Metropolitan Transportation Commission
Operations Committee

June 14, 2019 **Agenda Item 6a**

Plan Bay Area 2050 Call for Projects: Submittal of Regionally-Led Operations Portfolio

Subject: An overview of current Regionally-Led Operations projects for consideration for inclusion in Plan Bay Area 2050.

Background: In response to the Plan Bay Area 2050 Call for Projects issued by MTC earlier this year, staff is presenting the current portfolio of Regionally-Led Operations projects. Staff will return in the fall with an updated list, following further reflection on analysis results related to Horizon, a regional planning initiative of MTC and ABAG. The projects will undergo project performance assessment to be considered for inclusion in the final transportation investment strategy for Plan Bay Area 2050. Attachment A includes a list of current projects and fact sheets. MTC leads these operations programs, which span across counties and corridors, to ensure seamless operations.

The Regionally-Led Operations projects support Horizon's Guiding Principles broadly with a particular focus on a connected, vibrant and healthy Bay Area by:

- **Improving mobility and travel reliability** by eking capacity out of the system and encouraging mode shift, such as through Bay Area Forward.
- **Closing critical gaps** in transportation management infrastructure and the communications network that support it, such as through the Regional Communication Network and the Bay Area Express Lanes Network.
- **Improving Transbay Toll Bridge operations and maintaining a state of good repair** for lifelines that connect one side of the Bay to the other, such as through asset management, all-electronic tolling and Bay Bridge bicycle and pedestrian connections.
- **Connecting people with transportation** by providing comprehensive, free traveler information and promoting shared transportation services, such as through the 511, Motorist Aid, Emergency Response and Carpool/Vanpool programs.
- **Delivering resilient solutions** that integrate multi-modal transportation, promote healthy ecosystems and protect against sea-level rise in corridors such as State Route 37

MTC delivers the Regionally-Led Operations Program in coordination with partner agencies including Caltrans, transit operators, and county congestion management agencies. The portfolio is anchored by well-established regional operations programs that evolve to reflect changing needs and technologies and make the most efficient use of the multi-modal transportation system (e.g., call boxes and Freeway Service Patrol, and the regional Express Lanes Network) and which support seamless

mobility (e.g., 511 traveler information, the regional Carpool & Vanpool program). In addition, enhanced programs include the following:

- Bay Area Forward is a suite of technology-based strategies aimed at maximizing the efficiency of freeway and arterial systems through active traffic, demand management and multi-modal strategies deployed in concert to move more people through travel corridors.
- The Regional Communications Infrastructure Network that aims to facilitate the flow of images and data required for high-tech transportation management while also delivering cost-efficiencies through sensible planning and sharing of fiber and conduit.
- The Toll Bridge Program represents a renewed focus on how to keep the bridges in a state of good repair and the optimal time for major rehabilitation or replacement. All Electronic Tolling will be coordinated with other management strategies to improve tolling efficiency, increase safety, reduce vehicle delay and reduce vehicle emissions. The Bay Bridge bicycle and pedestrian pathways will provide key Transbay connectivity for this most multi-modal of corridors.
- Finally, the portfolio includes Resilient State Route 37, a relatively new initiative that aims to improve traffic flow, increase person throughput, and accommodate multi-modal travel in this key East-West corridor, while anticipating sea level rise and enhancing ecology of the Bay.

Issues: This list represents an initial cut at projects, based on established MTC programs. Staff will return to the Committee with an updated list this fall after reviewing the Horizons analysis results and the projects submitted by partner agencies. MTC may wish to adjust the portfolio to address emerging interests and fill gaps as needed for more fully integrated transportation system operations. Preliminary feedback during Horizons suggest there may be enhanced roles for MTC in delivering seamless mobility/micromobility, active transportation, pricing tools to increase lane occupancy and potentially in matching express bus services with the express lanes network.

Recommendation: None

Attachments: **Attachment A:** Regionally-Led Operations Program Fact Sheets
Attachment B: Presentation

Therese W. McMillan

ATTACHMENT A

Regional Active Operational Management Program Fact Sheets

Table of Contents

Bay Area Forward

Project Description

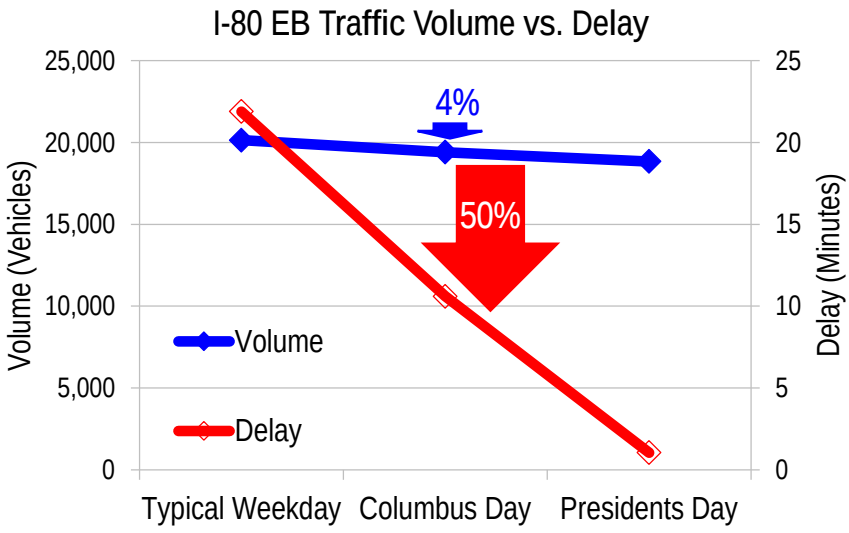
The Bay Area Forward is a suite of cost-effective technology-based strategies aimed at maximizing the efficiency of the existing freeway and arterial systems through active traffic and demand management. It also includes enhanced express bus services, and park and ride facilities that will maximize the efficiency of and increase person throughput on the Bay Area's managed lanes and freeway network.

Total Cost over Plan Bay Area 2050 Period	$990 million (YOE, including support costs)
Horizon's Guiding Principles	Affordable, Connected, Healthy, Vibrant

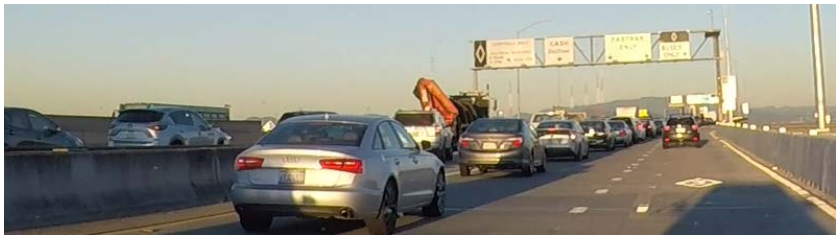
Activity	Description
Adaptive Ramp Metering	Dynamically optimizes corridor operations through metering
Adaptive Signal Timing with TSP	Dynamically optimizes signal coordination with priority to transit vehicles
Bus on Shoulder	Converts existing shoulder into a part-time transit lane
Contra-Flow Lane	Utilizes available capacity from the off-peak direction to implement managed lanes
Traffic Demand Management/ New Mobility	Deploys transportation services shared among users for more mobility choices
Operational Improvements	Implement HOV and bus queue jump lanes and congestion pricing strategies
Express Buses	Improved existing and provide new express bus services
Commuter Parking	New park and ride capacity

