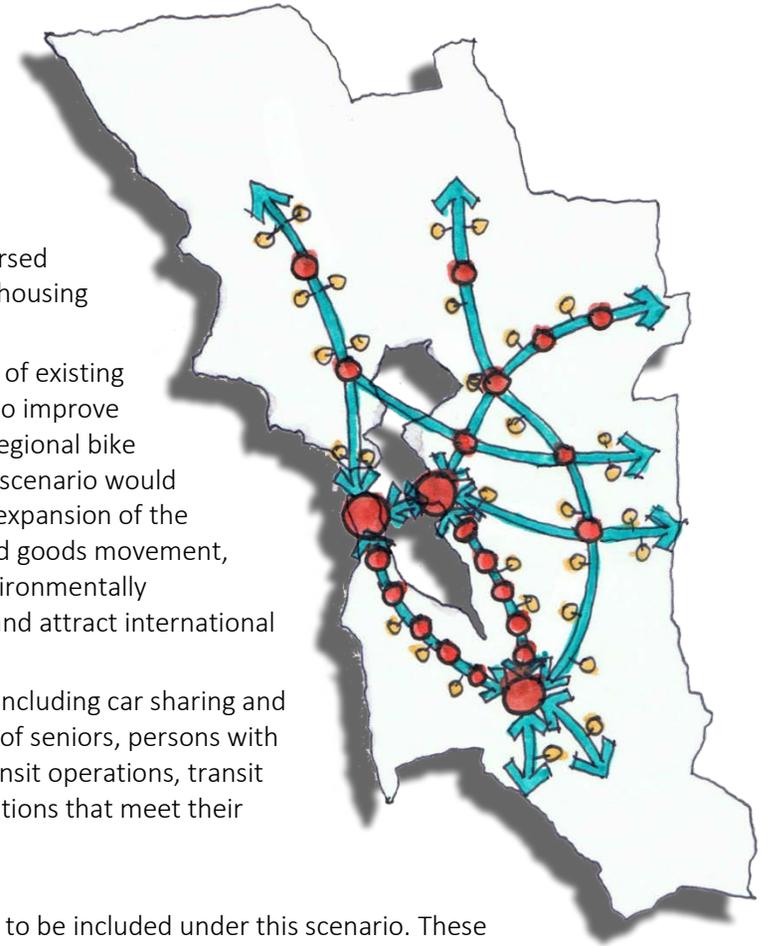
## Strategies

The transportation investment strategies listed below exemplify the types of major projects likely to be included under this scenario. These focus primarily on some of the major investments submitted by project sponsors through the MTC Call for Projects process. This scenario will include a larger set of transportation and land use strategies, policies and investments to reflect the scenario description.

## Land Use

In this scenario, land use strategies target capacity increases for population and employment growth to PDAs along major corridors, with an emphasis on growth in medium-sized cities with access to the region's major rail services.

- Strategy 2A: Encourage new housing development by increasing residential development capacity in PDAs based on locally identified PDA place type.
- Strategy 2B: Enable more commercial development along major corridors connecting the three largest cities.



- Strategy 2C: Protect the region’s natural resources by avoiding development on adopted PCAs and accommodating all new growth within existing urban growth boundaries or urban limit lines, using city boundaries as a limit when a jurisdiction has no expansion limit.
- Strategy 2D: Encourage additional housing choices by allowing second units in all jurisdictions along the El Camino Real and East Bay Corridors, and reducing parking minimums in PDAs with high levels of transit access along those corridors.
- Strategy 2E: Encourage more affordable housing choices in jurisdictions along the El Camino Real and East Bay Corridors by promoting policies to retain existing affordable housing and pursuing funding strategies such as inclusionary zoning, tax increment financing, a regional housing trust fund, etc.

### **Transportation Investments**

Urban growth patterns will require increased investment in our regional rail systems like BART and Caltrain, as well as the expansion of express bus services, including bus rapid transit (BRT) to connect inner-ring suburban communities to major job centers. At the same time, a smaller share of suburban and exurban residents will continue to drive, necessitating sustained investment in freeways and arterials.

- Strategy 2A: Prioritize transit efficiency investments to improve frequencies and reduce travel times on core transit lines across the region. Key projects include:
  - BART Metro Program
  - Core Bus Rapid Transit (BRT) Lines in San Francisco, San Jose, Oakland/Berkeley/Richmond, and the Peninsula
  - Managed Lanes Express Bus Network
  - Local Suburban Bus Frequency Increases (focused on North Bay, East Bay, and Peninsula)
  - High Performing Core Capacity and Core Connectivity investments
- Strategy 2B: Focus on a limited set of high performing highway efficiency investments, including strategic highway capacity improvements to address bottlenecks and provide reliever routes to freeways within the urban core. Key projects include:
  - Columbus Day Initiative
  - Express Lanes “Limited and Focused” Buildout (including Managed Lanes Network)
  - SR-84 and SR-262 Widening in Alameda County
  - US-101 Marin-Sonoma Narrows Widening
- Strategy 2C: Fund the most cost-effective transit expansion projects that support the region’s highest-growth PDAs. Key projects include:
  - BART to Silicon Valley
  - Caltrain Electrification and Extension to Transbay Transit Center
- Strategy 2D: Balance state of good repair needs with expansion and efficiency priorities for all modes; identify opportunities to align state of good repair to support PDA growth by repaving streets and upgrading buses that serve these communities.

# Draft Scenario Alternative #3

## Description

Scenario 3 concentrates future population and employment growth in the locally-identified PDAs and TPAs within the Bay Area's three largest cities: San Jose, San Francisco, and Oakland. Neighboring cities that are already well-connected to these three cities by transit will see moderate increases in population and employment growth, particularly in their locally-identified PDAs and high opportunity areas. The amount of growth outside these areas is minimal, with limited infill development in PDAs and no greenfield development. Growth in the three biggest cities will require substantial investment to support transformational changes to accommodate households of all incomes. This scenario will prioritize strategies to make these existing urban neighborhoods even more compact and vibrant, and enable residents and workers to easily take transit, bike or walk to clusters of jobs, stores, services, and other amenities. Resources for affordable housing will likewise be directed to the cities taking on the most growth.

To support this scenario's big city-focused growth pattern, the transportation infrastructure within and directly serving the region's core will be maintained to a state of good repair, modernized to boost service and improve commutes and capacity, and expanded to meet increased demand. While these transit investments will take priority, the roadway network will also require significant investments, such as a regional express lane network to prioritize direct access to the three biggest cities and regional express bus service to increase connections to the region's core. Bicycle and pedestrian infrastructure will be dramatically expanded in these cities, including a robust network of bike sharing. To support industry and goods movement, investments at the Port of Oakland will be ramped up quickly to enable more efficiency and to mitigate the impacts of Port activities on nearby communities.

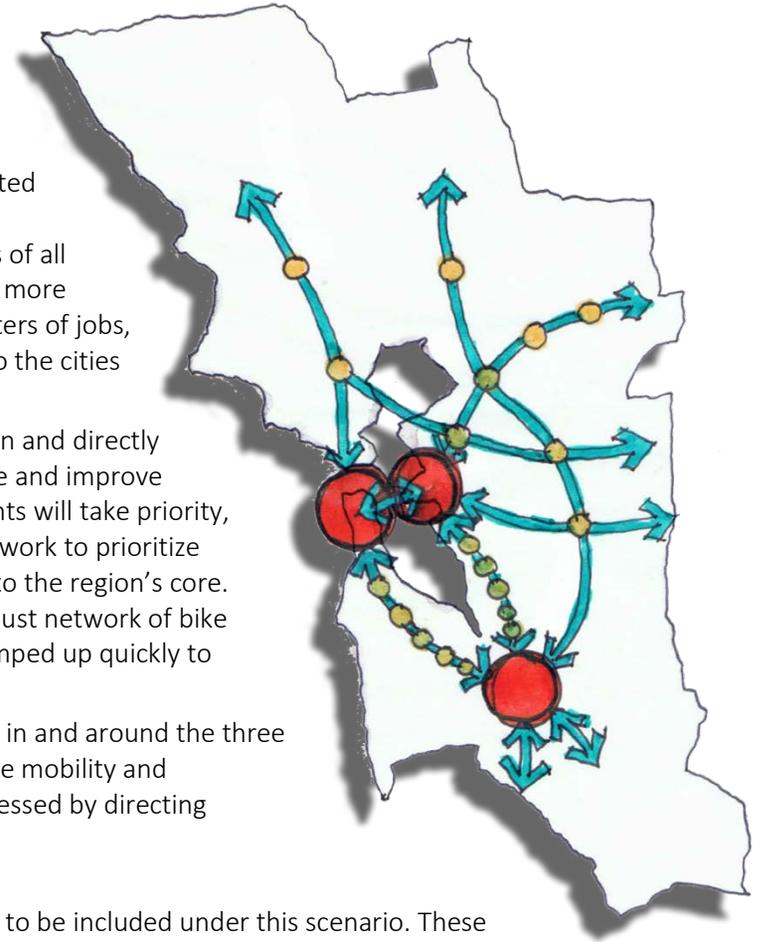
To reach our climate goals, this scenario will focus technological and financial incentive strategies in and around the three biggest cities, which will accommodate a significant increase in population and travel demand. The mobility and accessibility needs of seniors, persons with disabilities, and low-income communities will be addressed by directing resources for a robust increase in transit operations and capital within the region's core.

## Strategies

The transportation investment strategies listed below exemplify the types of major projects likely to be included under this scenario. These focus primarily on some of the major investments submitted by project sponsors through the MTC Call for Projects process. This scenario will include a larger set of transportation and land use strategies, policies and investments to reflect the scenario description.

## Land Use

In this scenario, it is assumed that most of the region's population and employment growth will be located in San Francisco, San Jose, and Oakland—with the remainder primarily in cities directly proximate to the three biggest cities and areas well served by transit. Capacity for growth in these cities is emphasized in PDAs, TPAs, and other areas that are well served by transit.



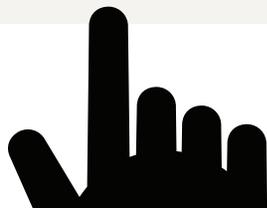
- Strategy 3A: Increase development capacity in San Jose, San Francisco, Oakland, and their neighbors by increasing residential densities in key PDAs and select opportunity sites. Generally speaking, strategies include:
  - For San Jose, San Francisco, and Oakland, increase residential density in PDAs.
  - For cities along the El Camino Real and the East Bay Corridors, modestly increase residential density in PDAs with high levels of transit service.
  - Increase density on opportunity sites (e.g., large corporate campuses, shopping centers) along the Peninsula.
- Strategy 3B: Enable more commercial development in San Francisco and San Jose by removing development caps.
- Strategy 3C: Protect the region’s natural resources by avoiding development on adopted PCAs and accommodating all new growth within existing urban growth boundaries or urban limit lines, using city boundaries as a limit when a jurisdiction has no expansion limit.
- Strategy 3D: Encourage additional housing choices by allowing second units in San Francisco, San Jose, and Oakland; reducing parking minimums in these cities as well as PDAs with high levels of transit service in cities along the El Camino Real and East Bay Corridors; and directing affordable housing resources to retain and expand housing affordability in the three big cities.
- Strategy 3E: Use tax policies in San Francisco, San Jose, and Oakland to encourage higher-intensity urban uses and consider the application of regional fee structures to subsidize growth in lower VMT areas.

### **Transportation**

In order to make this high-density growth pattern feasible without significantly worsening traffic congestion or overloading existing transit systems, transit capacity improvements and demand management strategies will be prioritized to accommodate travel to, from, and within the core cities.

- Strategy 3A: Pursue expansion of the South Bay transit system to support high-density development across Silicon Valley, while at the same time prioritizing investment in core capacity projects in San Francisco and Oakland to enable high-density development. Key projects include:
  - 19th Avenue Subway and Downtown San Jose Subway
  - Full San Francisco BRT Network Buildout
  - VTA Light Rail Extensions in Mountain View, Sunnyvale, and East San Jose
  - Service Frequency Boosts for “Big 3” Cities’ Transit Operators
  - Other Core Capacity and Core Connectivity investments
- Strategy 3B: Link regional rail systems into the heart of the Bay Area’s two largest cities – San Francisco and San Jose – while boosting service frequencies to support increasingly-urban commute patterns. Key projects include:
  - BART to Silicon Valley
  - Caltrain Electrification and Extension to Transbay Transit Center
  - BART Metro Program
  - Enhanced Express Bus Services to/from “Big 3” Cities (Managed Lanes, Golden Gate, etc.)
- Strategy 3C: Convert HOV and general-purpose lanes to express lanes in lieu of all freeway expansion projects; support urban development in San Francisco by implementing cordon pricing and leveraging motorists’ tolls to pay for robust and time-competitive transit services.
  - Conversion-Only Express Lane Network (including Managed Lanes Network)
  - San Francisco Congestion Pricing
  - Increase toll rates on the Bay Bridge to manage congestion and fund supportive transit projects improving access to the Core.
- Strategy 3D: Align operating and maintenance funds to prioritize investments into high-growth cities and high-ridership systems; maximize shift of future toll revenue towards funding critical transit expansion/efficiency and active transportation projects in high-growth communities.

