



Memorandum

Date: 12.02.15 **RE:** Plans and Programs Committee
December 8, 2015

To: Plans and Programs Committee: Commissioners Tang (Chair), Christensen (Vice Chair), Breed, Farrell, Yee and Wiener (Ex Officio)

From: Joe Castiglione – Deputy Director for Technology, Data & Analysis *JC*

Through: Tilly Chang – Executive Director *TC*

Subject: **ACTION** – Recommend Approval of the 2015 San Francisco Congestion Management Program

Summary

As the Congestion Management Agency for San Francisco, the Transportation Authority is responsible for developing and adopting a Congestion Management Program (CMP) for San Francisco on a biennial basis. The CMP is the principal policy and technical document that guides the Transportation Authority's CMA activities and demonstrates conformity with state congestion management law. The 2015 CMP incorporates several substantive updates, including 2015 system performance monitoring results; the updated CMP Capital Improvement Program; updates on initiatives to manage demand through pricing, incentives, and other strategies; Transportation Authority and City efforts to integrate land use and transportation planning in key locations; and other significant policy and planning progress since 2013.

BACKGROUND

As the Congestion Management Agency (CMA) for San Francisco, the Transportation Authority is responsible for developing and adopting a Congestion Management Program (CMP) for San Francisco, which must be updated every two years. The inaugural CMP was adopted in 1991, and the Transportation Authority Board has approved subsequent updates on a biennial basis. The CMP is the principal policy and technical document that guides the Transportation Authority's CMA activities. Through the CMP, the Transportation Authority also monitors the City's conformity with CMP requirements, per state congestion management law.

Conformance with the CMP is a requirement for the City to receive state fuel tax subventions and for the City's transportation projects to qualify for state and federal funding. State congestion management statutes aim to tie transportation project funding decisions to measurable improvement in mobility and access, while taking into account the impacts of land use decisions on local and regional transportation systems. CMPs also help to implement, at the local level, transportation measures that improve regional air quality.

The original CMP laws were enacted in 1989; since then, multiple legislative actions have amended the CMP requirements. For instance, Senate Bill (SB) 1636 (Figueroa), passed in 2002, granted local jurisdictions the authority to designate Infill Opportunity Zones (IOZs) in areas meeting certain requirements. Within a designated IOZ, the CMA is not required to maintain traffic conditions to the adopted automobile level of service (LOS) standard. Most recently, SB 743 (Steiner) modified the

criteria for local jurisdictions to designate IOZs and eliminated the previous December 2009 deadline to do so. The San Francisco IOZ, covering most of San Francisco based on transit frequency and land use criteria, was adopted by the Board of Supervisors in December 2009, but additional areas may now qualify for designation under the new legislation.

DISCUSSION

The purpose of this memorandum is to present an overview of the 2015 CMP update and seek a recommendation for its approval.

The CMP has several required elements, including:

- A designated congestion management network and biennial monitoring of automobile LOS on this network;
- Assessment of multimodal system performance, including transit measures;
- A land use impact analysis methodology for estimating the transportation impacts of land use changes; and
- A multimodal Capital Improvement Program (CIP).

The CMP also contains the Transportation Authority’s technical and policy guidelines for implementing CMP requirements, including deficiency plans, travel demand forecasting, and transportation fund programming.

CMP Update: The 2015 CMP is a substantive update, reflecting new data collection, activities related to important policy developments at various levels, and significant planning progress since 2013. Key updates include the following:

- **Roadway LOS Results:** The Transportation Authority, through its consultant team Iteris, conducted roadway LOS monitoring on the CMP network during the spring of 2015. Relative to the last monitoring cycle in 2013, average traffic speeds on the city’s CMP network streets and freeways decreased. The percentage decrease on arterials was more pronounced than on freeways, with speeds dropping 15% in the morning peak period and 21% in the evening peak period. Possible explanations include ongoing long-term construction (Transbay Transit Center, Presidio Parkway, and Central Subway) and strong job and population growth resulting in more people driving into San Francisco. Average weekday speeds in the morning and evening peak periods for 2013 and 2015 are shown in Figure 1.
- **Transit Performance:** Similarly, average Muni bus speeds on the CMP network fell between 2103 and 2015, but at a much lower rate than auto speeds. The net effect is that transit has become more competitive with driving because the ratio of auto speed to transit speed has dropped from an average of 2.0 in 2013 to 1.7 in 2015.