Project Motivation – Small Reduction in Traffic Demand Results in Less Time Delays

- A small reduction in traffic volume on administrative holidays leads to a significant reduction in vehicle delay



BayBridge Forward Dumbarton Forward RSR Forward



BAY AREA EXPRESS LANES

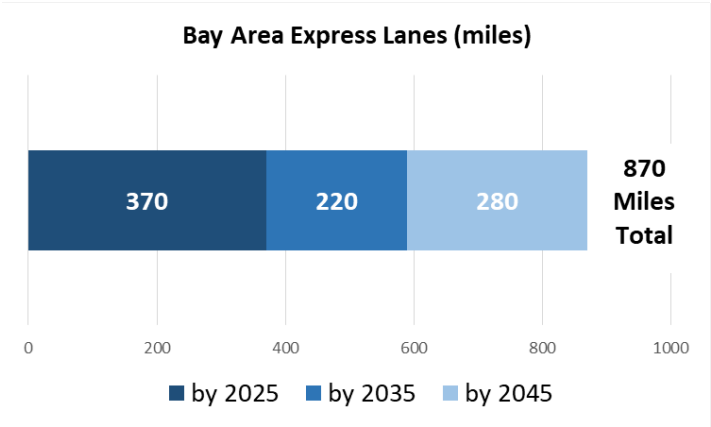
Project Description

Bay Area transportation agencies are implementing Bay Area Express Lanes to:

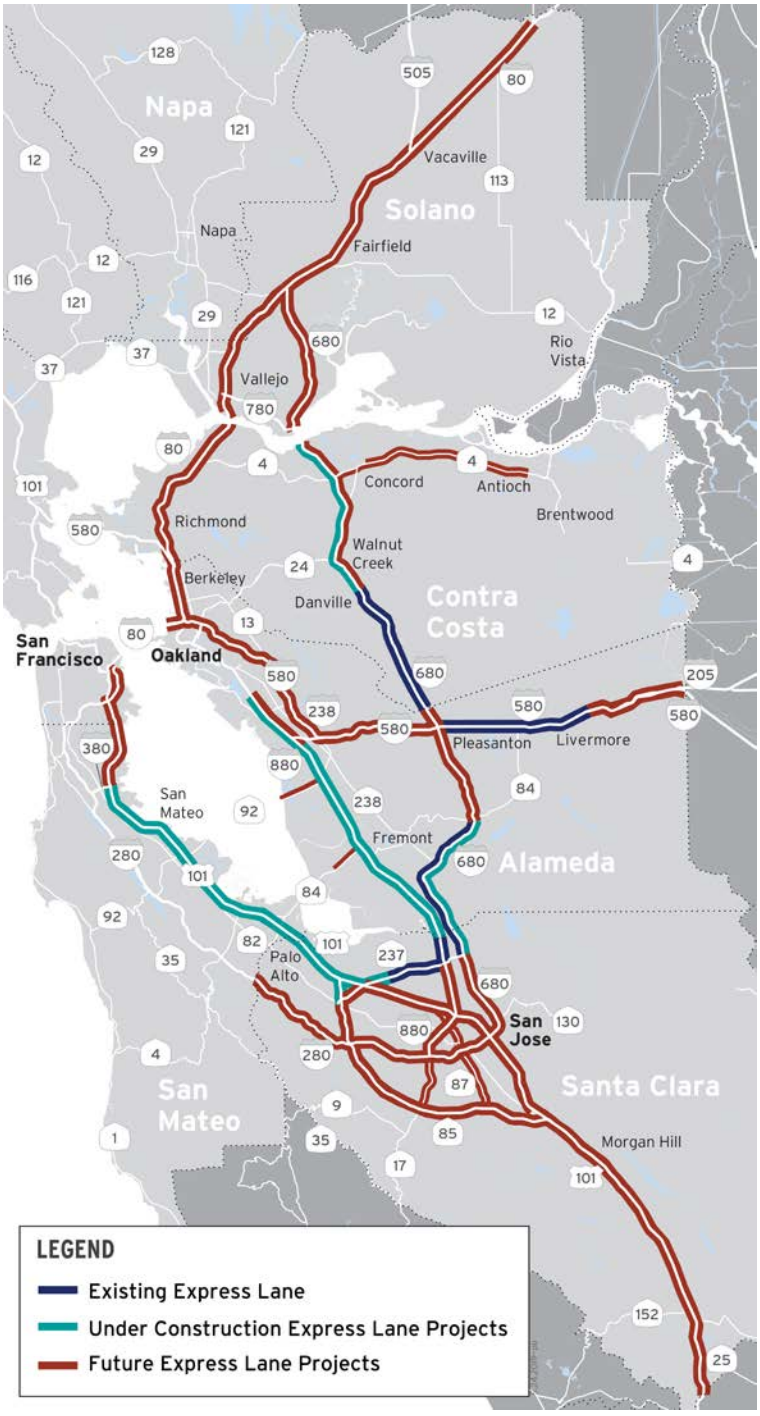
- Make use of available space in existing carpool lanes to move more people;
- Give everyone the choice to carpool for free or pay for a more reliable trip; and
- Fill gaps in the carpool system to encourage carpools, vanpools and buses.

When fully built, the Bay Area Express Lanes network will comprise about 870 miles, of which 500 miles are conversions of existing carpool or general purpose lanes and 370 miles are new lanes. MTC is authorized to own and operate about 300 miles of the network in Alameda, Contra Costa and Solano counties, and will operate about 50 miles for San Mateo County transportation agencies, too.

Bay Area transportation agencies coordinate operational policies and express lane design to deliver a nearly seamless experience for their customers, no matter the toll facility.



Total Cost over Plan Bay Area 2050 Period	$7.0 billion (YOE, including support costs)* **preliminary costs*
Horizon's Guiding Principles	Connected, Vibrant



Looking Forward

- The region expects to almost triple its express lane miles from about 80 to 220 by 2022.
- To better manage demand, express lane operators intend to offer clean air vehicles a discount toll on all express lanes, and to increase occupancy requirements from 2+ to 3+ persons for toll-free travel on express lanes that ring San Francisco Bay.

Connected Bay Area

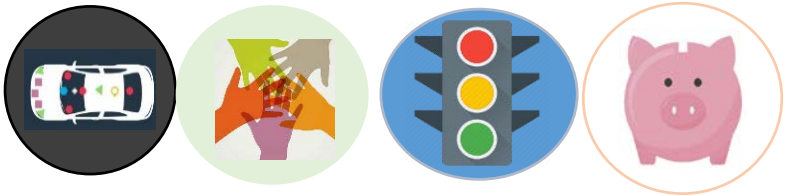
Creating connectivity among people, agencies and infrastructure

Project Description

The Connected Bay Area program includes a suite of projects that aims to improve and integrate key system infrastructure and operations vital to the effective management of the region's transportation network.

It serves as the foundation for the Bay Area Express Lanes, Bay Area Forward, and Corridor Management Initiatives, connecting people, agencies and infrastructure to enhance safety, mobility, livability and economic vitality in the Bay Area.