# Scenario Development Process





# Alternative Scenarios

Regional Advisory Working Group

Miriam Chion, Planning & Research Director, ABAG  
Ken Kirkey, Planning Director, MTC  
January 26, 2016

- Scenarios show different options for how the Bay Area can grow and change over time in ways that help us meet our goals for a more prosperous, sustainable, and equitable region.
- The alternative scenarios combine different strategies to highlight potential differences in the region's development pattern and transportation system.



# SCENARIOS APPROACH

- Develop 3 scenarios
- Construct a preferred scenario
- Balance sophistication with simplicity



# SCENARIO DEVELOPMENT PROCESS



# SCENARIO CONCEPTS

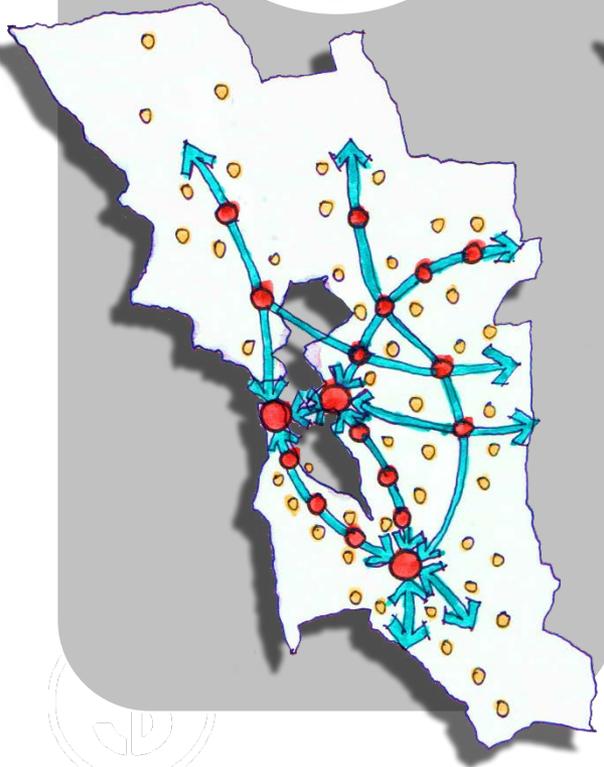
Keep in mind:

- Alternative scenarios are required as part of Plan Bay Area 2040
- Our goal today is to improve the three scenario concepts via policy strategies that preserve the character of our diverse communities while adapting to the challenges of future population growth.
- Common assumptions for all three scenarios concepts:
  - Plan Bay Area 2040 goals and targets
  - Regional Forecast totals
  - Regional Housing Need Allocation (RHNA)
  - Regional PDAs and PCAs Framework
  - Regional Transportation Revenue Sources
  - Regional Committed Transportation Network

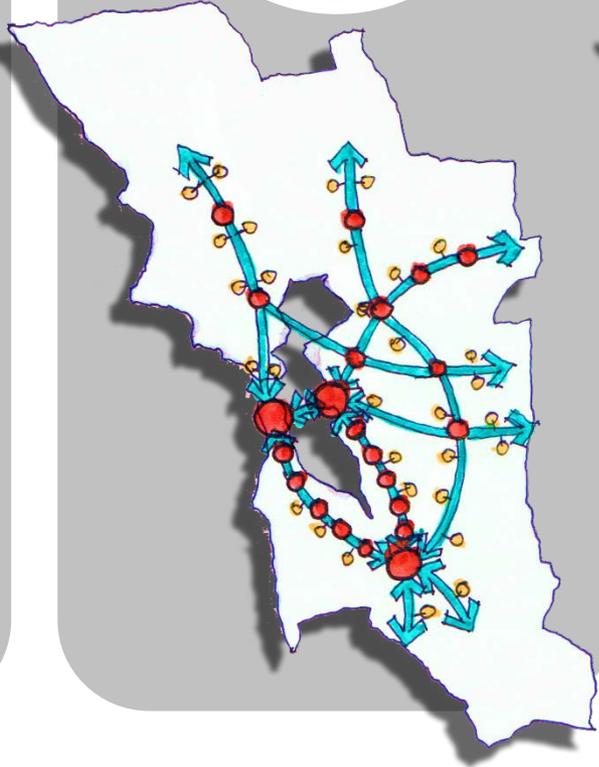


# SCENARIO CONCEPTS

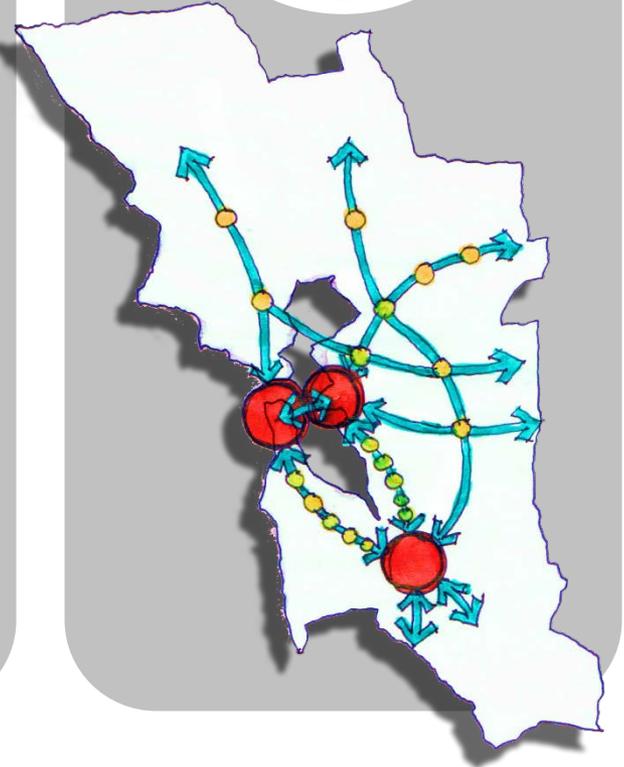
#1



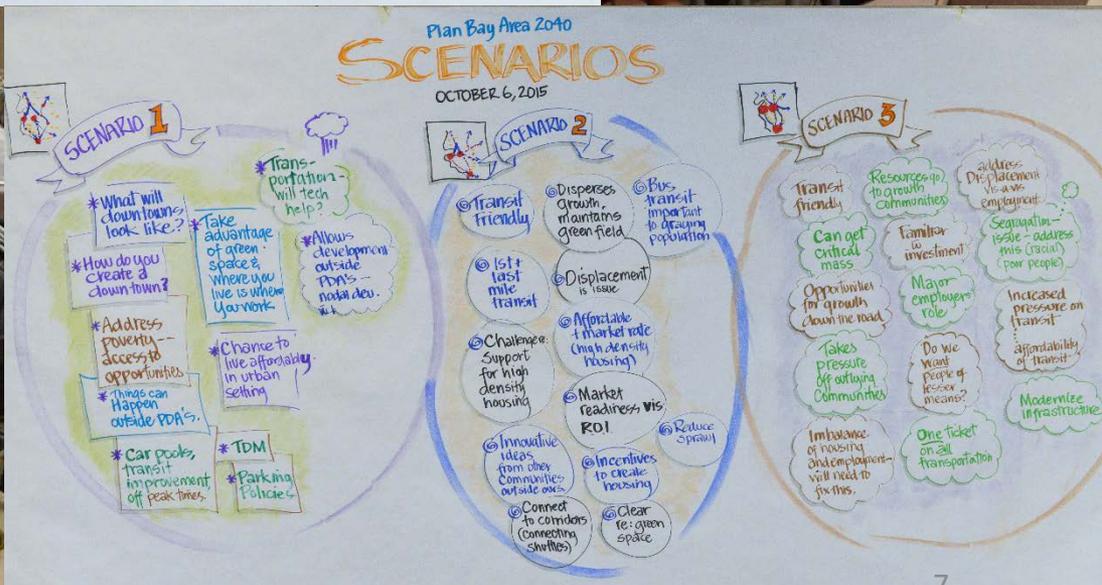
#2



#3

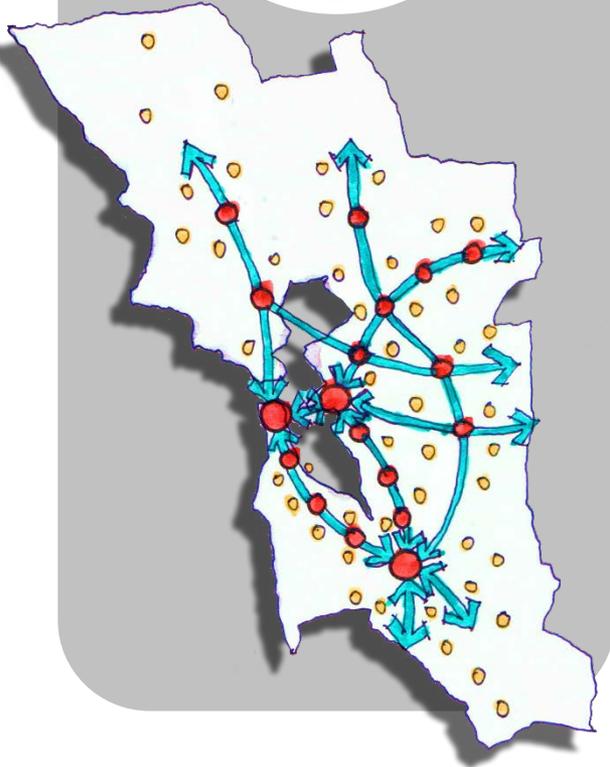


# SCENARIO WORKSHOPS



- Preliminary snapshot of each scenario's potential land use and transportation investment strategies
- Each scenario combines land use strategies to achieve different growth patterns
- Transportation investment strategies exemplify the types of major projects likely to be included under each scenario

#1



## 1A: More housing in PDAs around region

- Increase residential capacity in PDAs region-wide
- Limited growth and investments in 3 Big Cities

## 1B: Disperse commercial development

- More jobs in accessible clusters outside major corridors
- Limit commercial capacity in region's core

## 1C: Protect critical natural resources

- No development on PCAs
- Allow urban growth boundaries to expand faster

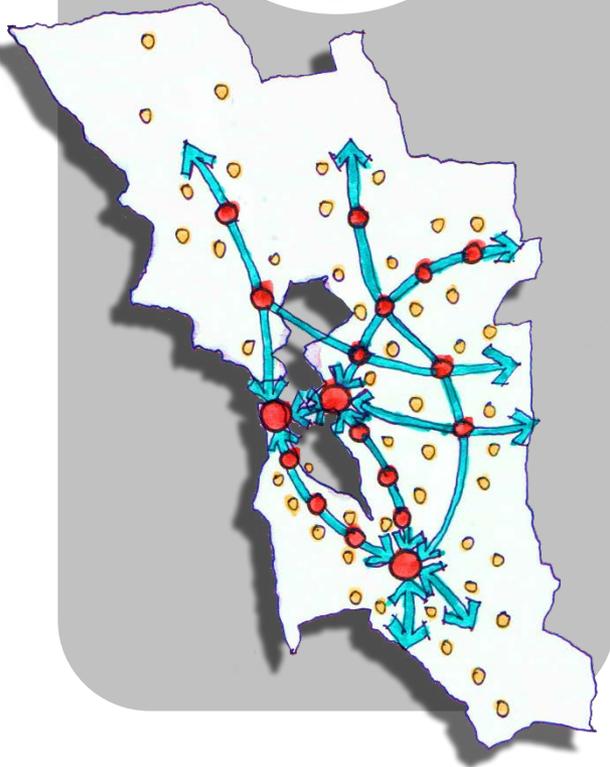
## 1D: Encourage housing choices

- Allow second units in all jurisdictions
- Reduce parking minimums in PDAs along regional rail

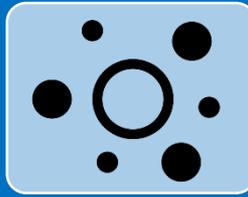
## 1E: Support affordable housing in PDAs

- Retain existing affordable housing in PDA jurisdictions
- Inclusionary zoning, tax increment financing, regional housing trust fund, etc. in PDA jurisdictions

#1



*Example projects shown below.*



## 1A: Transit to Dispersed Jobs

Local Suburban Bus Frequency Increases  
Express Buses on Managed Lane Network



## 1B: Expanded ITS and Express Lanes

- Full Buildout of Express Lanes + Managed Lane Network
- Columbus Day Initiative



## 1C: Strategic Highway Capacity

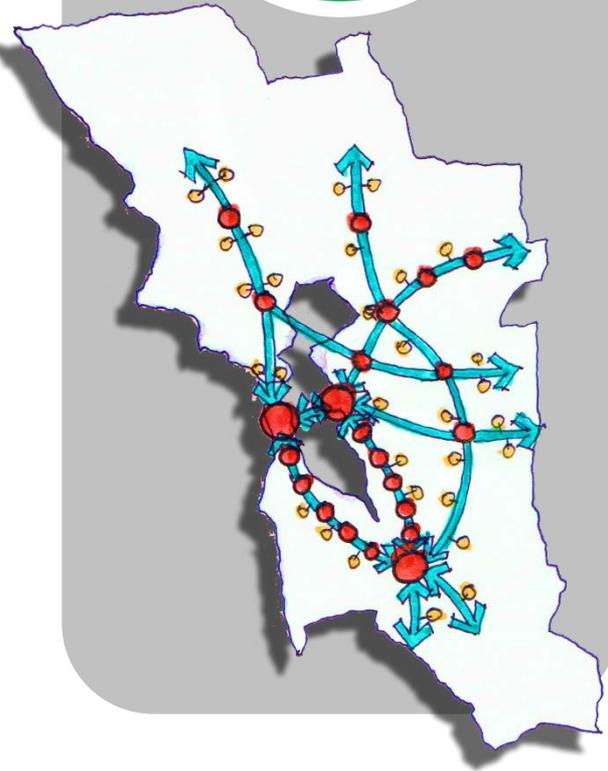
- SR-4 Widening + TriLink Tollways
- Marin-Sonoma Narrows + SR-37 Tollway
- I-680 Interchange Improvements & Widening