Facility Type	Spring 2013	Spring 2015
Arterial AM	17.1 mph	14.6 mph
Arterial PM	16.0 mph	12.7 mph
Freeway AM	38.2 mph	37.6 mph
Freeway PM	29.5 mph	26.3 mph

The Transportation Authority performed an analysis of Muni bus speeds using data provided by the San Francisco Municipal Transportation Agency from on-vehicle Automatic Passenger

Counters. Average bus speeds on the CMP network during the 2015 monitoring period were 8.7 mph in the AM peak period and 7.9 mph in the PM peak. Transit speeds were also monitored in 2013. Speeds declined by approximately one percent in the AM peak period and two percent in the PM peak period. During weekday peak periods, the percentage of CMP segments on which auto speeds exceeded transit speeds by a factor of two or more fell from 42% to 23% in the AM peak period, and from 49% to 19% in the PM peak period.

Transit speed variability increased, and the number of links on which bus speeds commonly vary from their averages by 30 percent or more increased in both the morning (from 12 to 15 segments) and afternoon (from 11 to 23 segments) peak periods. This metric will provide a useful baseline to compare reliability over time on specific streets in future CMP cycles.

- **Transportation Demand Management (TDM):** The TDM Element has been updated to include the city's efforts to implement TDM programs for new developments, through area plans, developer agreements, institutional master plans, and planning code requirements. It reflects advancements in TDM studies and plans, including the Travel Demand Management Toolkit and TDM Partnership Project. It includes updates on the city's policies for commuter shuttles, carsharing, bikesharing, and two new pilot projects. This chapter also shows advances in parking policy through the Parking Supply and Utilization Study and *SFpark*.
- **Land Use Impacts Analysis Program:** This chapter has been updated to reflect the adoption of Priority Conservation Areas under Plan Bay Area and the One Bay Area Grant (OBAG) which promotes development within Priority Development Areas in the Bay Area. The chapter also highlights our involvement in regional strategic planning through the Core Capacity Transit Study, which aims to identify strategic investments to meet the region's long-term transit needs, with a focus on the relationship between land use and transportation. It includes a discussion of neighborhood- and community-level transportation planning through the Prop K-funded Neighborhood Transportation Improvement Program and the Metropolitan Transportation Commission's Community Based Transportation Planning program. Finally, this chapter provides updates on the Governor's Office of Planning and Research's draft guidance on the quantification of significant transportation impacts under California Environmental Quality Act, pursuant to SB 743, which indicates that a vehicle-miles traveled-based (VMT) metric is likely.
- **CIP:** The CMP must contain a seven-year CIP that identifies investments that maintain or improve transportation system performance. The CMP's CIP is amended concurrently with relevant Transportation Authority Board programming actions. Thus, the 2015 CMP reflects program updates since adoption of the 2013 CMP, most notably 2014 and 2015 Transportation Fund for Clean Air county programs, Cycle 3 of the Lifeline Transportation Program, the extension of the first OBAG Cycle, the 2014 Prop K Strategic Plan, and the Prop AA Strategic Plan. Also, as required by state law, the CMP confirms San Francisco's project priorities for the Regional Transportation Improvement Program, which is adopted by the Metropolitan Transportation Commission (MTC) for submission to the state.

Over the next two years, the Transportation Authority will continue to coordinate transportation investments and support all aspects of project delivery across multiple agencies and programs, from smaller neighborhood pedestrian, bicycle and traffic calming projects to major projects including the Presidio Parkway, the Transbay Transit Center and Caltrain Downtown Extension, Caltrain Electrification, the Central Subway, and proposed bus rapid transit improvements on Van Ness Avenue and Geary Boulevard.

