Meeting Agenda

1. Study Purpose and Progress
2. Transbay and SF Metro Corridor Demand and Capacity
3. Short and Medium Term Packages
4. CCTS – Plan Bay Area Integration
5. Project Next Steps and Schedule
Study Purpose and Progress

• Multi-agency effort focused on increasing transit capacity to the San Francisco Core:
  • Develop and recommend projects and strategies by timeframe
    – Short term: to 2020
    – Medium term: 2020-2030
    – Long term: 2030+
  • Use short and medium term projects to inform, identify and consider potential long term strategies

• Study analysis:
  • Transbay and SF Metro corridor capacity and demand analysis
  • Initial second crossing and landing site review
  • SF and Oakland market assessments
  • Compilation, review and development of short and medium term investments for project package consideration
Study Area and Corridors
Transbay Corridor Demand and Capacity
## Prerequisite Transbay Projects

<table>
<thead>
<tr>
<th>Tier</th>
<th>Timeframe</th>
<th>Sponsor</th>
<th>Project</th>
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<td>AC Transit</td>
<td>AC Transit Richmond Facility Reopening</td>
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<td>BART Additional Cars – Fleet Transition</td>
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<td>WETA</td>
<td>WETA Maintenance Facilities Alameda, Vallejo</td>
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<td>WETA Richmond-SF Ferry Service</td>
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<td>WETA SF Ferry Terminal Expansion</td>
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<td>WETA</td>
<td>WETA SF Fleet Replacement &amp; Expansion</td>
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<td>Caltrans</td>
<td>I-80 Integrated Corridor Mobility</td>
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<td>TJPA</td>
<td>Transbay Terminal (Phase 1)</td>
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<td>TJPA</td>
<td>AC Transit Bus Ramp to Transbay terminal</td>
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<td>AC Transit</td>
<td>AC Transit Fleet Expansion (40 buses)</td>
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<td>AC Transit</td>
<td>AC Transit West County Bus Facility (new)</td>
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<td>BART Hayward Maintenance Complex, Phase 1</td>
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<td>BART</td>
<td>BART Additional Railcars – Core Capacity</td>
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<td>BART</td>
<td>BART Metro Program</td>
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<td>BART Traction Power System</td>
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<td>BART Train Control System</td>
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<td>BART Hayward Maintenance Complex, Phase 2</td>
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</table>
Historical Share of Demand

Daily Travel – Transbay Corridor
Westbound

<table>
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<tr>
<td>SOV</td>
<td></td>
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<td></td>
<td>10,425</td>
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<tr>
<td>HOV</td>
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<td></td>
<td>6,260</td>
<td>39,4%</td>
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<tr>
<td>BART</td>
<td></td>
<td>27.4%</td>
<td></td>
<td>2,5%</td>
<td></td>
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<tr>
<td>Auto</td>
<td>70.2%</td>
<td></td>
<td>2.4%</td>
<td>58.1%</td>
<td></td>
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</table>

Person Trips By Auto - Westbound Peak Hour

Peak Hour Person Trips - Auto

- SOV: 10,425
- HOV: 6,260
- BART: 39,4%
- Auto: 58.1%

Average Weekday

CORE CAPACITY
TRANSIT STUDY

7
Prerequisite Projects By Operator

Transbay Corridor

Existing Conditions
Westbound to SF Core
AM Peak Hour

10,000 People in Cars
29,000 Transit Trips
2,700 AC Transit & WestCAT bus
25,000 BART
1,300 WETA Ferry

Additional Transit Capacity
Prerequisite/Planned Projects

2015
37k Capacity
105%
39k Demand

2020 2025 2030 2035 2040

Person Trips
Peak Hour

AC Transit
BART
WETA

Demand: High Growth
70,000
80,000

Demand: Market Assessment Growth Projection
53,000
60,000

Demand: Low Growth
44,000
50,000

0 10,000 20,000 30,000 40,000 50,000 60,000 70,000
Transbay Corridor Demand Forecast

Transbay Corridor

Existing Conditions
Westbound to SF Core
AM Peak Hour
10,000 People in Cars
29,000 Transit Trips
2,700 AC Transit & WestCAT bus
25,000 BART
1,300 WETA ferry

2015
37k Capacity
105%
30k Demand

2020
42k Capacity
105%
44k Demand

2025
46k Capacity
107%
49k Demand

2030
46k Capacity
120%
55k Demand

2035
46k Capacity
135%
62k Demand

2040
46k Capacity
152%
70k Demand

Additional Transit Capacity
Prerequisites/Planned Projects
AC Transit
BART
WETA

Not fully funded
Fully funded
3,200
900
1,600

Demand:
High Growth
70,000

Market Assessment
53,000
Growth Projection

44,000
Low Growth

30,000
20,000
10,000
0
Person Trips
Peak Hour
Transbay Problem Statement - Summary