## 1D: Robust Funding for Maintenance

- Full Funding for Highways and Streets Maintenance
- Significant Funding for All Operators' Maintenance

#2



## 2A: More housing in PDAs around region

- Increase residential development capacity in PDAs based on identified PDA place type

## 2B: More jobs on corridors

## 2C: Protect critical natural resources

- No development on PCAs
- All growth within urban growth boundaries/limit lines

## 2D: Encourage housing choices

- Allow second units along major corridors
- Reduce parking minimums in PDAs along corridors with high levels of transit

## 2E: More affordable housing choices

- Retain affordable housing along major corridors
- Inclusionary zoning, tax increment financing, regional housing trust fund, etc. in jurisdictions along major corridors

#2

*Example projects shown below.*



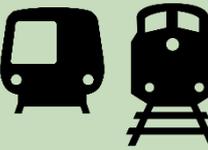
## 2A: Transit Efficiency Emphasis

- BART Metro Program
- Core BRT Lines in SF, South Bay, and East Bay
- Bus Frequency Increases in High-Opportunity Areas



## 2B: Bottlenecks and Reliever Routes

- Scaled-Back Express Lanes + Managed Lane Network
- Marin-Sonoma Narrows + SR-37 Tollway
- SR-84 and SR-262 Widening

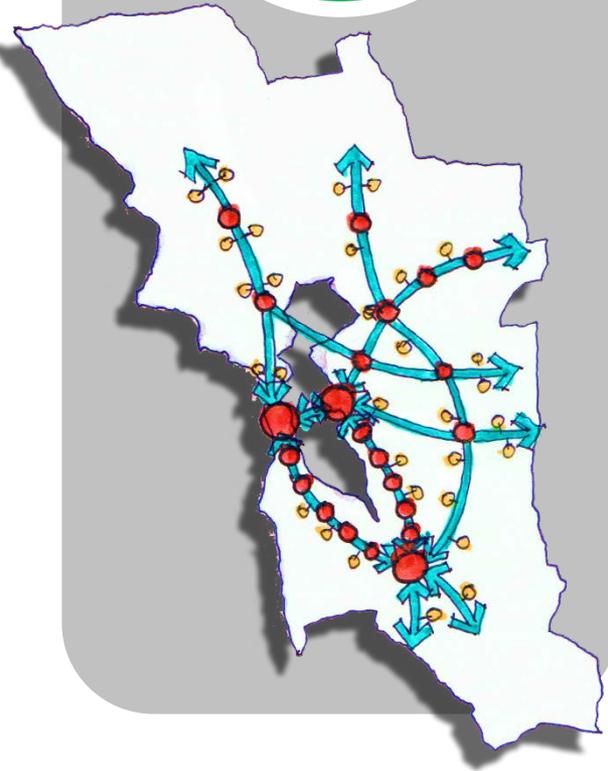


## 2C: High-Performing Transit Expansion

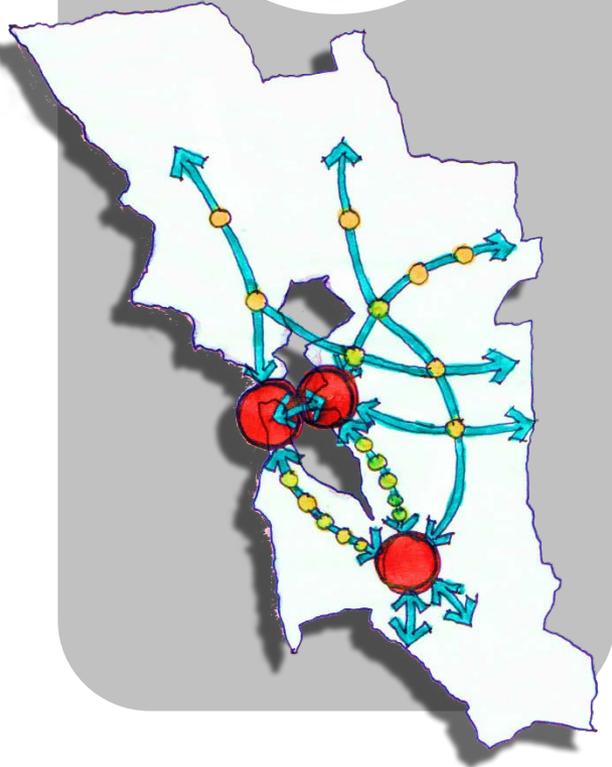
- BART to Silicon Valley
- Caltrain Electrification + Downtown Extension



## 2D: PDA-Focused Maintenance



#3



## 3A: More housing in Big 3 and neighbors

- Increase density in PDAs in Big 3 Cities
- Increase density in corridor PDAs with high transit
- Increase density on opportunity sites along Peninsula

## 3B: Enable more jobs in Big 3 Cities

- Remove development caps in San Francisco and San Jose

## 3C: Protect critical natural resources

- No development on PCAs
- All growth within urban growth boundaries/limit lines

## 3D: Encourage housing choices

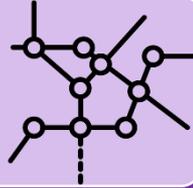
- Allow second units in Big 3 Cities
- Reduce parking minimums in Big 3 and PDAs with high transit along corridors
- Retain and expand housing affordability in Big 3

## 3E: Promote higher-intensity uses in Big 3

- Change tax policies, use regional fees to subsidize growth in low-VMT areas

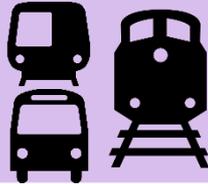
#3

*Example projects shown below.*



## 3A: “Big 3” High-Capacity Urban Transit

- 19<sup>th</sup> Avenue Subway + San Francisco BRT Network
- Downtown San Jose Subway + New LRT Lines
- Core Capacity Investments + Core Frequency Boosts



## 3B: Regional Rail & Bus to “Big 3”

- BART to Silicon Valley + BART Metro
- Caltrain Electrification + Downtown Extension
- Enhanced Express Bus Services to “Big 3” Cities



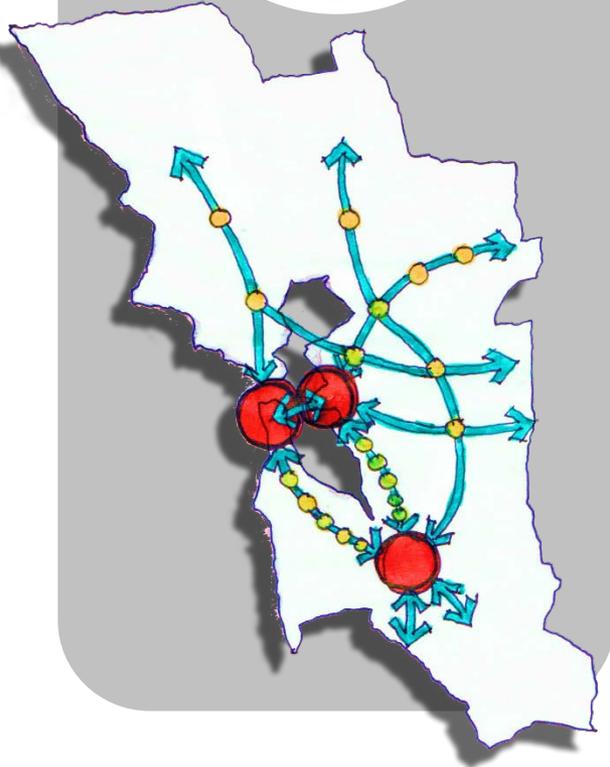
## 3C: Pricing in Lieu of Highway Widening

- Conversion-Only Express Lane Network
- San Francisco Congestion Pricing Programs



## 3D: Constrained Maintenance Funding

- O&M Funding Priority for High-Growth Cities



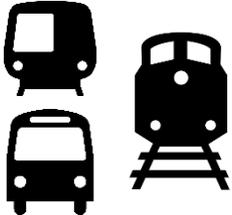
# INVESTMENT STRATEGIES

by Mode and Purpose

#1

#2

#3

Streets & Highways	State of Good Repair	● ● ●	● ●	●
	Efficiency	● ● ●	● ● ●	● ●
	Expansion / Extension	● ● ●	● ●	●
Public Transit	State of Good Repair	● ● ●	● ●	●
	Efficiency / Operations	● ●	● ● ●	● ● ●
	Expansion / Extension	●	● ●	● ● ●
	Bicycle / Pedestrian	● ●	● ●	● ●
	Climate Strategies	● ● ●	● ● ●	● ● ●

# INVESTMENT STRATEGIES

by Geography

#1

#2

#3



“Big 3”  
Cities

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•••

Bayside

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••

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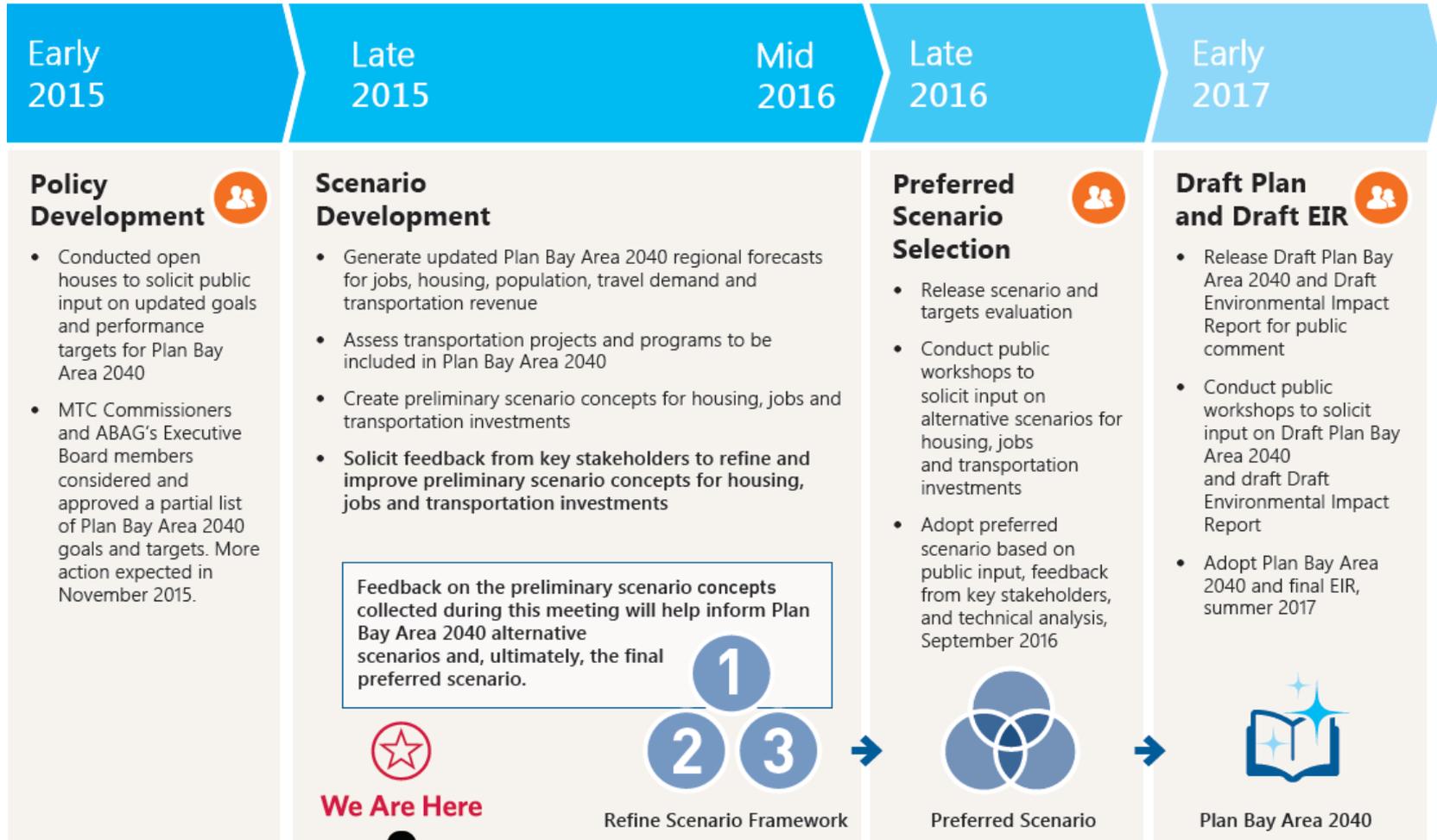
Inland

•••

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# SCENARIO DEVELOPMENT PROCESS



 Public Workshops and Outreach



Revised January 2016

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# Thank You





TO: Regional Advisory Working Group

DATE: March 29, 2016

FR: Kristen Carnarius, MTC and David Vautin, MTC

RE: Plan Bay Area 2040 Project Performance Assessment and State of Good Repair Performance Assessment: Draft Results & Findings

Later this year, the Commission will be discussing critical tradeoffs between transportation investments – ranging from major expansion projects to strategic efficiency improvements to funding for operations and maintenance. In order to better inform this dialogue, MTC has conducted a performance assessment of all major uncommitted transportation investments. Building upon the robust framework from Plan Bay Area 2013, this assessment incorporates state of good repair alongside expansion projects for the first time, given the increasing needs associated with the region’s aging infrastructure. This memorandum discusses the overall framework and presents key performance findings based on the draft results.