- **Modeling:** State law requires CMAs to develop, maintain, and utilize a computer model to analyze transportation system performance, assess land use impacts on transportation networks, and evaluate potential transportation investments and policies. The Transportation Authority's activity-based travel demand model, SF-CHAMP, has been updated since 2013, and model enhancements are discussed in the 2015 CMP, along with required documentation of consistency with MTC modeling practices.

ALTERNATIVES

1. Recommend approval of the 2015 San Francisco CMP, as requested.
2. Recommend approval of the 2015 San Francisco CMP, with modifications.
3. Defer action, pending additional information or further staff analysis.

CAC POSITION

The CAC was briefed on this item at its December 2, 2015 meeting and unanimously adopted a motion of support for the staff recommendation.

FINANCIAL IMPACTS

While there is no direct impact on the Transportation Authority's adopted Fiscal Year 2015/16 budget, adoption of the 2015 CMP is needed to ensure the City's continued eligibility for the state gas tax revenues authorized by CMP legislation. Leveraging of these other funds is essential in order to deliver the Prop K and Prop AA Expenditure Plans, as well as other San Francisco projects citywide.

RECOMMENDATION

Recommend approval of the 2015 San Francisco CMP.

Attachment:

1. Draft CMP Executive Summary

Enclosures (2):

- A. Draft 2015 San Francisco Congestion Management Program
- B. CMP Technical Appendices

EXECUTIVE SUMMARY

A. Introduction

The San Francisco Congestion Management Program (CMP) is a biennial program conducted in accordance with state law to monitor congestion and adopt plans for mitigating traffic congestion that falls below certain thresholds. By statute, the CMP legislation originally focused its requirements on measuring traffic congestion, specifically through Level-of-Service (LOS), which grades roadway facilities by vehicle delay. In the years since, the Transportation Authority has opted out of LOS monitoring¹ (although it still reports LOS for planning purposes). The agency has evolved its CMP to include multimodal, time of day, and other system performance monitoring, in recognition that automobile-focused metrics such as LOS result in a limited view of transportation issues, which can result in inefficient, modally biased, and often, unintentionally, counter-productive solutions.² In November 2013, the state passed SB 743, which specifically repeals automobile delay as measured by LOS or other similar measures as a measure of significant impact in environmental review, and tasks the Office of Planning and Research (OPR) with preparing guidance on appropriate alternative metrics.

The CMP legislation aims to increase the productivity of existing transportation infrastructure and encourage more efficient use of scarce new dollars for transportation investments, in order to effectively manage congestion, improve air quality, and facilitate sustainable development. In order to achieve this, the CMP law is based on five mandates:

- Require more coordination between federal, state, regional, and local agencies involved in the planning, programming, and delivery of transportation projects and services;
- Favor transportation investments that provide measurable and quick congestion relief;
- Link local land use decisions with their effect on the transportation system;
- Favor multimodal transportation solutions that improve air quality; and
- Emphasize local responsibility by requiring a Congestion Management Agency (CMA) in each urban county in the state.

The purpose of the 2015 San Francisco Congestion Management Program (CMP), prepared by the San Francisco County Transportation Authority, (the Transportation Authority) is to:

- Comply with state law by adopting a biennial CMP and submitting it to the Metropolitan Transportation Commission (MTC) for a conformance finding.
- Report the status of key inter-agency and SFCTA congestion management initiatives as identified in the 2013 San Francisco Transportation Plan and;
- Outline the congestion management work program for fiscal years 2015/16 and 2016/17; and
- Set forth policies and technical tools to implement the CMP work program.

¹ See 2010 SB1636 Infill Opportunity Zone legislation and SFCTA Resolution XX-XX

² In order to reduce vehicle delay and improve LOS, without considering strategies that encourage shifts to other modes, the increased roadway capacity is the implied solution, which, in turn, has been shown to lead to more driving (induced demand).

B. State of Transportation

B.1 | What are the causes of congestion in San Francisco and how are we managing it?