Total Cost over Plan Bay Area 2050 Period	$630 million (YOE, including support costs)
Horizon's Guiding Principles	Connected, Healthy, Vibrant

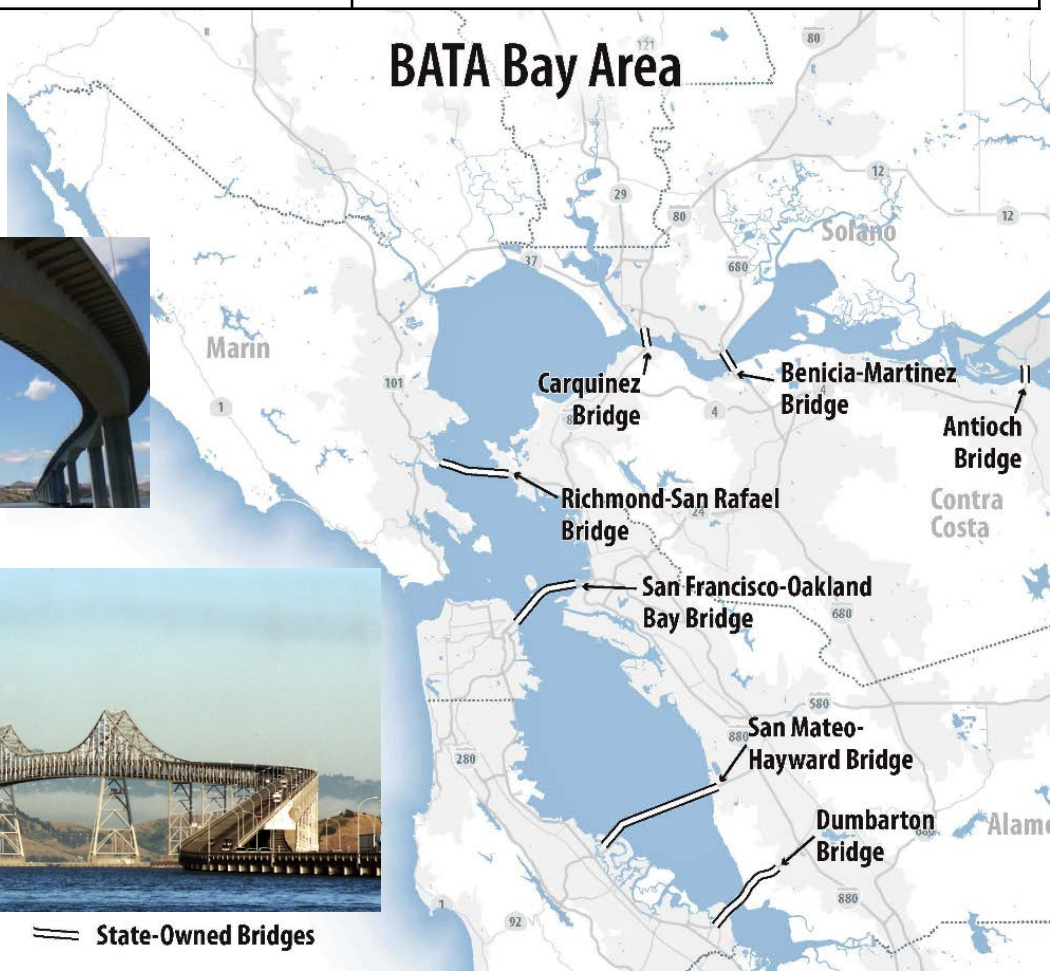
Activity	Description	Return on Investment
Regional Communications Infrastructure Network 	Provide a framework to develop a fast, reliable, redundant, and cost-effective regional communications network	 • Facilitate technology-based strategies • Enable the sharing of data, infrastructure, and maintenance costs • Support coordinated and interoperable transportation systems across multiple jurisdictions • Leverage infrastructure assets and investments to realize cost savings
Incident Management 	Strategies to enhance mobility, improve safety and reduce the impacts of traffic incidents.	• Up to 25:1 for Integrated Corridor Management and Incident Management Task Force • Improved interagency communication and cooperation across jurisdictions • Minimize impacts to local communities when incidents occur on the freeway
Transportation Management Center & Communications	Centralized monitoring and control of field devices. Data collection for planning & maintenance.	Essential to the effectiveness of traveler information services, intelligent transportation systems (ITS) and incident response. 

BATA Toll Bridges: State of Good Repair (Asset Management)

- State of good repair is an important and key financial investment. The long range focus is on bridge maintenance, repair and rehabilitation. BATA and Caltrans are conducting additional analysis to determine asset rehabilitation and replacement needs, and will be getting more detailed information on asset inventory and state of good repair going forward.
- Initial planning and studies for protection against sea level rise are underway. Based on BATA sea level rise studies to date, the toll plazas at the Bay Bridge, San Mateo Bridge, and Dumbarton Bridge, as well as the approaches to the Benicia Bridge and Richmond-San Rafael Bridge, are vulnerable to sea level rise and flooding from heavy storms.
- The bridge maintenance, repair and rehabilitation budget could change depending on findings from the analysis and planning work including possible bridge replacements.

Total Cost over Plan Bay Area 2050 Period	$7 billion – $12 billion (YOE)*
Horizon's Guiding Principles	Connected, Healthy, Vibrant

*Toll Bridge Value and Maintenance, Repair and Rehabilitation (MRR) assessment prepared by KPMG for Bay Area Toll Authority



Bay Bridge (SFOBB) Bicycle and Pedestrian Path Corridor and Gap Closure

The Bay Bridge (SFOBB) Bicycle and Pedestrian Path Corridor and Gap Closure will address the lack of bicycle, pedestrian and maintenance access on the West Span of the SFOBB and bicycle and pedestrian connections to the Bay Bridge trail. By constructing a path from the East Span path landing on Yerba Buena Island to the north side of West Span Anchorage, a path on the West Span of the San Francisco Oakland Bay Bridge, a touchdown into downtown San Francisco, a connecting path between West Oakland and the new East Span of the San Francisco Oakland Bay Bridge in Oakland. This also includes planning for deck and suspender rope replacement to coincide with the west span path construction and incentivized e-bikes. The proposed path will provide non-motorized modes of transportation across the San Francisco Bay, increasing the capacity of the bridge and supports the California Department of Transportation's "complete streets" vision and the Association of Bay Area Governments' Bay Trail Plan. Roughly 3 miles of pathway will address the gap closure for connecting San Francisco and Oakland.

2022
Envir. Document

2026
Final Design

2030
Construction

Total Cost over Plan Bay Area 2050 Period	$630 million (YOE)
Horizon's Guiding Principles	Connected, Healthy, Vibrant

All-Electronic Tolling

Project Description

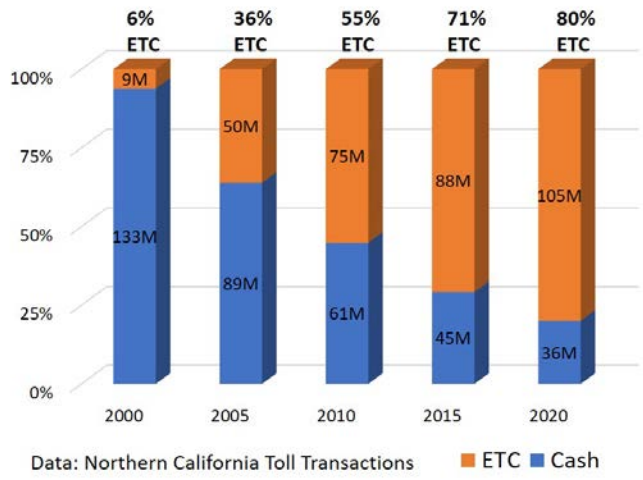
All-Electronic Tolling (AET) involves the conversion of the seven state-owned toll bridges to just electronic payment methods. AET requires supporting the transition of affected Caltrans employees, planning for an increased workload at the Regional Customer Service Center (RCSC), and investing substantial capital funds ($55M) and staff resources toward project development.