### **Objectives and Scope**

Given the Plan must be fiscally constrained, the performance assessment is designed to help determine which projects should be prioritized for inclusion in Plan Bay Area 2040 (Plan). By adopting the Plan committed projects policy in April 2015, the Commission took the first step towards establishing the projects and project types that the region will fund and implement. After the Call for Projects for the Plan in September 2015, MTC Planning staff screened submittals for uncommitted, major capital investments (total cost greater than \$100 million) that could be evaluated with the region’s travel demand model. Staff determined that approximately 80 expansion, efficiency, and state of good repair investments were eligible for the assessment, adding up to a request for \$70 billion in project funding and \$49 billion in maintenance funding. Smaller-scale projects will be prioritized by the CMAs later in the planning process, and they too will be subject to the Plan’s fiscal constraint.

### **Assessment Components**

The performance assessment includes two primary components, targets score and benefit-cost ratio, as well as several supplemental assessments:

- **Targets assessment.** Using qualitative criteria developed for each of the Plan’s adopted targets, we evaluate the degree to which each project impacts the region’s targets. All thirteen targets are weighted equally, meaning that scores can range from +13 (strong support for all targets) to -13 (adverse impacts on all targets).
- **Benefit-cost assessment.** Using the regional travel demand model (Travel Model One), we estimate and monetize a project’s impact on regional travel time, travel cost, air quality, safety, health, and noise for the year 2040. The benefit-cost ratio divides these benefits by the project’s net annualized cost to provide an estimate of its cost-effectiveness.

- **Additional assessments.** In addition to the two primary assessments, the performance assessment includes several additional components. The project-level equity assessment explores the project's impacts for equity-related targets and also identifies projects that benefit communities of concern and lower-income residents. Similarly, the benefit-cost confidence assessment and the sensitivity assessment flag potential limitations of the analysis for the purpose of transparency.

## Key Findings

### 1. **Maintaining regional transit infrastructure ranks as the top priority, given its high level of cost-effectiveness and strong support of adopted targets.**

Maintenance of rail and bus systems across the region was identified as one of the most cost-effective and sustainable investments under consideration in the Plan. In addition to shaving times off of transit commutes, achieving a state of good repair for transit infrastructure yields significant greenhouse gas reduction benefits and strongly supports most of the targets adopted by ABAG and the Commission. While transit efficiency and expansion projects perform quite well, transit maintenance investments perform even better – further emphasizing the imperative behind the region's "Fix It First" policy.

### 2. **Land use matters – projects that support Plan Bay Area 2013 growth patterns showed strong performance.**

Relying upon the focused growth pattern laid out by Plan Bay Area 2013, the performance assessment identifies a series of cost-effective transit investments, ranging from BART to Silicon Valley in the South Bay to Geary Bus Rapid Transit (BRT) in San Francisco. Furthermore, projects that boost frequencies on regional rail systems, or expand rapid fixed-guideway service to a growing job center, provide significant benefits; in particular, the BART Metro Program first analyzed in Plan Bay Area 2013 remains a cost-effective project for this planning cycle.

### 3. **Highly-used highways and transit systems remain the backbone of the region – both efficiency and maintenance investments prove highly cost-effective.**

Since the majority of Bay Area residents are forecasted to still drive in the year 2040, maintaining heavily-used facilities, while leveraging advanced technologies to smooth traffic flow proves to be an effective strategy. Highway pavement maintenance achieved the highest benefit-cost ratio of any investment analyzed for the Plan, given that additional funding to smooth the region's highways would actually decrease maintenance costs relative to today. Furthermore, technological improvements through the Columbus Day Initiative would generate significant time savings at a relatively low cost by taking advantage of ramp metering, signal coordination, and advanced queue warning signs.

### 4. **Projects in chronically congested corridors generally provide the biggest bang per buck.**

Similar to the Plan Bay Area 2013, bus rapid transit (BRT) projects are cost-effective ways to significantly improve transit travel times. They generate the highest benefit when they provide a competitive choice to driving within congested corridors, such as Geary BRT in San Francisco, San Pablo BRT in the East Bay, and El Camino BRT in the South Bay. Increasing ferry service from Vallejo and Richmond to San Francisco also showed a high-level of cost-

effectiveness, as it improves transit options within the congested Interstate 80 corridor. At the same time, projects that add either road capacity or transit service in areas with low travel demand relative to available capacity yield some of the lowest benefits.

**5. In general, congestion pricing and road efficiency projects outperform road expansion projects, reflecting lower costs and fewer environmental impacts.**

Among roadway investments, San Francisco's congestion pricing programs – both on Treasure Island and in downtown – performed the best on the targets assessment while generating benefits significantly greater than their costs. This stands in stark contrast to the performance of highway widening projects such as SR-152 Tollway, TriLink Tollway, and SR-17 Tollway. These investments feature significantly higher price tags than road efficiency investments while increasing development pressure far from existing urban centers, leading to low-performing designations on one or both scores.

**6. All of the region's highest-performing projects increase access to Communities of Concern.**

Every project with a high benefit-cost ratio and a strong support rating for regional targets improves access to at least one Community of Concern in the Bay Area. The notable result reflects the strong equity nexus in the adopted performance targets, with six of the thirteen targets having a clear nexus with social equity. Network-wide bus and rail service increases score the highest on these targets, which help to advance healthy and safe communities, affordable transportation options, access to jobs, and job creation.

### Next Steps

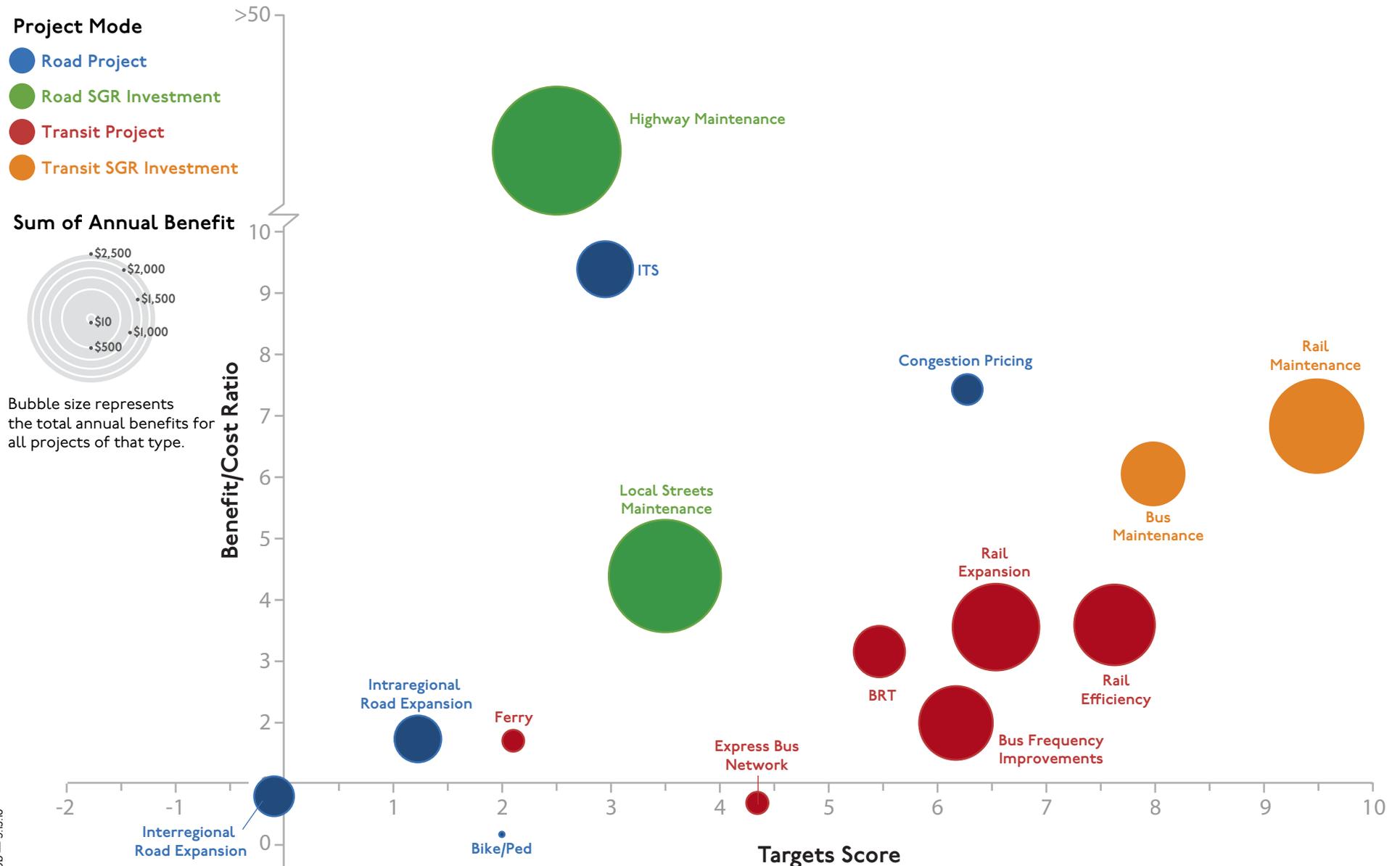
As we move towards a preferred scenario for the Plan, the performance results will play a key role in crafting a transportation investment strategy. Key milestones include:

- **Late March through April:** release of draft performance results; meetings with sponsors and CMAs to discuss findings and potential issues
- **May:** final performance results and staff recommendation for high- and low-performer thresholds under consideration for adoption by MTC Planning Committee
- **June:** deadline for low-performing project sponsors to submit compelling case to MTC staff
- **July:** staff recommendation for final actions on project performance assessment under consideration for adoption by MTC Planning Committee
- **September:** preferred scenario for the Plan slated for adoption by MTC and ABAG, incorporating outcomes of the performance assessment

**Attachments will be provided as handouts at the RAWG meeting on April 5, 2016 as follows:**

- Attachment A: Draft Performance Bubble Charts – Benefit-Cost and Targets Support
- Attachment B: Draft Project & State of Good Repair Performance Summary Table
- Attachment C: Identifying Projects Subject to Evaluation
- Attachment D: Detailed Project and State of Good Repair Performance Documentation Online
- PowerPoint

### Project Performance Assessment: Overall Draft Results by Project Type



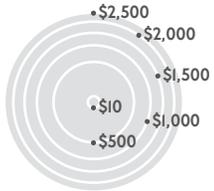
Project assessment of all express lane investments is not yet complete and therefore is not reflected on this chart; these projects will be added when evaluation is complete in April 2016. State of good repair (SGR) investment bubbles on this chart reflect the evaluation of preserve conditions vs. no funding.