- The need to fund and implement the Tier 1 and Tier 2 prerequisite projects under all growth scenarios
- An increasing likelihood that growth in demand will outpace capacity
- The need for additional short, medium and long term investments in projects, programs and policies to address increasingly significant shortfalls in capacity
- Some modes may continue to carry a greater share of the Transbay demand, both today and in the future
- There are no planned prerequisite projects after 2025
- Without significant changes in vehicle occupancy, nearly all future growth would need to be met by transit.
SF Metro Corridor
Demand and Capacity
## Prerequisite SF Metro Projects

<table>
<thead>
<tr>
<th>Tier</th>
<th>Timeframe</th>
<th>Sponsor</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Short Term</td>
<td>SFMTA</td>
<td>SFMTA Central Subway</td>
</tr>
<tr>
<td>1</td>
<td>Short Term</td>
<td>SFMTA</td>
<td>SFMTA Candlestick and Hunters Point Express Bus Service</td>
</tr>
<tr>
<td>1</td>
<td>Short Term</td>
<td>SFMTA</td>
<td>SFMTA Muni Forward</td>
</tr>
<tr>
<td>1</td>
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<td>SFMTA</td>
<td>SFMTA Van Ness Avenue Bus Rapid Transit</td>
</tr>
<tr>
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<td>SFMTA</td>
<td>SFMTA SFgo</td>
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<td>SFMTA</td>
<td>SFMTA T-Third Mission Bay Loop</td>
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<td>SFMTA</td>
<td>SFMTA 16th Street Corridor Transit Priority</td>
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<td>BART</td>
<td>BART Hayward Maintenance Complex, Phase 1</td>
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<tr>
<td>2</td>
<td>Short Term</td>
<td>SFMTA</td>
<td>SFMTA Fleet Expansion (light rail and bus)</td>
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<tr>
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<td>SFMTA</td>
<td>SFMTA Muni Forward Phase 2</td>
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<td>BART Additional Railcars – Core Capacity</td>
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<td>BART Train Control System</td>
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<td>BART Hayward Maintenance Complex, Phase 2</td>
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<td>Caltrain</td>
<td>Caltrain Electrification</td>
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<td>Caltrain</td>
<td>Caltrain CalMod 2.0</td>
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<td>2</td>
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<td>Caltrain</td>
<td>Caltrain Operations Improvements – North Terminal</td>
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<tr>
<td>2</td>
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<td>SFMTA</td>
<td>SFMTA Transit Facilities Improvements</td>
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<td>2</td>
<td>Medium Term</td>
<td>TJPA</td>
<td>Downtown Extension</td>
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</table>
SF Metro Corridor Future Growth

- Similar analysis to Transbay, but capacity/demand assessed in 6 sub-areas
- Richmond & Sunset corridors show projected demand above planned capacity
- Other corridors show future planned capacity above projected demand
## Sub-Area Findings

<table>
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<tr>
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<th>% Capacity Filled (2040 forecast demand/planned capacity)</th>
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<tbody>
<tr>
<td>Northern Neighborhoods</td>
<td>90%</td>
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<tr>
<td>Richmond</td>
<td>114%</td>
</tr>
<tr>
<td>Sunset</td>
<td>125%</td>
</tr>
<tr>
<td>Mission(^1)</td>
<td>65%</td>
</tr>
<tr>
<td>Bayshore(^2)</td>
<td>58%</td>
</tr>
</tbody>
</table>

\(^1\) In Mission corridor, anticipated increase in BART + Muni service should provide sufficient capacity relative to projected demand.

\(^2\) Planned capacity increases are expected to provide sufficient capacity relative to total project demand in the sub-area. It should be noted that capacity increases to Caltrain and Muni respectively, provide limited benefits between different operators serving different travel markets (regional vs. intra-SF trips).
Sunset Sub-area Demand Forecast

Sunset Corridor

**Existing Conditions**
- Inbound to SF Core: 4,550 People in Cars, 8,050 Transit Trips, 750 Bike/Ped

**2015**
- Capacity: 13,350
- Future Demand: 14,950

**Future Demand**
- 2020: 15,550
- 2025: 16,100
- 2030: 16,700
- 2035: 17,350
- 2040: 18,000

**Capacity and Future Demand**
- 2020: 14,400 Capacity, 108% Demand
- 2025: 14,400 Capacity, 112% Demand
- 2030: 14,400 Capacity, 116% Demand
- 2035: 14,400 Capacity, 120% Demand
- 2040: 14,400 Capacity, 125% Demand

**Additional Transit Capacity**
- Prerequisites/Planned Projects: 1,650 Fully Funded

**2020-2035**
- Person Trips
- Peak Hour

2020: 20,000
2025: 18,000
2030: 16,000
2035: 14,000
Richmond Sub-area Demand Forecast