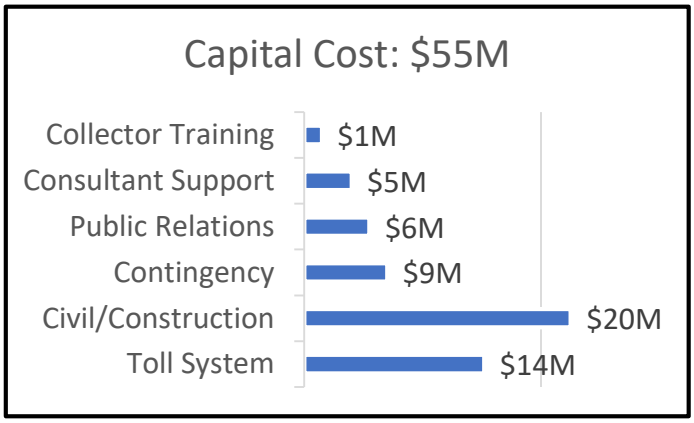
Open Road Tolling (ORT) will be deployed, which involves the construction of new overhead gantries, the demolition of toll canopies along with the installation of a new tolling system. The expected benefits of converting to AET would result in more efficient tolling, increased safety, decreased vehicle delay, and lower vehicle emissions. The current schedule projects the first toll plaza would be converted in Q3 2023.

Total Cost over Plan Bay Area 2050 Period	$200 million (YOE, including support cost)
Horizon's Guiding Principles	Connected, Healthy, Vibrant

Activity	Description
Regional Customer Service Center	Procure a new vendor, design and build new system.
Toll System	Procure a new toll system, install on newly built gantries.
Roadway Improvements	Upgrade roadway infrastructure to allow for high speed tolling.
Customer Communications	Public outreach to inform motorists of roadway/tolling changes.

Regional Decrease in Cash Collection

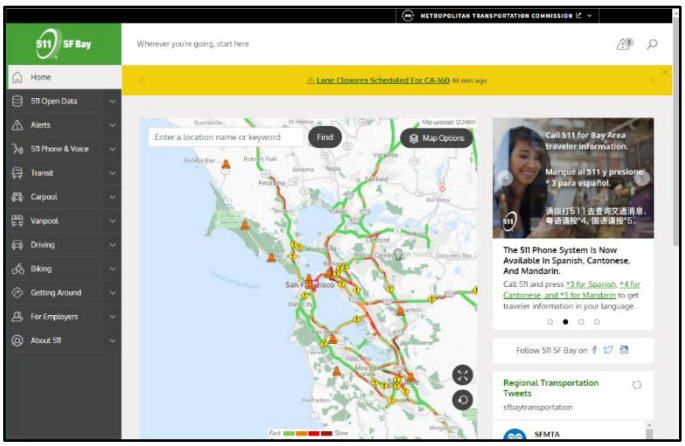




511

Project Description

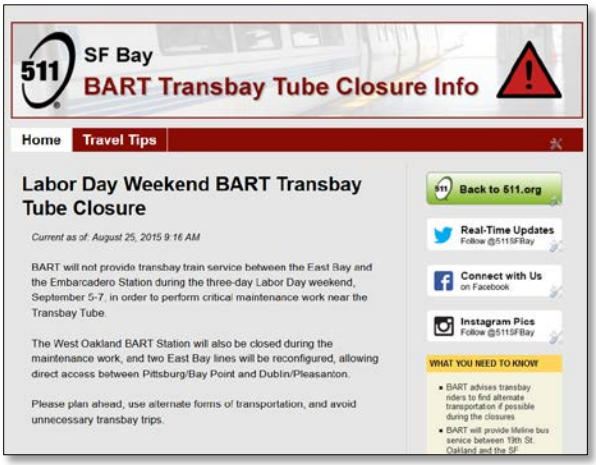
The 511 program provides multi-modal traveler information on multiple dissemination platforms, serves as the go-to source for travelers and media in major disruptions and regional emergencies, partners with many agencies and businesses for transportation information during regional events, and supports numerous MTC and partner objectives.

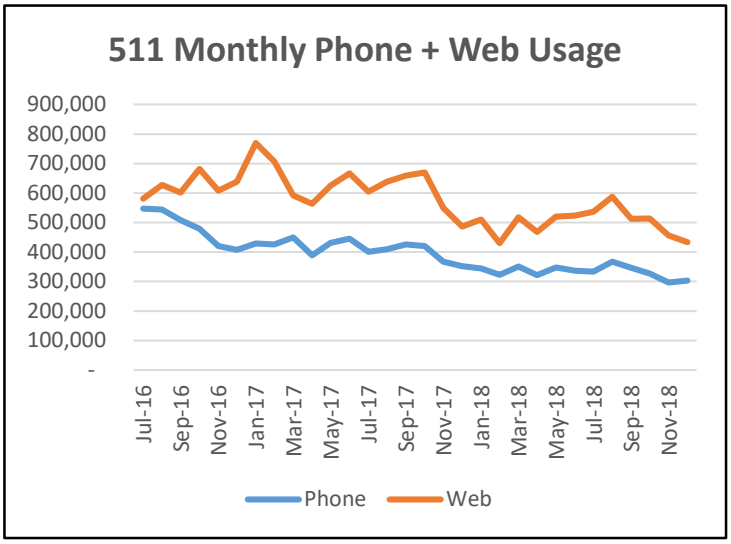


Total Cost over Plan Bay Area 2050 Period	$340 million (YOE, including support costs)
PBA 2050 Goals Furthered	Connected, Healthy

MTC's 511 system is unprecedented in the breadth and quality of traveler information services provided. Information services are free and available on-demand via phone, web, and open data feeds:

- Open data program providing transit schedule and real-time data, and traffic event information
- Alerts and traveler guidance during transportation disruptions and emergencies
- Live traffic conditions including incidents, construction projects and special events
- Real-time transit departure information
- Bay Area Express Lanes information
- Commuter Benefits Program information, ride-matching for carpools/vanpools, and bicycling information





Traveler Information Metrics

Service Area	9 County Bay Area, (including roadways in San Joaquin and Santa Cruz counties)
Non-Auto Mode Shift Increase	4%
System Delay Reduction	4.5% to 30%
Benefit Cost Ratio	16:1 to 25:1