## Project Performance Assessment: Draft Results for Road Projects

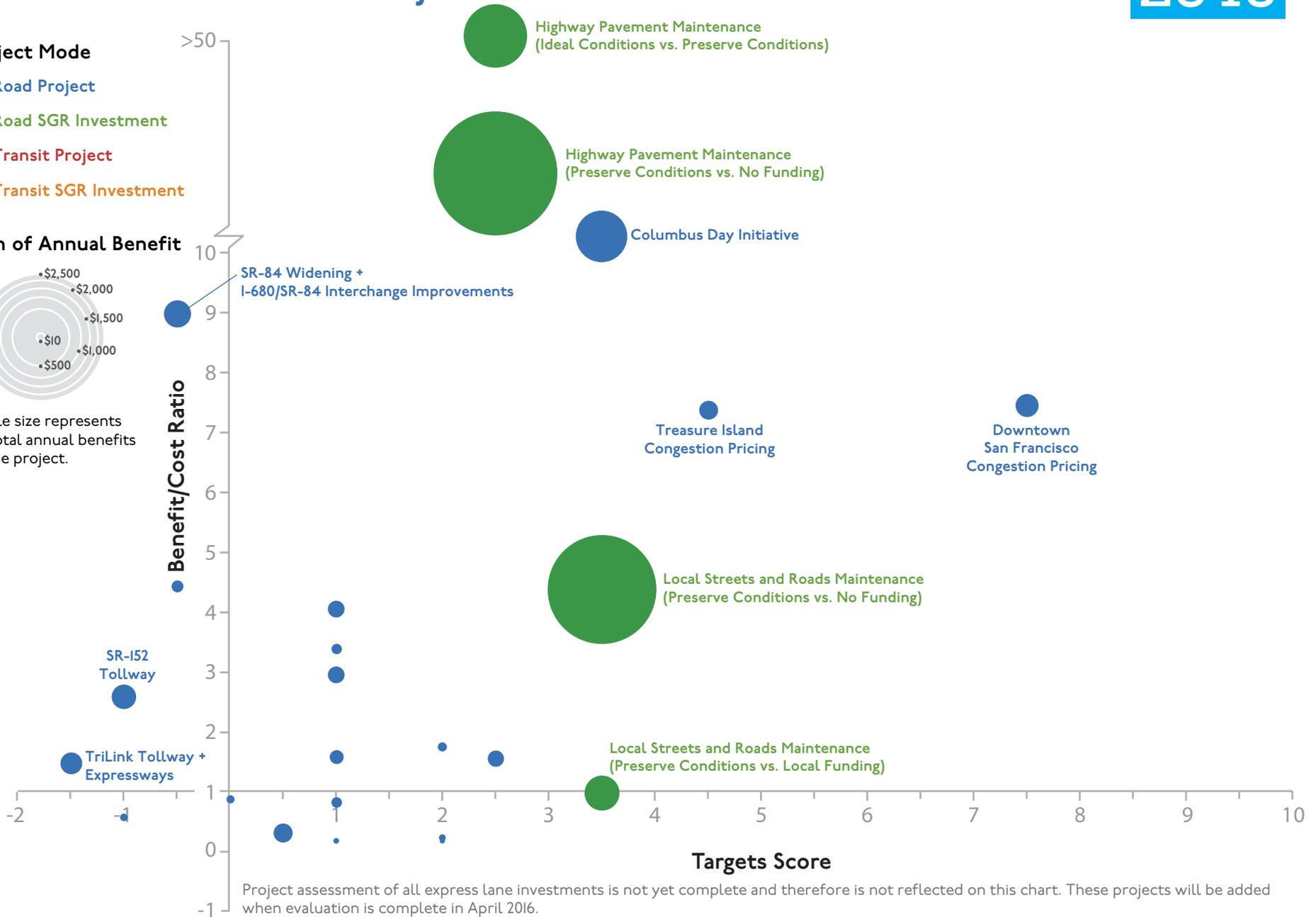
### Project Mode

- Road Project
- Road SGR Investment
- Transit Project
- Transit SGR Investment

### Sum of Annual Benefit



Bubble size represents the total annual benefits for the project.



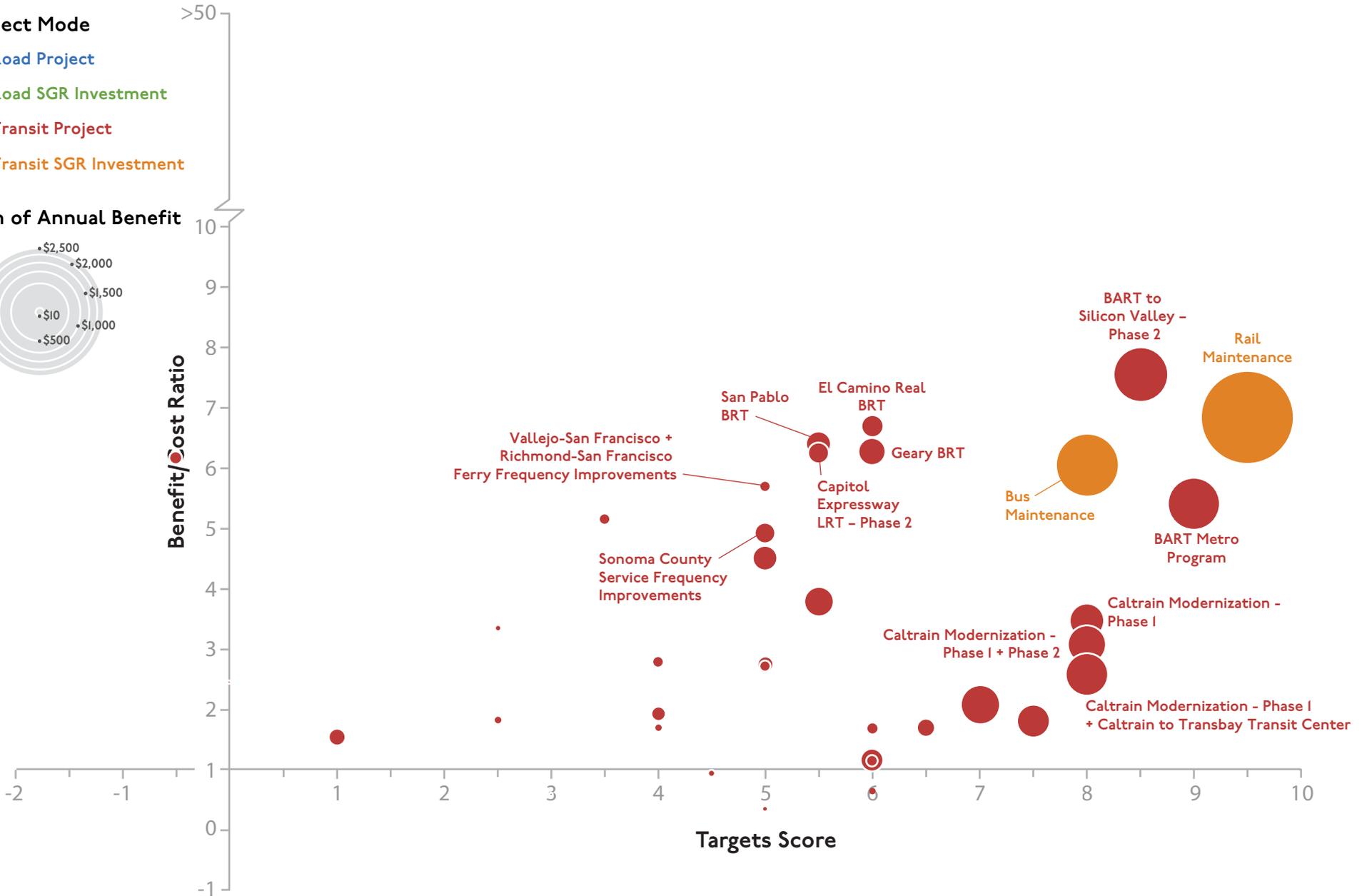
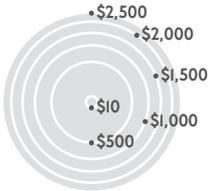
Project assessment of all express lane investments is not yet complete and therefore is not reflected on this chart. These projects will be added when evaluation is complete in April 2016.

## Project Performance Assessment: Draft Results for Transit Projects

### Project Mode

- Road Project
- Road SGR Investment
- Transit Project
- Transit SGR Investment

### Sum of Annual Benefit



ROW	ID	PROJECT NAME	LOCATION (COUNTY)	PROJECT TYPE	ANNUAL BENEFIT	ANNUAL COST	B/C RATIO	TARGETS SCORE
1	1503	Highway Pavement Maintenance (Ideal Conditions vs. Preserve Conditions)	Multi-County	Highway Maintenance	\$638	(\$1)	>50	2.5
2	1502	Highway Pavement Maintenance (Preserve Conditions vs. No Funding)	Multi-County	Highway Maintenance	\$2,433	\$144	17	2.5
3	1301	Columbus Day Initiative	Multi-County	ITS	\$421	\$38	11	3.5
4	209	SR-84 Widening + I-680/SR-84 Interchange Improvements (Livermore to I-680)	Alameda	Intraregional Road Expansion	\$116	\$13	9	-0.5
5	501	BART to Silicon Valley – Phase 2 (Berryessa to Santa Clara)	Santa Clara	Rail Expansion	\$472	\$62	8	8.5
6	306	Downtown San Francisco Congestion Pricing (Toll + Transit Improvements)	Multi-County	Congestion Pricing	\$84	\$11	7	7.5
7	302	Treasure Island Congestion Pricing (Toll + Transit Improvements)	San Francisco	Congestion Pricing	\$56	\$8	7	4.5
8	1651	Public Transit Maintenance - Rail Operators (Preserve Conditions vs. No Funding)	Multi-County	Rail Maintenance	\$1,351	\$198	7	9.5
9	506	El Camino Real BRT (Palo Alto to San Jose)	Santa Clara	BRT	\$85	\$13	7	6.0
10	207	San Pablo BRT (San Pablo to Oakland)	Multi-County	BRT	\$106	\$16	6	5.5
11	301	Geary BRT	San Francisco	BRT	\$124	\$20	6	6.0
12	505	Capitol Expressway LRT – Phase 2 (Alum Rock to Eastridge)	Santa Clara	Rail Expansion	\$77	\$12	6	5.5
13	518	ACE Alviso Double-Tracking	Santa Clara	Rail Efficiency	\$36	\$6	6	-0.5
14	1650	Public Transit Maintenance - Bus Operators (Preserve Conditions vs. No Funding)	Multi-County	Bus Maintenance	\$623	\$103	6	8.0
15	1203	Vallejo-San Francisco + Richmond-San Francisco Ferry Frequency Improvements	Multi-County	Ferry	\$29	\$5	6	5.0
16	1001	BART Metro Program (Service Frequency Increase + Bay Fair Operational Improvements + SFO Airport Express Train)	Multi-County	Rail Efficiency	\$430	\$80	5	9.0
17	203	Irvington BART Infill Station	Alameda	Rail Efficiency	\$30	\$6	5	3.5
18	903	Sonoma County Service Frequency Improvements	Sonoma	Bus Frequency Improvements	\$75	\$15	5	5.0
19	523	VTA Service Frequency Improvements (15-Minute Frequencies)	Santa Clara	Bus Frequency Improvements	\$103	\$23	4	5.0
20	211	SR-262 Widening (I-680 to I-880)	Alameda	Intraregional Road Expansion	\$22	\$5	4	-0.5
21	1403	Local Streets and Roads Maintenance (Preserve Conditions vs. No Funding)	Multi-County	Local Streets Maintenance	\$1,875	\$428	4	3.5
22	210	I-580 ITS Improvements	Alameda	ITS	\$44	\$11	4	1.0
23	504	Stevens Creek LRT	Santa Clara	Rail Expansion	\$144	\$38	4	5.5
24	1101	Caltrain Modernization - Phase 1 (Electrification + Service Frequency Increase)	Multi-County	Rail Efficiency	\$195	\$56	3	8.0
25	605	Jepson Parkway (Fairfield to Vacaville)	Solano	Intraregional Road Expansion	\$17	\$5	3	1.0
26	1202	Oakland-Alameda-San Francisco Ferry Frequency Improvements	Multi-County	Ferry	\$16	\$5	3	2.5

ROW	ID	PROJECT NAME	LOCATION (COUNTY)	PROJECT TYPE	ANNUAL BENEFIT	ANNUAL COST	B/C RATIO	TARGETS SCORE
27	1102	Caltrain Modernization - Phase 1 + Phase 2 (Electrification + Service Frequency Increase + Capacity Expansion)	Multi-County	Rail Efficiency	\$236	\$77	3	8.0
28	411	SR-4 Auxiliary Lanes - Phases 1 + 2 (Concord to Pittsburg)	Contra Costa	Intraregional Road Expansion	\$44	\$15	3	1.0
29	507	Vasona LRT – Phase 2 (Winchester to Vasona Junction)	Santa Clara	Rail Expansion	\$30	\$11	3	4.0
30	515	Tasman West LRT Realignment (Fair Oaks to Mountain View)	Santa Clara	Rail Expansion	\$48	\$18	3	5.0
31	517	Stevens Creek BRT	Santa Clara	BRT	\$29	\$11	3	5.0
32	503	SR-152 Tollway (Gilroy to Los Banos)	Santa Clara	Interregional Road Expansion	\$95	\$37	3	-1.0
33	307	Caltrain Modernization - Phase 1 (Electrification + Service Frequency Increase) + Caltrain to Transbay Transit Center	Multi-County	Rail Expansion	\$290	\$113	3	8.0
34	1206	Alameda Point-San Francisco Ferry	Multi-County	Ferry	\$12	\$5	2	0.0
35	1204	Berkeley-San Francisco Ferry	Multi-County	Ferry	\$10	\$4	2	3.0
36	206	AC Transit Service Frequency Improvements	Multi-County	Bus Frequency Improvements	\$248	\$120	2	7.0
37	513	North Bayshore LRT (NASA/Bayshore to Google)	Santa Clara	Rail Expansion	\$42	\$22	2	4.0
38	604	Solano County Express Bus Network	Multi-County	Express Bus Network	\$21	\$12	2	2.5
39	522	VTA Service Frequency Improvements (10-Minute Frequencies)	Santa Clara	Bus Frequency Improvements	\$177	\$99	2	7.5
40	407	SR-4 Auxiliary Lanes - Phase 1 (Concord to Pittsburg)	Contra Costa	Intraregional Road Expansion	\$13	\$8	2	2.0
41	402	eBART – Phase 2 (Antioch to Brentwood)	Contra Costa	Rail Expansion	\$21	\$12	2	4.0
42	311	Muni Forward Program	San Francisco	Bus Frequency Improvements	\$60	\$36	2	6.5
43	331	Better Market Street	San Francisco	BRT	\$32	\$19	2	6.0
44	901	US-101 Marin-Sonoma Narrows HOV Lanes – Phase 2	Multi-County	Intraregional Road Expansion	\$31	\$19	2	1.0
45	409	I-680/SR-4 Interchange Improvements + HOV Direct Connector	Contra Costa	Intraregional Road Expansion	\$42	\$27	2	2.5
46	103	El Camino Real Rapid Bus (Daly City to Palo Alto)	San Mateo	Bus Frequency Improvements	\$54	\$36	2	1.0
47	401	TriLink Tollway + Expressways (Brentwood to Tracy/Altamont Pass)	Multi-County	Interregional Road Expansion	\$75	\$51	1	-1.5
48	801	Golden Gate Transit Frequency Improvements	Multi-County	Express Bus Network	\$11	\$8	1	4.5
49	313	Muni Service Frequency Improvements	San Francisco	Bus Frequency Improvements	\$89	\$79	1	6.0
50	312	19th Avenue Subway (West Portal to Parkmerced)	San Francisco	Rail Efficiency	\$30	\$27	1	6.0
51	1413	Local Streets and Roads Maintenance (Preserve Conditions vs. Local Funding)	Multi-County	Local Streets Maintenance	\$194	\$198	1	3.5
52	516	VTA Express Bus Frequency Improvements	Santa Clara	Express Bus Network	\$18	\$19	0.9	4.5