San Francisco is an employment hub for a region with booming jobs and population growth. Population growth in the Bay Area, and San Francisco in particular, is outpacing projections. San Francisco’s estimated 2014 population is over 850,000 (with a daytime population near 1 million³), about 10,000 more residents than ABAG projected for 2015.^{4,5} Similarly, the region realized population growth in 2014 that was about 1% higher than projections for 2015. At the same time, employment is growing faster than population: between September 2009 and April 2015, San Francisco’s workforce has increased by 140,000, while the population increased by around 50,000.⁶ Housing production, on the other hand, is lagging. This means that people are coming to San Francisco for work but live elsewhere and commute into the city.

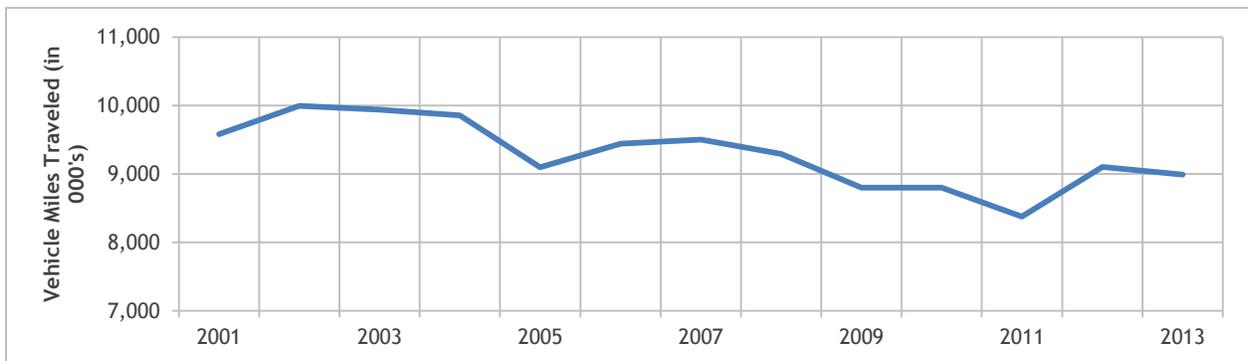


Figure 1: Daily Vehicle Miles Traveled in San Francisco, 2001-2013

Source: Caltrans Annual California Public Road Data Report, 2001-2013

Strategies to managing congestion are key to maintaining our accessibility as the city grows. These include: improving public transportation, bicycling and walking routes and facilities; coordinating new development to support walkable and transit-oriented neighborhoods; and managing vehicle use, parking and traffic signals to ensure safety and efficiency. There is evidence that these long-term strategies are working. As shown above in Figure 1, Vehicle miles traveled (VMT), a measure of the amount of total amount of driving, has been declining in San Francisco for over a decade, although the long term trend includes a dip then rise in VMT following the 2008-2009 recession.⁷ Recent Census data also points to a trend of decreasing driving and reliance on automobiles. Between 2009 and 2014, the total number of San Francisco residents who commute to work in a private automobile has declined, while commuting by public transportation, bicycling, walking, and commuting by other means have increased. Of new commute trips, 37% are on public transit, 41% are active transportation (walking and biking). Over the same period, 44% of new households in San Francisco are car free.⁸

³ San Francisco has an estimated daytime population of 970,000, based on Analysis of the 2010-2012 California Household Travel Survey

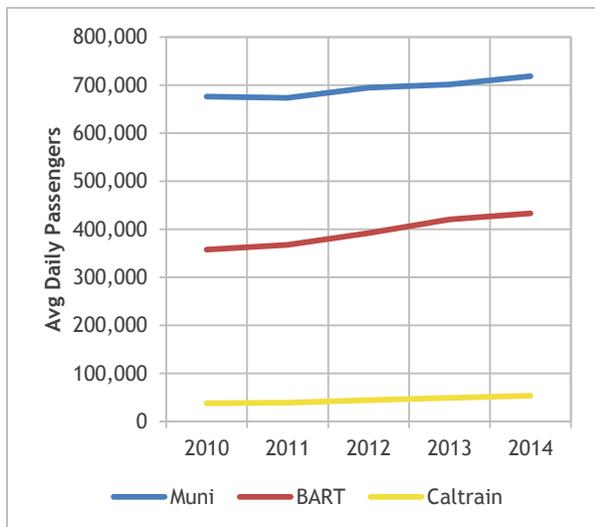
⁴ United States Census 2014 Population Estimate

⁵ Association of Bay Area Governments, Projection 2013

⁶ Office of Economics and Workforce Development Quarterly Dashboard Reports

⁷ Caltrans Annual California Public Road Data reports, 2001-2013.