Richmond Corridor

Existing Conditions
Inbound to SF Core
AM Peak Hour
4,400 People in Cars
6,000 Transit Trips
5,400 Bike/Ped

2015
15,800 Capacity
97%
15,350 Demand

2020
16,250 Capacity
98%
15,950 Demand

2025
16,250 Capacity
102%
16,550 Demand

2030
16,250 Capacity
106%
17,200 Demand

2035
16,250 Capacity
110%
17,850 Demand

2040
16,250 Capacity
114%
18,500 Demand

Additional Transit Capacity
Prerequisites/Planned Projects

Future Demand
20,000
18,500
18,000

Person Trips
Peak Hour
0
2,000
4,000
6,000
8,000
10,000
12,000
14,000
16,000
18,000
Additional Transit Capacity - Prerequisite Projects By Operator

Additional Transit Capacity
Prerequisite/Planned Projects

<table>
<thead>
<tr>
<th>Year</th>
<th>Fully funded</th>
<th>Not fully funded</th>
<th>Total</th>
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<tr>
<td>2020</td>
<td>6,200</td>
<td>2,450</td>
<td>8,650</td>
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<tr>
<td>2025</td>
<td>13,700</td>
<td>325</td>
<td>14,025</td>
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<tr>
<td>2030</td>
<td>1,600</td>
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</tr>
<tr>
<td>2040</td>
<td>0</td>
<td>0</td>
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</table>

Total: 23,950
SF Metro Problem Statement - Summary

• The need to fund and implement the Tier 1 and Tier 2 prerequisite projects
• Benefits from prerequisite projects in the BART/Mission and Bayshore subareas may be limited between different operators serving different travel markets (regional vs. intra-SF trips)
• Capacity shortfalls are focused on a few sub areas within the corridor – Richmond and Sunset
• The need for additional short, medium and long term investments in projects, programs and policies
• There are no planned prerequisite projects after 2030
Short and Medium Term Packages
Transbay Packages (short & medium term)

<table>
<thead>
<tr>
<th>PREREQUISITE PROJECTS</th>
</tr>
</thead>
</table>

**Projects Common to Packages 2, 3, 4a, 4b**

- Automated toll collection
- Fare Adjustment Policies

**PLUS**

- Additional Transbay bus service and capital investments (50 buses)
- Supportive bus transit facilities
- BART station and system improvements (core-related)
- WETA 30-15 Plan
### Transbay Packages (short & medium term)

<table>
<thead>
<tr>
<th>Package Specific Projects</th>
<th>PROJECTS COMMON TO PACKAGES (2, 3, 4a, 4b)</th>
<th>[PLUS]</th>
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<tbody>
<tr>
<td>1 Value Pricing</td>
<td>2 Value Pricing</td>
<td>3 Value Pricing, and Infrastructure</td>
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<tr>
<td></td>
<td>Dynamic auto toll increase</td>
<td>Bus tunnel from Mandela to Bay Bridge</td>
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<tr>
<td></td>
<td></td>
<td>• Surface street transit priority connecting to I-80, I-580</td>
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<tr>
<td></td>
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<td>• Builds on Package 2</td>
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<tr>
<td>2 Value Pricing</td>
<td>Dynamic auto toll increase</td>
<td>4a Value Pricing, infrastructure and Contraflow Lane</td>
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<td></td>
<td></td>
<td>• Contraflow Lane, Westbound on Lower Deck</td>
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<td></td>
<td></td>
<td>• Eastbound PM peak toll</td>
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<tr>
<td></td>
<td></td>
<td>• Builds on Package 2 and 3</td>
</tr>
<tr>
<td>3 Value Pricing, and Infrastructure</td>
<td></td>
<td>4b Value Pricing, infrastructure and HOV Lane</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• HOV Lane, Westbound with Flow</td>
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<tr>
<td></td>
<td></td>
<td>• Eastbound PM peak toll</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Builds on Package 2 and 3</td>
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</table>
Projects Common to Packages (2, 3, 4a, 4b)

1. Implement dynamic automobile toll pricing
2. Implement automated toll collection
3. Increase Transbay bus service
4. Implement WETA 30-15 Plan
5. Ferry terminal expansion (San Francisco/Alameda)
6. New core park and ride facilities
7. New Glen Park pocket track
8. Implement platform screen doors at Montgomery, Embarcadero
9. Improve vertical circulation at Montgomery, Embarcadero

Not pictured on map:
- Additional Transbay bus vehicles
- Additional bus yard facilities (location TBD)
- Additional Transbay vessels
- Fare Adjustment Policy
- Berkeley ferry terminal
Specific Package Projects