ROW	ID	PROJECT NAME	LOCATION (COUNTY)	PROJECT TYPE	ANNUAL BENEFIT	ANNUAL COST	B/C RATIO	TARGETS SCORE
53	202	East-West Connector (Fremont to Union City)	Alameda	Intraregional Road Expansion	\$10	\$12	0.9	0.0
54	406	I-680/SR-4 Interchange Improvements	Contra Costa	Intraregional Road Expansion	\$18	\$22	0.8	1.0
55	304	Southeast Waterfront Transportation Improvements (Hunters Point Transit Center + New Express Bus Services)	San Francisco	Express Bus Network	\$16	\$27	0.6	6.0
56	410	Antioch-Martinez-Hercules-San Francisco Ferry	Multi-County	Ferry	\$9	\$16	0.6	1.5
57	403	I-680 Express Bus Frequency Improvements	Multi-County	Express Bus Network	\$12	\$21	0.6	3.0
58	404	SR-4 Widening (Antioch to Discovery Bay)	Contra Costa	Interregional Road Expansion	\$9	\$17	0.5	-1.0
59	510	Downtown San Jose Subway (Japantown to Convention Center)	Santa Clara	Rail Efficiency	\$10	\$18	0.5	5.5
60	308	San Francisco Express Bus Network	Multi-County	Express Bus Network	\$5	\$14	0.3	4.0
61	104	Geneva-Harney BRT + Corridor Improvements	Multi-County	BRT	\$15	\$46	0.3	5.0
62	508	SR-17 Tollway + Santa Cruz LRT (Los Gatos to Santa Cruz)	Santa Clara	Interregional Road Expansion	\$57	\$200	0.3	0.5
63	519	Lawrence Freeway	Santa Clara	Intraregional Road Expansion	\$7	\$34	0.2	2.0
64	204	Broadway Streetcar	Alameda	Rail Expansion	\$2	\$14	0.2	2.5
65	601	I-80/I-680/SR-12 Interchange Improvements	Solano	Intraregional Road Expansion	\$5	\$32	0.2	1.0
66	1304	Bay Bridge West Span Bike Path	San Francisco	Bike/Ped	\$4	\$30	0.1	2.0
67	905	SMART – Phase 3 (Santa Rosa Airport to Cloverdale)	Sonoma	Rail Expansion	\$0	\$12	0	4.0
68	1201	San Francisco-Redwood City + Oakland-Redwood City Ferry	Multi-County	Ferry	\$0	\$8	0	2.0
69	205_15	Express Bus Bay Bridge Contraflow Lane	Multi-County	Express Bus Network	\$0	\$10	0	5.0
70	1407	Local Streets and Roads Maintenance (Ideal Conditions vs. Preserve Conditions)	Multi-County	Local Streets Maintenance	TBD	TBD	TBD	3.5
71	102	US-101 HOV Lanes (San Francisco + San Mateo Counties)	Multi-County	Express Lanes	TBD	TBD	TBD	0.5
72	201	ACTC Express Lane Network	Alameda	Express Lanes	TBD	TBD	TBD	1.5
73	101	US-101 Express Lanes (San Francisco + San Mateo Counties)	Multi-County	Express Lanes	TBD	TBD	TBD	0.0
74	502	VTA Express Lane Network	Santa Clara	Express Lanes	TBD	TBD	TBD	3.0
75	1302	MTC Express Lane Network	Multi-County	Express Lanes	TBD	TBD	TBD	2.5
76	1305	Managed Lanes Implementation Plan	Multi-County	Express Lanes	TBD	TBD	TBD	6.0

all benefits and costs are in millions of 2017 dollars

## Attachment C: Identifying Projects Subject to Evaluation

### Projects Subject to Evaluation

Committed projects and programs, as defined by MTC Resolution No. 4182 in April 2015, are not subject to project performance assessment. Of the uncommitted projects submitted in the Call for Projects by the September 2015 deadline, MTC staff evaluated projects that met the following criteria:

1. The project impacts can be evaluated with the regional travel demand model.
2. The total project costs are at least \$100 million (as measured in 2017 dollars).

Examples of projects that were evaluated:

- New/enhanced transit service, including travel time savings of rapid bus or bus rapid transit (BRT) infrastructure
- Freeway-to-freeway interchanges
- Freeway widenings, including HOV lanes & auxiliary lanes
- Capacity-increasing improvements to state highways and major arterials
- State of good repair investments for state highways and local streets & roads
- State of good repair investments for public transit systems

Examples of projects that were not evaluated even if met the cost threshold:

- Intersection improvements or other non-capacity-increasing improvements
- Freeway-to-freeway interchanges that do not include mainline widening
- Local interchanges
- Transit center improvements and parking expansion
- Transit projects that increase capacity within trains and on platforms but that do not result in increased frequency or travel time improvements
- Grade separations

Unlike Plan Bay Area 2013, staff **did not** evaluate uncommitted regional programs for Plan Bay Area 2040. These programs will be considered during the investment strategy separately from the performance assessment. Staff also **did not** evaluate any project with total costs less than \$100 million. These projects will be prioritized by Congestion Management Agencies, subject to fiscal constraint.

Per this evaluation criteria, all committed projects and projects that are currently under construction are exempt from the project performance evaluation for Plan Bay Area 2040. A list of major capacity increasing projects that we are not evaluating is included in **Table C-1** on the following page. A full accounting of which projects were assessed in Plan Bay Area and that are no longer subject to the evaluation will be provided as an online resource (see Attachment D).

**Table C-1: Committed Capacity-Increasing Projects** (*exempt from performance assessment*)

Committed Category	Project Name	Notes
Analyzed in PBA and committed in PBA40	<b>SR-4 Bypass</b> (Antioch to Brentwood)	Now has full funding - reclassified as committed.
	<b>East Bay BRT</b> (Oakland to San Leandro)	Now has EIR/EIS + full funding - reclassified as committed.
	<b>Van Ness BRT</b>	Now has EIR/EIS + full funding - reclassified as committed.
	<b>Dumbarton Express Bus Frequency Improvements</b>	Now has full funding - reclassified as committed.
	<b>Richmond-San Francisco Ferry</b>	Now has full funding - reclassified as committed.
	<b>SMART – Phase 2</b> (San Rafael to Larkspur)	Now has full funding - reclassified as committed.
Committed in PBA & PBA40	<b>SR-4 Widening</b> (Pittsburg to Antioch)	
	<b>Central Subway</b> (Caltrain to Chinatown)	
	<b>BART to Silicon Valley – Phase 1</b> (South Fremont/Warm Springs to Berryessa)	
	<b>eBART – Phase 1</b> (Pittsburg/Bay Point to Antioch)	Project renaming reflects existence of Phase 2 proposal.
	<b>Transbay Transit Center</b>	Project will be complete in 2017.
	<b>SR-4/SR-160 Direct Connector</b>	Project will be complete in 2017.
Completed or construction underway	<b>King Road Rapid Bus</b> (Berryessa to Downtown San Jose)	Project was merged into BART to Silicon Valley (Phase 1).
	<b>Presidio Parkway</b>	Project will be complete in 2016.
	<b>Oakland Airport Connector</b>	Project was completed in 2014.
	<b>BART to Warm Springs</b>	Project will be complete in 2016.
	<b>Caldecott Tunnel</b>	Project was completed in 2013.
	<b>SMART Initial Operating Segment</b>	Project will be complete in 2016.
	<b>Marin-Sonoma Narrows</b> (Phase 1: Interchanges in Novato & Petaluma)	Project was completed in 2015.
	<b>Santa Clara-Alum Rock BRT</b>	Project will be complete in 2016.
	<b>SR-12 Widening</b> (Jameson Canyon)	Project was completed in 2014.
	<b>SR-238 Hayward Operational Improvements</b>	Project was completed in 2013.
	<b>US-101 HOV Lanes</b> (Santa Rosa Avenue to Pepper Road)	Project was completed in 2013.
	<b>US-101 Auxiliary Lanes</b> (SR-85 to Embarcadero Road)	Project was completed in 2014.
	<b>I-880 HOV Lanes</b> (SR-237 to US-101)	Project was completed in 2013.
	<b>I-80 ITS Improvements</b>	Project will be complete in 2016.
<b>Tasman Double-Tracking</b> (Mountain View to Alum Rock Direct LRT Service)	Project will be complete in 2016.	
<b>I-580 Altamont Pass Truck Climbing Lane</b>	Project will be complete in 2016.	

## Attachment D: Detailed Project and State of Good Repair Performance Documentation Online

For more information on all aspects of the project performance assessment and the state of good repair performance assessment, please take advantage of our online resources on the following website:

<http://metropolitantransportationcommission.github.io/performance/>

### Plan Bay Area 2040 Performance Dashboard

Data available includes:

- Complete list of project and state of good repair performance results (sortable by project location)
- Interactive bubble chart
- Breakdown of quantified project benefits
- Breakdown of targets score
- Confidence results by project
- Equity results by project

### Plan Bay Area 2040 Project-Level Equity Map

This interactive tool allows sponsors, stakeholders, and members of the public to explore all of the major uncommitted transportation investments analyzed – and see which projects provide access to the draft Plan Bay Area 2040 Communities of Concern.

### Reference Documentation

1. *Plan Bay Area 2040 Performance - Approach to Benefits and Costs* – describes methodology for estimating benefits using the travel model, provides valuations for benefits, and describes the calculations for project costs
2. *Plan Bay Area 2040 Performance - Targets Score Methodology* – provides a table of the targets criteria and explains the methodology
3. *Plan Bay Area 2040 Performance - Confidence Assessment Methodology* – highlights the overall framework of the benefit-cost confidence assessment discloses potential limitations in the benefit-cost assessment related to travel model accuracy, project purpose considerations, and project implementation timeline
4. *Plan Bay Area 2040 Performance - Highway and Local Streets State of Good Repair Methodology* – draft methodology document for road state of good repair discussed with the Local Streets and Roads Working Group in February 2016
5. *Plan Bay Area 2040 Performance - Public Transit State of Good Repair Methodology* – draft methodology document for road state of good repair discussed with the Transit Asset Management Steering Committee in February 2016
6. *Plan Bay Area 2040 Performance - Sensitivity Testing* – explores sensitivity of benefit-cost results (*not currently available; will be released by the end of April*)
7. *Comparison of Plan Bay Area and Plan Bay Area 2040 Project Performance Lists*

Plan  
Bay Area  
2040

# PROJECT PERFORMANCE ASSESSMENT DRAFT RESULTS



Image Source: <https://www.flickr.com/photos/gwoodhouse/2177115282>

Image Source: <https://www.flickr.com/photos/temasana/6911027>

**Kristen Carnarius and Dave Vautin**  
April 5, 2016 – *Regional Advisory Working Group*

# The Big Picture

## Regional Transportation Plan INVESTMENT STRATEGY

MAJOR CAPITAL PROJECTS  
PERFORMANCE ASSESSMENT

STATE OF GOOD REPAIR  
PERFORMANCE ASSESSMENT

SCENARIO  
PERFORMANCE ASSESSMENT

NEEDS ASSESSMENTS

COUNTY PRIORITIES

# How do we evaluate projects?

## Rely upon the framework established in Plan Bay Area.

- 1 Consistently evaluate uncommitted major transportation investments
- 2 Identify **outliers** in performance
- 3 Prioritize funding for high-performing projects

# Which projects?

Does the project...

- ✔ Need regional funding AND
- ✔ Cost more than \$100M AND
- ✔ Increase capacity or address state of good repair?