⁸ Census American Communities Surveys 2005-2009 and 2010-2014.



San Francisco’s strong backbone of local and regional transit has been key to our ability to manage congestion. Muni, BART, Caltrain, and a handful of commuter bus lines, help move people into and around the city efficiently. Privately sponsored and operated services are also adding needed capacity. But as demand grows, our major transit systems are becoming crowded. Between 2010 and 2014, ridership on the three largest transit providers in San Francisco has been growing, as shown in Figure 2.

Figure 2: Average Daily Passengers by Transit Operator, 2010-2014

B.2 | How does the state of transportation measure up?

The recent increase in VMT corresponds with an increase in congestion, although over the last 15 years San Francisco is well below the peak VMT of the early 2000s. Between 2013 and 2015, in the afternoon peak travel period, average speeds on freeway segments have decreased 3.2 mph (10.8%) from 29.5 mph to 26.3 mph; and on arterial segments by 3.3 mph (20.6%), from 16.0 mph to 12.7 mph.

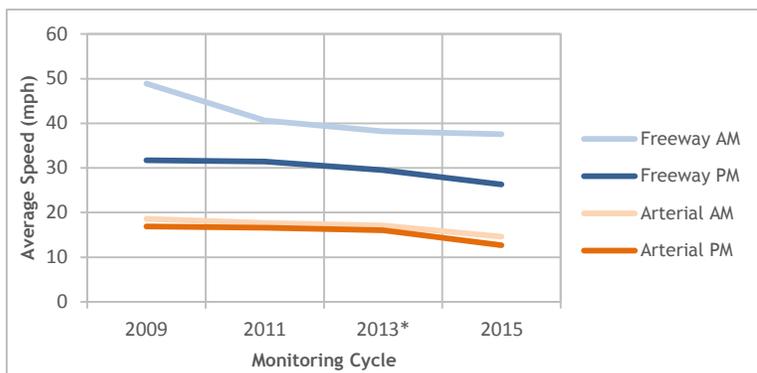


Figure 3: Average Speed over CMP Monitoring Cycles, 2009-2015

In the downtown core of San Francisco and freeways approaching downtown, where roadway expansion is neither feasible nor desirable, traffic speeds are particularly slow, as shown in Figure 4.

Recognizing that the City’s transportation infrastructure can be used more efficiently to move more people, San Francisco has invested in prioritizing transit. Since 2013, the SFMTA has implemented service increases on 17 lines as part of Muni Forward, Phase 1 of Clay Street Transit-Only Lanes, Haight Street transit only contraflow lanes, more visible red lanes on Market Street, and other transit enhancements. The Transportation Authority has helped to fund Muni Forward as well as the replacement and expansion of Muni’s bus and rail fleet. These investments have begun to pay off, and transit is becoming measurably more competitive with driving.

While transit speeds have become more competitive relative to driving speeds, transit speeds, like automobile speeds, have declined since 2013, from 8.1 mph to 7.9 mph for the rubber-tire fleet in the evening peak period.⁹ This may be an indication of increased economic activity, traffic impacts from construction and the provision of more dedicated right-of-way to transit, bicycling and walking on some streets. While both transit and driving speeds have decreased, the decrease in transit speeds has been notably less than the decrease in auto speeds, indicating the effectiveness and importance of Muni Forward bus priority measures such as dedicated lanes and transit signal priority.