Motorist Aid Services

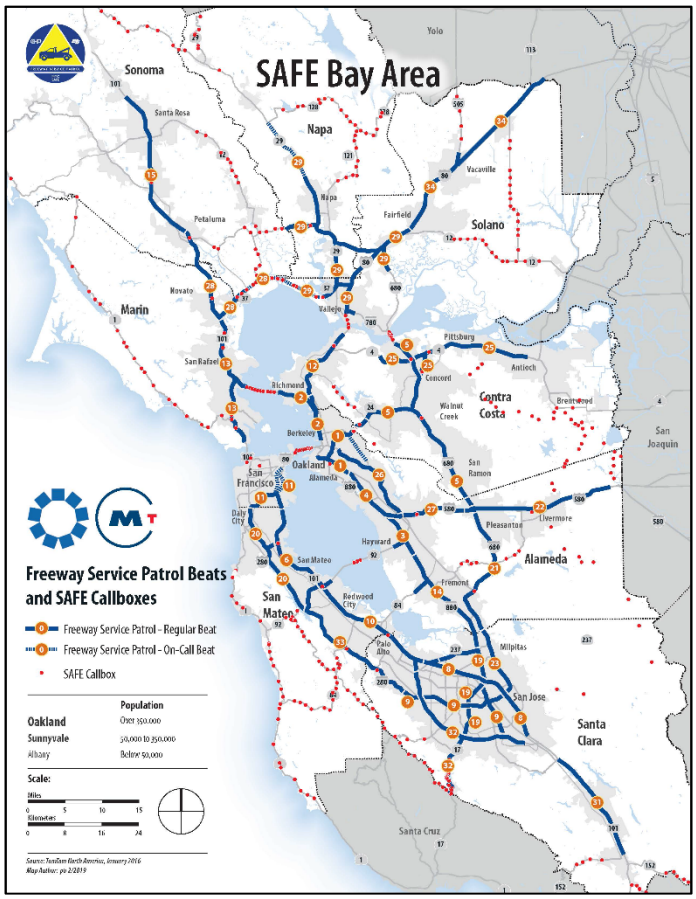
Project Description

The Motorist Aid Services project primarily consists of the Freeway Service Patrol (FSP) and Call Box programs but also funds other motorist aid activities.

FSP tow drivers patrol the region's congested highway traffic corridors at peak hours to provide free motorist aid and improve incident clearance time. FSP increases traveler safety, reduces air pollution from stop and go traffic and reduces delay.

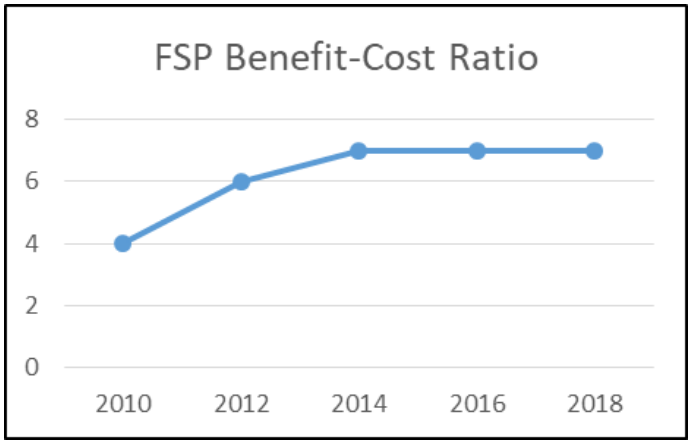
Motorists are often discovered by the roving FSP trucks with an average response time of 10 minutes. Motorists may also use a call box or dial '511' to access assistance on the freeway.

Total Cost over Plan Bay Area 2050 Period	$520 million (YOE, including support costs)
Horizon's Guiding Principles	Connected, Diverse, Healthy, Vibrant



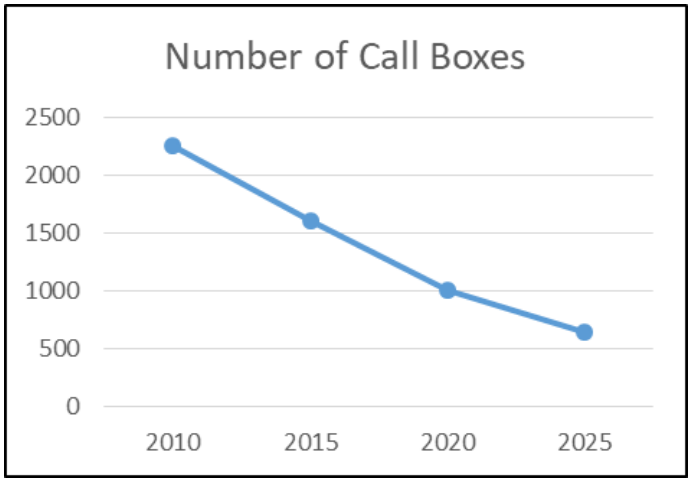
FSP

Service Area	580 center lane miles
Service Provided	150,000+ truck-hours / year
Motorist Assists	80,000 / year
CO_2 Reduction	41.4 million kg in FY16-17



Current Call Box Statistics

Call Boxes	650 boxes
Freeway Assist signs	350 signs
Number of Calls	30,000 / year



Looking Forward

- FSP will continue to focus service on the busiest traffic congestion areas and times to maintain its effectiveness.
- Call box is downsizing and shifting to mobile platforms by encouraging use of cell phones to dial 511 for the 'Freeway Assist' option.

Emergency Management

Project Description

Since the 1989 Loma Prieta Earthquake, MTC has spearheaded regional transportation emergency preparedness activities in the Bay Area, while also leading emergency transportation response during real-life events. The Emergency Management program enhances the region's transportation agencies' emergency coordination and response capabilities, which are critical to resumption of transportation service and economic resiliency. The program facilitates coordination across jurisdictional and modal boundaries.

Total Cost over Plan Bay Area 2050 Period	$30 million (YOE, including support costs)
Horizon's Guiding Principles	Connected, Diverse, Healthy, Vibrant

MTC led regional coordination during BART strike

Specific emergency planning services include:

- Regional transportation emergency plan management and development
- Managing the $1M Emergency Transit Fund
- Staff trainings
- Exercises that test emergency plans
- Supplying satellite phone hardware and service
- Promulgating incident management software

MTC's emergency role and responsibilities during a disaster include:

(1) Leading regional emergency transportation response

(2) Emergency coordination with the California Office of Emergency Services (Cal OES);

(3) Serving as a regional information clearinghouse for agencies; and

(4) Disseminating information to the public.

MTC has responded with operational staff support to a number of incidents, including: 2007 MacArthur Maze Structure Fire, 2009 Bay Bridge Eyebar Failure, 2013 BART Strike, 2013 Labor Day Bridge Closure, 2015 BART Transbay Tube closure.

Selection of Agency Partners

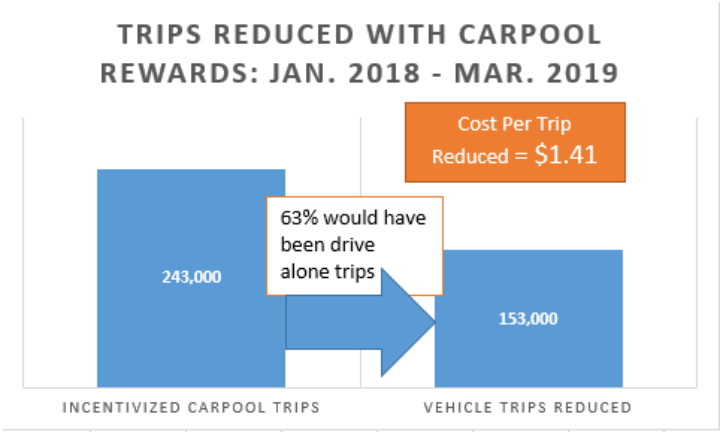
FEMA
Cal OES Governor's Office of Emergency Services
BART
AC Transit
San Francisco Bay Ferry
Caltrans
CHP
SFO San Francisco International Airport
CCCTA
GGBHTD
SFMTA Municipal Transportation Agency
Capitol Corridor
City of Oakland
samTrans
Tri Delta Transit
SolTrans
VTA
Wheels
WestCAT

Seamless Mobility -
The Bay Area Carpool, Vanpool & Employer Programs

Project Description

Connecting commuters to the unfilled seats in vehicles, rewarding high occupant vehicle travel and helping employers help their employees get to work are components of MTC's Seamless Mobility initiative to foster a multi-modal transportation system that reduces vehicle miles traveled and lays the foundation for shared use of future autonomous vehicles.