**If so,** then the project is evaluated as part of the performance assessment!



**Road Efficiency**



**Transit Efficiency**

**Transit Expansion**



**Road Expansion**



**Regional Transit Maintenance**

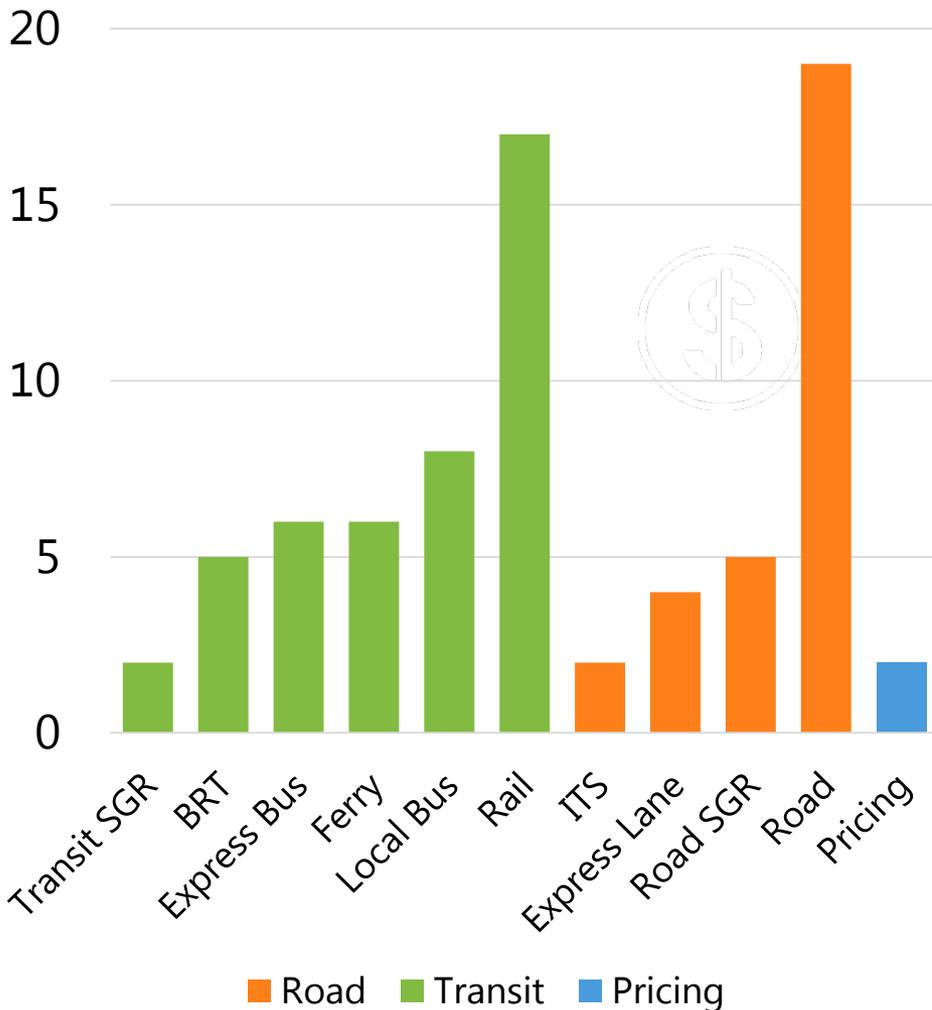


**Regional Road Maintenance**

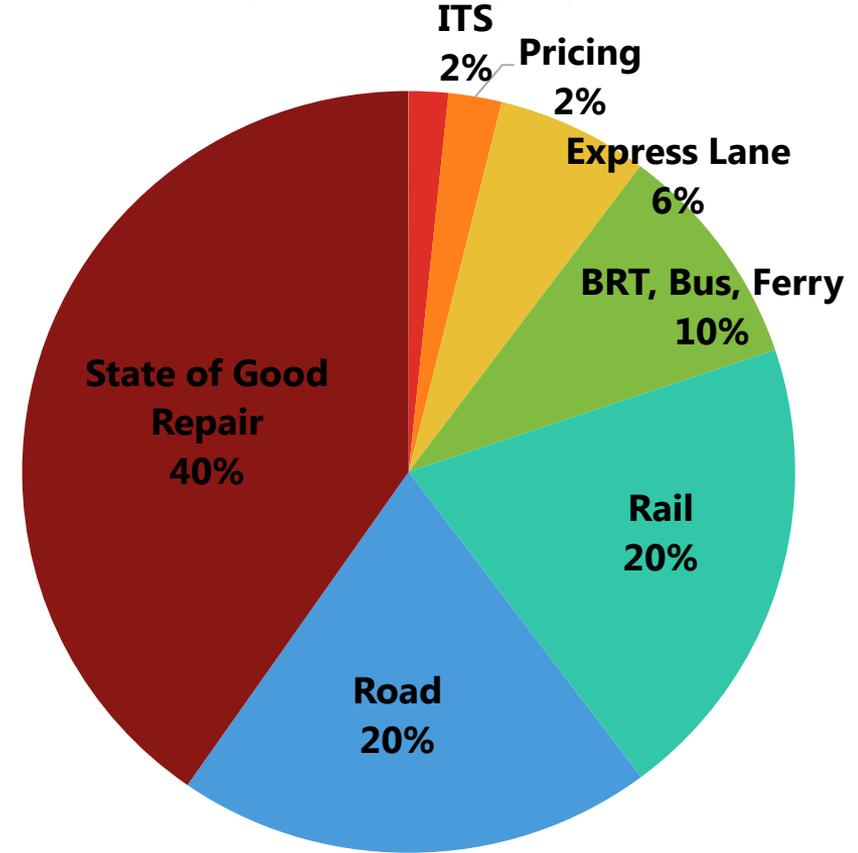


# Project Performance List

**Number of Projects by Type**  
(total ~ 80)

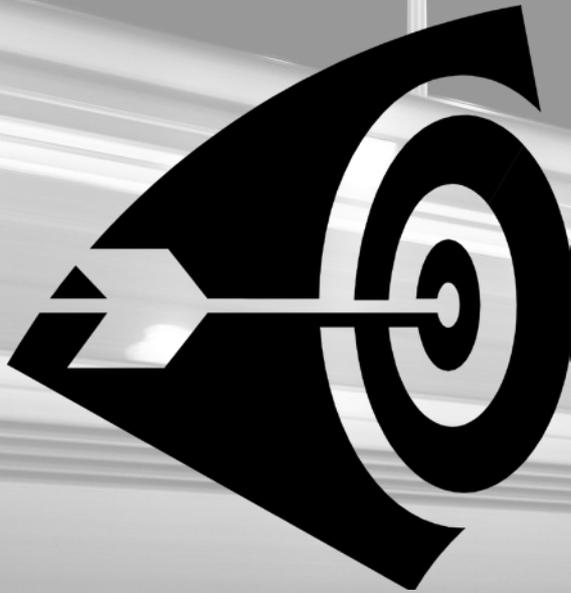


**Project Cost by Type**



**Total Cost = \$120 billion**

**Amount available in PBA = \$36 billion**



## TARGETS ASSESSMENT

*Assessed qualitatively using  
target scores*

Determine impact on adopted  
targets

## BENEFIT-COST ASSESSMENT

*Assessed quantitatively using  
MTC Travel Model*

Evaluate relative cost-  
effectiveness



# TARGETS ASSESSMENT

Assessed qualitatively using target scores



Climate Protection



Affordable Housing



Non-Auto Mode Share



Adequate Housing



Displacement Risk



Road State of Good Repair



Healthy & Safe Communities



Access to Jobs



Transit State of Good Repair



Open Space & Agricultural Preservation



Job Creation



Housing & Transportation Costs



Goods Movement

**Maximum score:**

**13**

*if the project supports all 13 targets strongly*



# BENEFIT – COST ASSESSMENT

*Assessed quantitatively using MTC Travel Model One*

Plan  
BayArea  
2040

## Benefits (\$)

*Travel time + cost*

*Emissions*

*Collisions*

*Health*

---

## Costs (\$)

*Capital*

*Net operating & maintenance*

### Key Assumptions:

- Baseline transportation network ~ 2018
- Adopted 2040 land pattern from Plan Bay Area

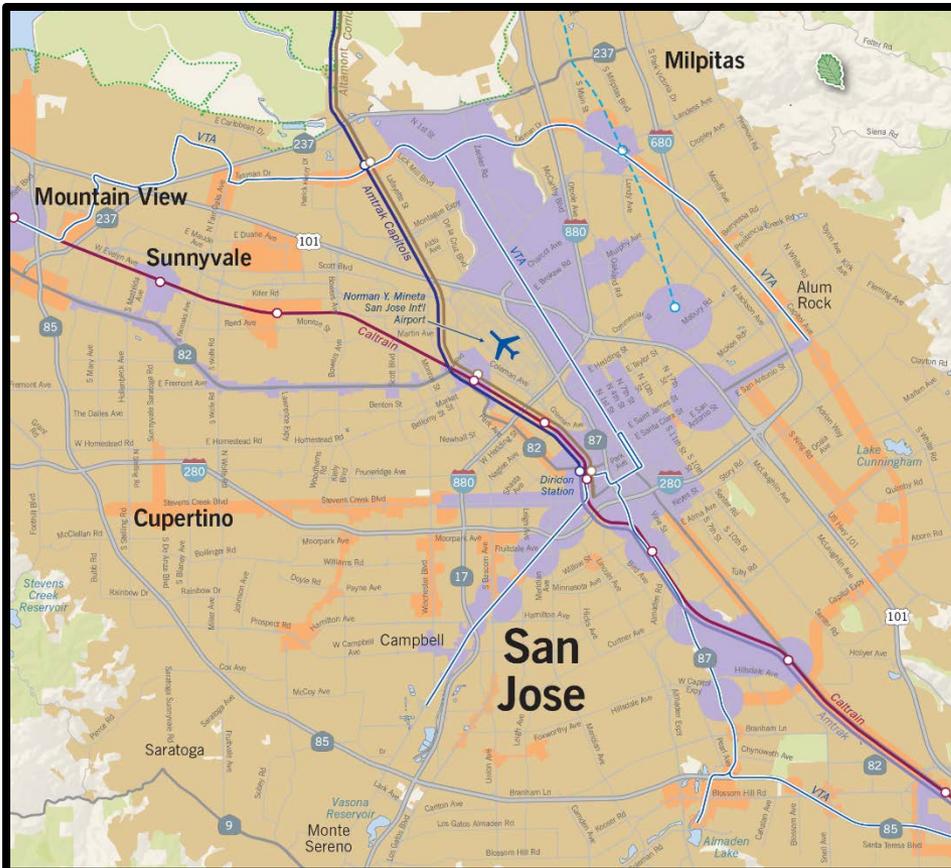


# The Bay Area in 2040

## From Plan Bay Area:

Almost **40%** of the **jobs** and **housing units** added from 2010 to 2040 will be in the region's 3 largest cities: **San Jose, San Francisco, and Oakland**

San Jose job distribution in year 2040



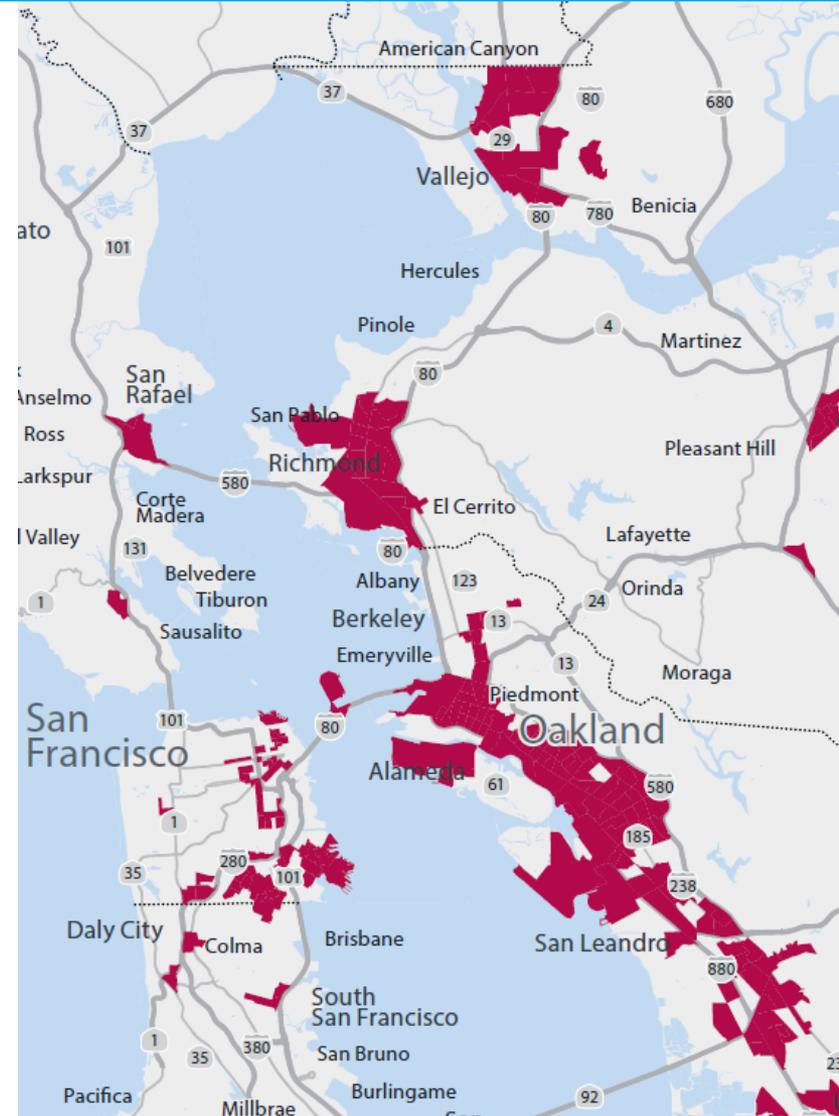


## Project-Level Equity Assessment

- Equity Targets Score
- Relationship to Communities of Concern

## Benefit-Cost Supplemental Assessments

- Sensitivity Testing (*testing input assumptions*)
- Confidence Assessment (*disclosing limitations*)



# Key Findings

1

Maintaining regional transit infrastructure ranks as the **top priority**, given its high level of cost-effectiveness and strong support of adopted targets.