Projects Common to Packages 2, 3, 4a, 4b

1. Implement dynamic automobile toll pricing
2. Implement automated toll collection
3. Increase Transbay bus service
4. Implement WETA 30-15 Plan
5. Ferry terminal expansion (San Francisco/Alameda)
6. New core park and ride facilities
7. New Glen Park pocket track
8. Implement platform screen doors at Montgomery, Embarcadero
9. Improve vertical circulation at Montgomery, Embarcadero

Not pictured on map
- Additional Transbay bus vehicles
- Additional bus yard facilities (location TBD)
- Additional Transbay vessels
- Fare Adjustment Policies
- Berkeley ferry terminal

Specific Package Projects

Package 1
1. Implement contraflow lane, WB on lower deck

Package 2
2. Implement surface street transit priority

Package 3
3. Implement bus priority using Key System Tunnel to Bay Bridge

Package 4a
4. Implement contraflow lane, WB on upper deck
# SF Metro Packages (short & medium term)

## PREREQUISITE PROJECTS

### [PLUS]

| Projects Common to all Packages | SF Metro Packages
<table>
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<tbody>
<tr>
<td>Solution at Forest Hill and West Portal to enable four-car trains in tunnel</td>
<td>Add and optimize 4-car turn-around capacity at Embarcadero</td>
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<td>Geary BRT</td>
<td>SF Better Market Street</td>
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<tr>
<td>Infrastructure support for service/capacity increases</td>
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<tr>
<td>System flexibility (e.g. new and enhanced turn-backs)</td>
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SF Metro Packages (short & medium term)

### PREREQUISITE PROJECTS

#### PROJECTS COMMON TO ALL PACKAGES

**[PLUS]**

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<th>Package Themes</th>
<th>1a</th>
<th>1b</th>
<th>2a</th>
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<tr>
<td>Themes</td>
<td>Longer trains through surface improvements</td>
<td>Longer trains through coupling</td>
<td>Simplified Metro Network</td>
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</tbody>
</table>

Specific projects pending further definition, feasibility screening, tradeoffs analysis, internal and external stakeholder vetting.
CCTS – Plan Bay Area Integration
RTP Investment Strategy

Potential “Core Capacity” Investment Strategy in PBA 2040
- Prerequisite Projects
- Placeholder for Short- and Mid-Term Package Projects
- Future Planning for Long-Term “Big Move” Projects

Next Steps
- Identify short- and mid-term projects
- Identify list of “big moves”
- Develop funding request for high-priority CCTS projects
- Fiscally constrain CCTS projects in a PBA40 investment package

MTC adopts the preferred RTP Investment Strategy in September 2016
MTC adopts Plan Bay Area 2040 in June 2017
Project Next Steps and Schedule
SF Market Assessment

- Goal: Provide a range of employment growth projections for key subareas within the San Francisco core
- Between 2010 and the end of 2014, San Francisco added 97,000 new jobs
- Estimates 100,000-140,000 new jobs in the SF Core between 2015-2040.
Oakland Market Assessment

- Goal: Understand the potential for future employment and residential growth in Downtown Oakland
- Between 2011 and 2014, the study area added 5,000 new jobs
- Estimates between 12,100 and 23,900 net new jobs by 2040
Market Assessment Synthesis

• Address the potential growth in both Downtown Oakland and the SF Core, and their relationship to each other and the region

• Provide additional guidance on:
  • The need to provide transit investments to specific locations
  • When potential transit investments are needed based on employment and residential demand
  • If employment growth in Downtown Oakland has the potential to be strong enough to relieve demand in the corridor and shift needed transit investments
Long Term Strategies – Study Activities

1. Review study, policy, operator and engineering considerations including:
   a. Study guiding principles and criteria
   b. Operator perspectives and study assumptions
   c. Relationship of market assessment finding’s to long term themes
   d. Local, regional, and state policy considerations
   e. Impact of transportation trends, including impact of emerging technologies such as autonomous vehicles

2. Conduct public outreach
   a. Engage community stakeholders and members of the public on long term themes post November 2016
Project Schedule

- Complete evaluation methodology (May 2016)
- Complete package project definitions with PMT (June 2016)
- Evaluate project packages (June - September 2016)
- Assess long term strategies (June - October 2016)
- Participate in outreach activities (Multiple phases 2016)
  - Contribute to Plan Bay Area outreach events – focused on Study Purpose and Problem Statement (June 2016)
  - Conduct stakeholder and public outreach (December 2016)
Project Schedule

2016

- Task 6 Package Development
- Task 6a Short & Medium Term Package Development
- Task 6b Long Term Alternatives Development
- Task 7 Package Evaluation
- Outreach

2017

- Task 8 Long Term Alternatives Refinement
- Outreach
- Task 9 Implementation Strategy
- Task 10 Final Report

Events:
- PMT meetings / ET meetings / TAC meetings

Timeline:
- Apr
- May
- Jun
- Jul
- Aug
- Sept
- Oct
- Nov
- Dec
- Jan
- Feb
- Mar