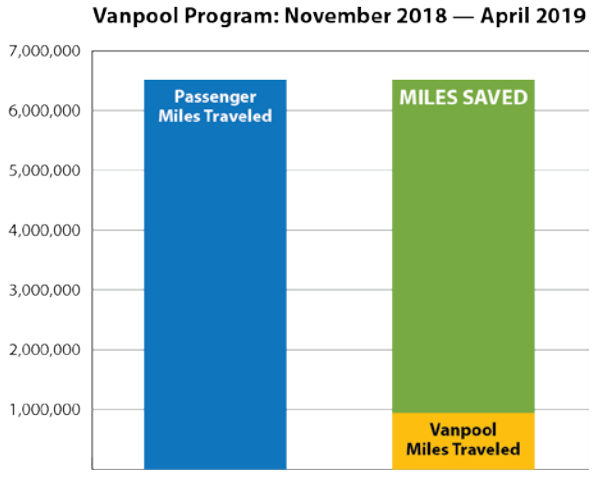
MTC's program provides carpool matching tools and encourages carpool behavior through outreach, education, rewards, incentives and new technology. MTC also subsidizes the cost of vanpools and supports vanpool groups. Lastly, MTC's program encourages employers to provide employee commute benefit through outreach, regulation and collaboration with county partners.



First in nation to partner with private-sector carpool matching apps. Bay Area is most successful in terms of app use.

Program Strategies

- Provide carpool matching tools.
- Provide carpool rewards.
- Collaborate with Bay Area public agencies to build cohesive regional TDM programs.
- Sponsor regional employer & commuter challenges and marketing campaigns.
- Maintain and foster employer contacts.
- Help employers comply with the Bay Area Commuter Benefits Program.
- Subsidize vanpools.



Total Cost over Plan Bay Area 2050 Period	$800 million (YOE, including support costs)
Horizon's Guiding Principles	Connected, Healthy, Vibrant

Bay Area Carpool Program

Bay Area Vanpool Program

Bay Area Commuter Benefits Program

Resilient State Route 37

Project Description

Resilient SR 37 is comprehensive, multimodal program of transformative improvements integrating transportation, ecosystem, and sea level rise adaptation into one design. The program will improve the quality of life for residents, promote a stronger local and regional economy and enhance the environment.

The purpose of the project is to improve traffic flow and peak travel times; increase person throughput (the number of people moved per vehicle); provide accommodation for multimodal use where possible; improve resiliency of transportation infrastructure to seasonal flooding and sea level rise; and enhance the San Pablo Bay ecology.

Key Project Components

- Ultimate Sea Level Rise Adaptation Project
- Interim Congestion Relief Project
- Near Term Operational Improvements
- Ecological & Restoration Enhancements
- New Bus Transit Services
- Fairgrounds Interchange and Transit Hub
- Public Access Improvements
- Multimodal Corridor
- Shoreline and Levee Protection

Total Cost over Plan Bay Area 2050 Period	$6.7 billion (YOE, including support costs)
Horizon's Guiding Principles	Affordable, Connected, Healthy, Vibrant

PLAN BAY AREA 2050

Regionally-Led Operations Portfolio

Response to Plan Bay Area 2050 Call for Projects

MTC Operations Committee

June 14, 2019

Established Portfolio

HORIZON

- Affordable
- Connected
- Diverse
- Healthy
- Vibrant

BAY AREA EXPRESS LANES

BayBridge Forward

Dumbarton Forward

RSR Forward

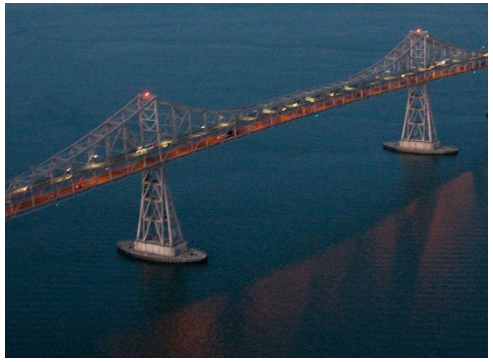
511

FREEWAY SERVICE PATROL

RESILIENTSR37

Connect Bay Area

Connecting People, Agencies and Infrastructure



Bay Area Carpool Program

Bay Area Vanpool Program

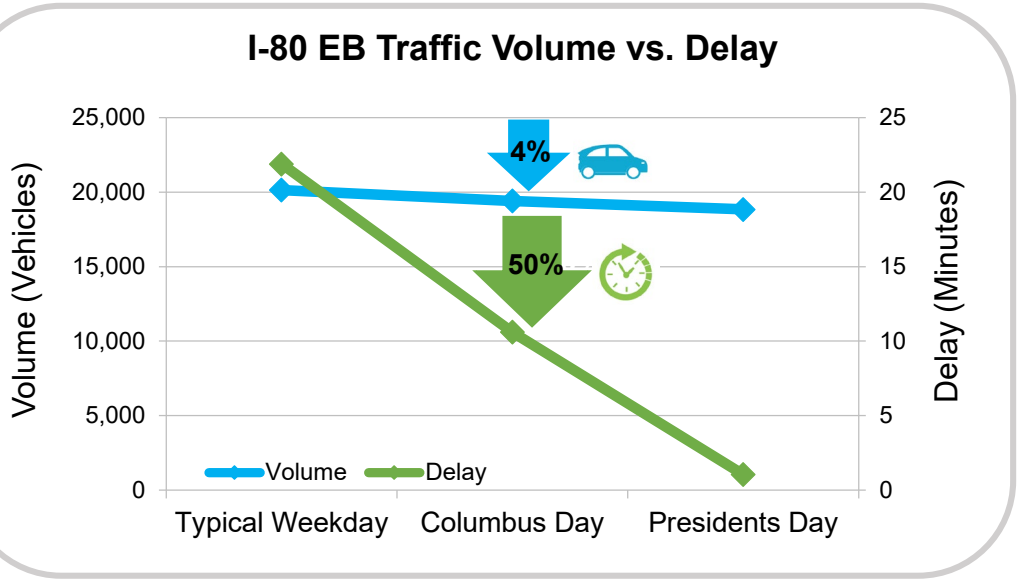
Bay Area Commuter Benefits Program

“Eke” Capacity Out of the System for Mobility and Mode Shift

Bay Area Forward

Small reductions in traffic volume leads to

Large reductions in vehicle delay



Cost over Plan Bay Area 2050 Period: **$990 Million**

Operational Improvements

Implement Low-Cost, High-Impact, Near-Term Operational Improvements
(HOV Lane Extension, Bus-on-Shoulder, Adaptive Ramp Metering, and Adaptive Traffic Signal)