2

**Land use matters** – projects that support Plan Bay Area growth patterns showed strong performance.



Source: Peter Beeler

Source: CAHSR

# Key Findings

3

Highly-used highways and transit systems remain the **backbone of the region** – both efficiency and maintenance investments prove highly cost-effective.



4

Projects in **chronically congested corridors** generally provide the biggest bang per buck.



# Key Findings

5

In general, congestion pricing and road efficiency projects **outperform road expansion projects**, reflecting lower costs and fewer environmental impacts.



Source: Flickr/Michael Munaz

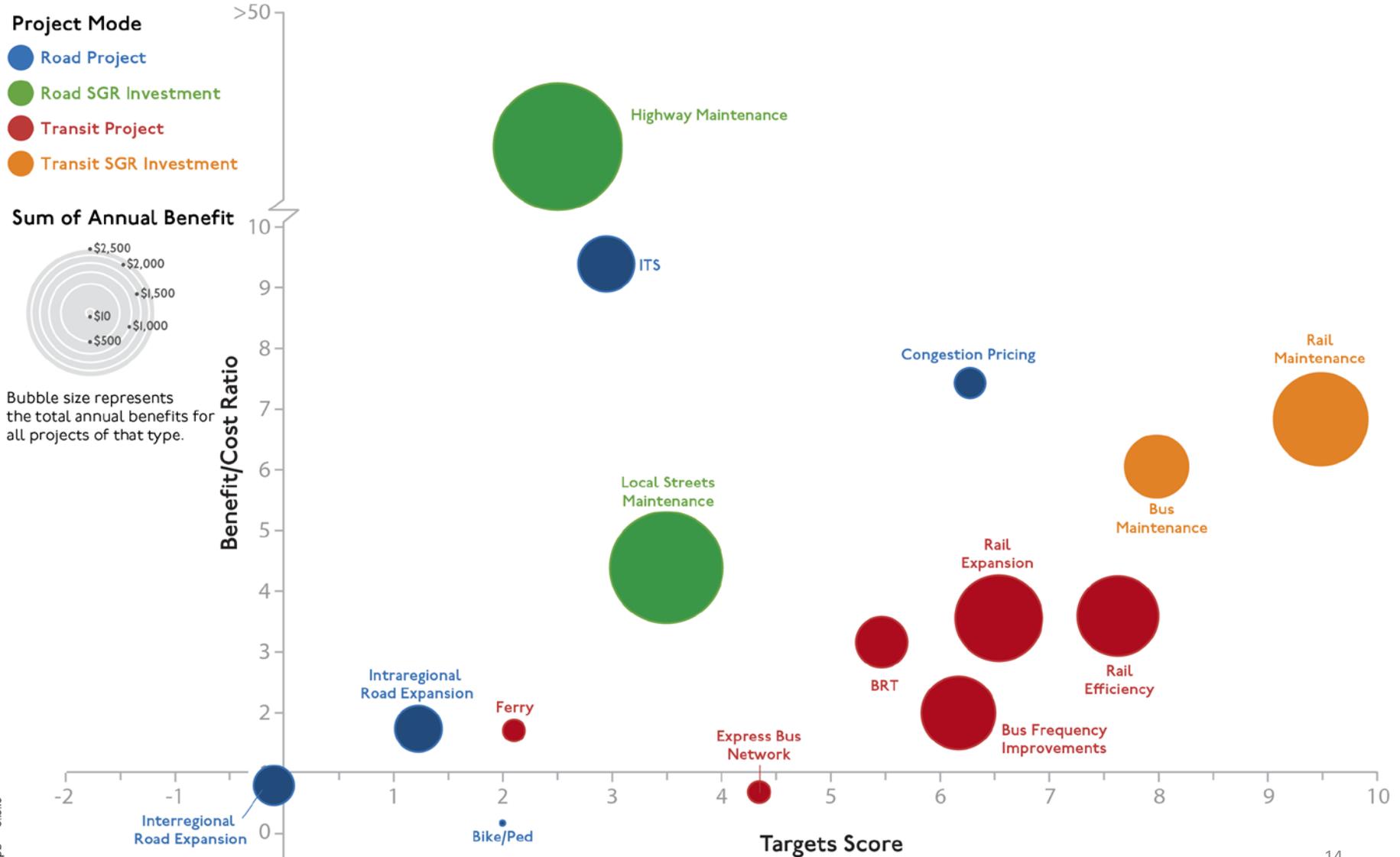
6

All of the region's highest-performing projects **increase access to Communities of Concern**.



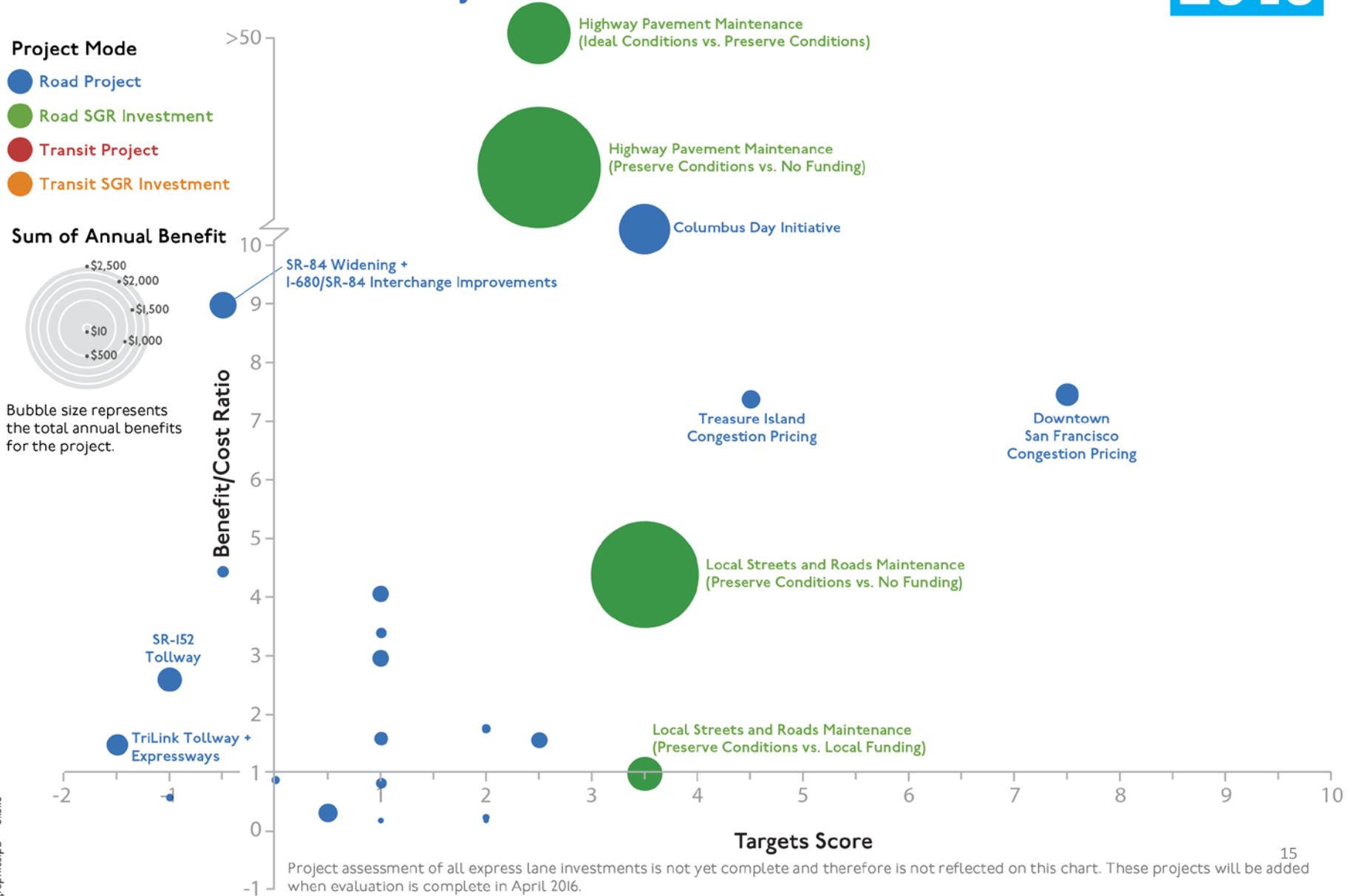
Source: Santa Rosa City Bus

## Project Performance Assessment: Overall Draft Results by Project Type



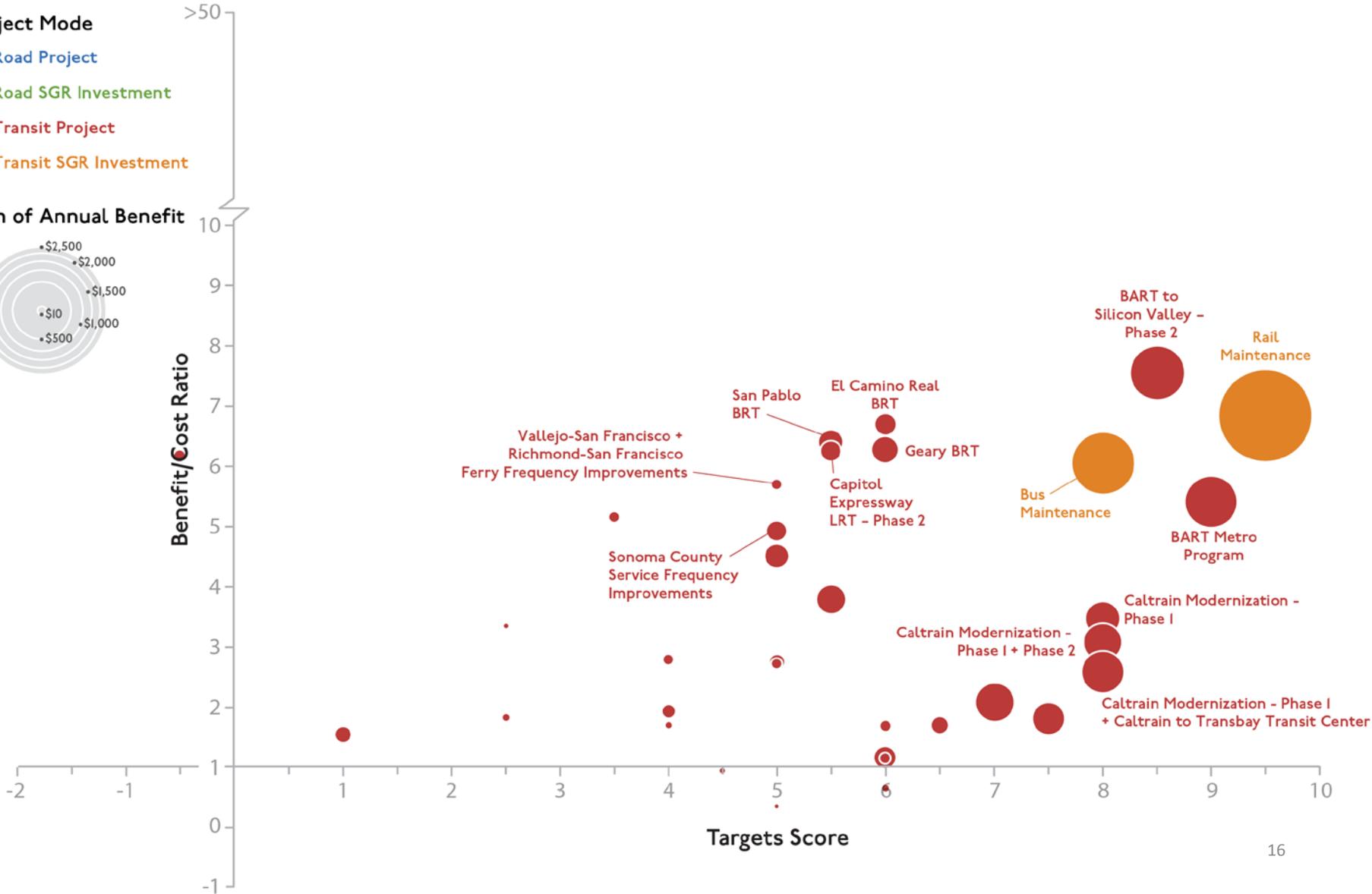
Project assessment of all express lane investments is not yet complete and therefore is not reflected on this chart; these projects will be added when evaluation is complete in April 2016. State of good repair (SGR) investment bubbles on this chart reflect the evaluation of preserve conditions vs. no funding.

## Project Performance Assessment: Draft Results for Road Projects



- Project Mode**
- Road Project
  - Road SGR Investment
  - Transit Project
  - Transit SGR Investment

**Sum of Annual Benefit**



# What's Next?

## **MARCH** AND **APRIL**

Release of draft performance results; meetings with sponsors and CMAs to discuss findings and potential issues

## **MAY**

Final performance results and staff recommendation for high- and low-performer thresholds to the MTC Planning Committee

## **JUNE**

Deadline for low-performing project sponsors to submit compelling case to MTC staff

## **JULY**

Staff recommendation for final actions on project performance assessment to the MTC Planning Committee

## **SEPTEMBER**

Preferred scenario for Plan Bay Area 2040 slated for adoption by MTC and ABAG, incorporating outcomes of the performance assessment