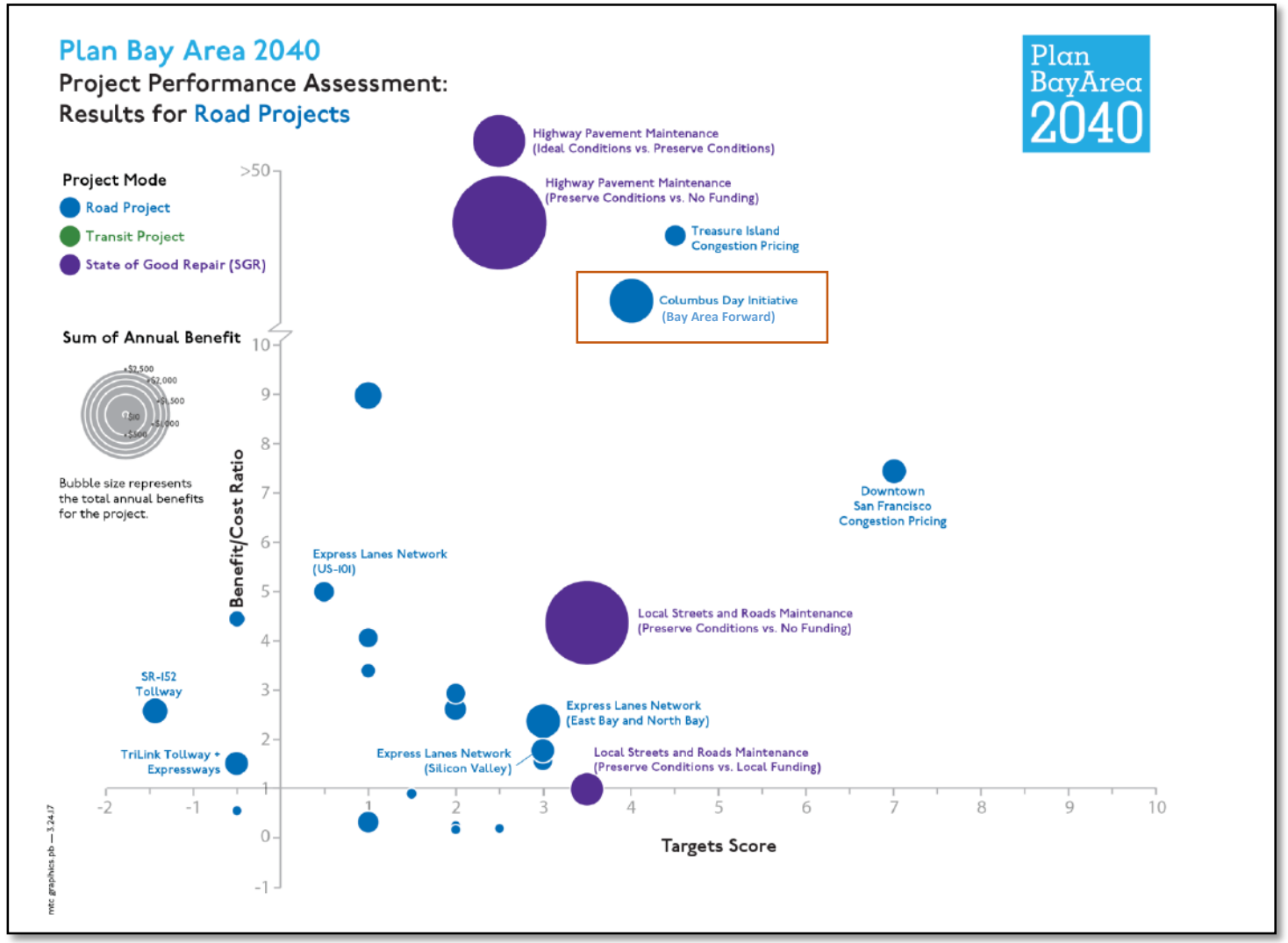
Supporting Demand Management Strategies

Implement Demand Management Strategies to Increase People Throughput
(Express Buses, Park & Rides, Carpool and Active Transportation)

PBA 2050 Goals Furthered: Affordable, Connected, Healthy, Vibrant

Investing in High-Performing Regional Efficiency Projects

Bay Area Forward



In Plan Bay Area 2040, Bay Area Forward:

- Received a high-performing benefit-cost ratio of 11
- Prioritized for future regional discretionary funding

Close Gaps in Transportation Management Infrastructure

Regional Communications Network

Connect Bay Area
Connecting People, Agencies and Infrastructure

Develop a ***fast, reliable, redundant, and cost-effective*** regional communications network

Facilitate ***technology-based congestion management*** strategies

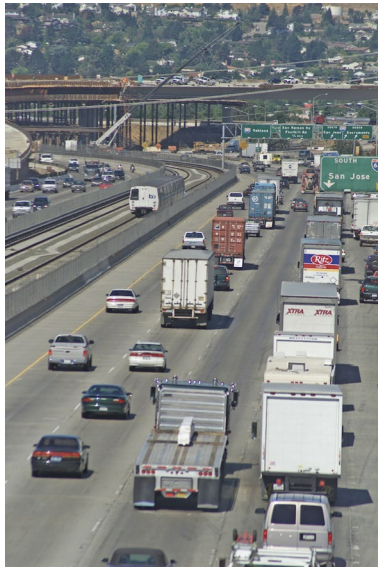
Support ***coordinated and interoperable*** transportation systems

Enable the ***sharing*** of data, and maintenance and operations costs

Cost over Plan Bay Area 2050 Period: **$600 Million**

Bay Area Express Lanes

Image source: http://www.actransit.org/doubledecker/



Cost over Plan Bay Area 2050 Period: **$7 Billion**

Link the Bay with Well-Maintained and Operated Transbay Bridges

Cost over Plan Bay Area 2050 Period: **$7-$12 Billion**

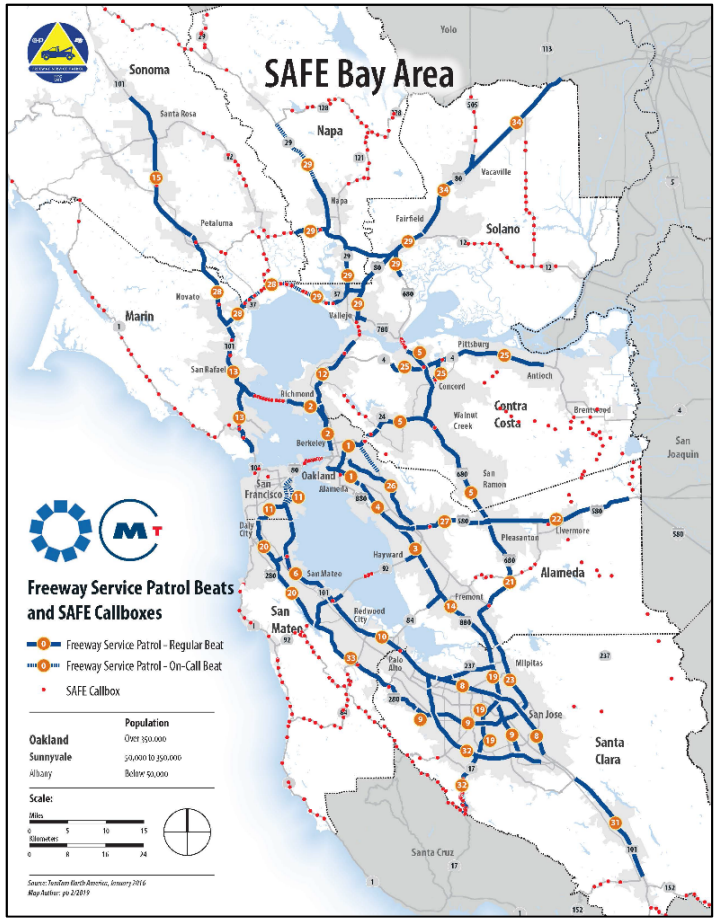
Cost over Plan Bay Area 2050 Period: **$200 Million**

Bay Bridge Bike/Ped Path and Gap Closure

Cost over Plan Bay Area 2050 Period: **$980 Million**

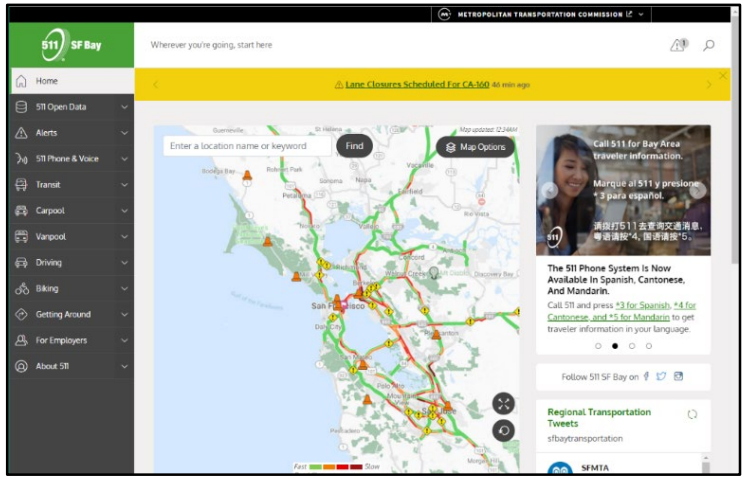
Connect People to Transportation Options and Services

Motorist Aid Services



Cost over Plan Bay Area 2050 Period: **$520 Million**

511 SF Bay



Cost over Plan Bay Area 2050 Period: **$340 Million**

Carpool/Vanpool

Bay Area Commuter Benefits Program

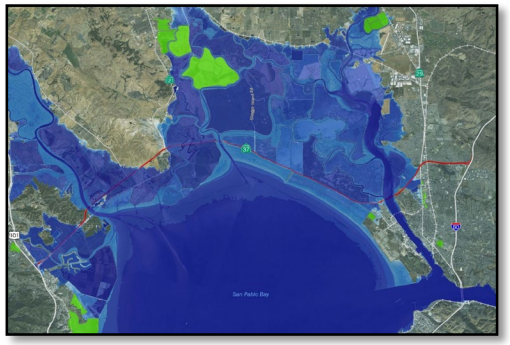
Bay Area Carpool Program

Bay Area Vanpool Program

Cost over Plan Bay Area 2050 Period: **$800 Million**

Integrate Transportation, Ecology and Sea Level Rise Adaptation into One Design
Resilient State Route 37

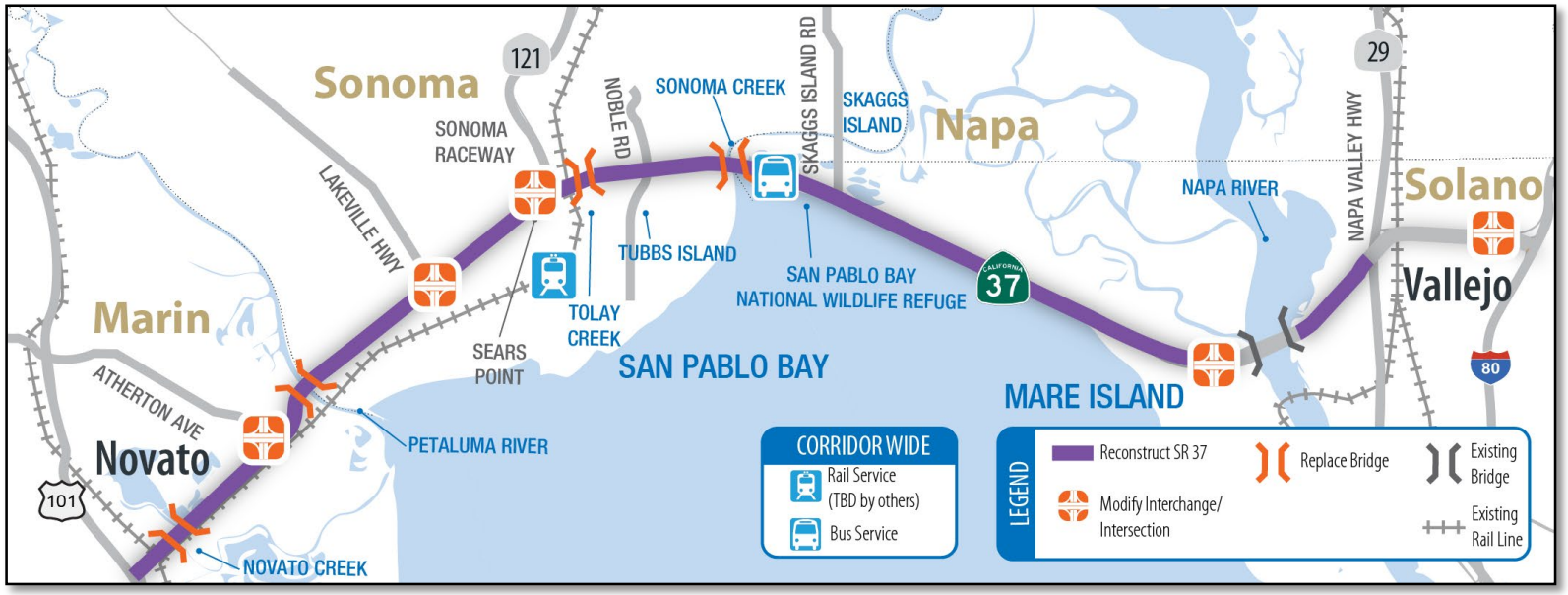
Flooding



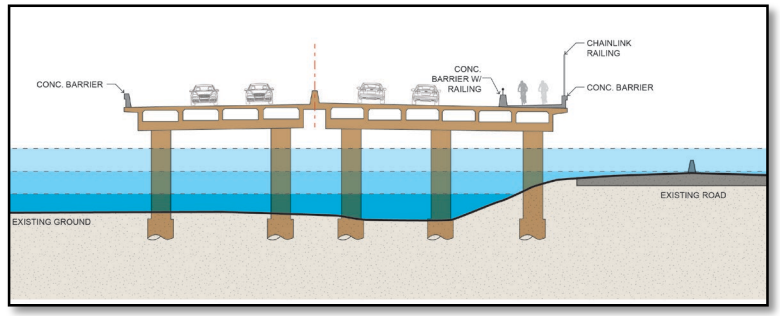
Rising Sea Level

Traffic Congestion

Ecology



***Cost over Plan Bay Area 2050 Period*: $6.7 Billion**



Resiliency

<u>PBA 2050 Goals Furthered</u>:

Affordable, Connected, Healthy, Vibrant

Enhanced Portfolio?

- Review Horizons analysis results
- Consider all Plan Bay Area 2050 project submittals
- Return with an updated list in Fall 2019 as needed to address emerging regional operations needs and connectivity gaps (e.g., Seamless Mobility/Micromobility, active transportation, pricing)