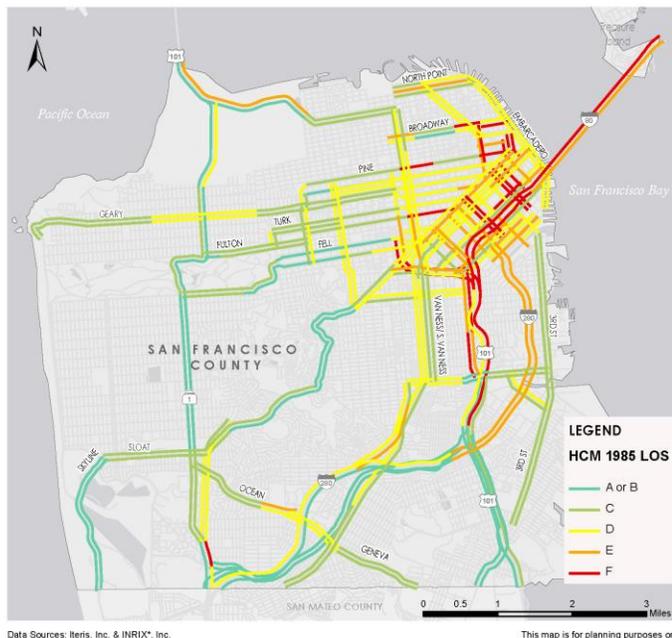


Figure 4: Level of Service on CMP Segments, 2015 PM Peak

Figure 5 shows in orange the percentage of congestion management program (CMP) roadway segments in 2013 and 2015 categorized by their automobile-to-transit speed ratio. The lower the ratio, the more competitive transit is with driving, in terms of speed. An auto-to-transit ratio of 2, for example, means that auto speeds are twice transit speeds, while a ratio of 1 indicates that transit moves at the same speed as auto traffic. San

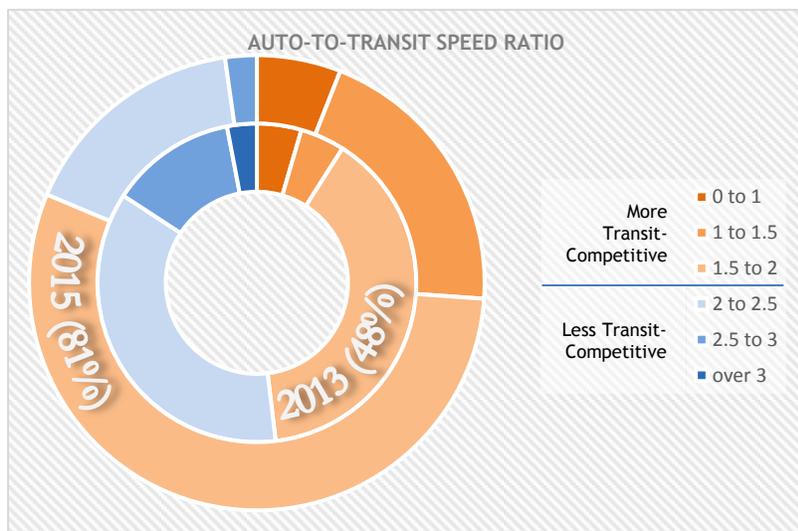


Figure 5: Auto-to-Transit Speed Ratio in the PM Peak, 2013 to 2015

Francisco is moving in the right direction, with 33% more street segments in the under an auto-to-transit speed ratio of 2. Transit does not need to have speeds as high as auto traffic to be competitive; transit is less expensive than driving and enables productive use of in vehicle time, among other benefits.

⁹ Transit speeds are reported on CMP segments for comparison with auto speeds. They are not at a route level. At least 50% of a CMP segment must be covered by a Muni route to be reported. Light rail vehicles, cable cars, and historic street cars are not included.

C. What are we doing to manage congestion?

What is San Francisco doing about congestion?

C.1 | Managing Demand for Travel

San Francisco has a robust set of travel demand management (TDM) programs, policies, and requirements designed to enable and encourage people to make trips by transit, walking, and biking and to smooth vehicle circulation. These include a focus on new development as well as on managing congestion in existing neighborhoods and built up areas:

- Coordinating transportation aspects of area plans, development agreements, and other requirements on new development, including:
 - » Central SoMa Land Use Plan
 - » Central Waterfront development projects
 - » Treasure Island, Hunter's Point /Shipyard, Schlage Lock, Parkmerced
 - » Transportation Sustainability Project
- Policies and programs to manage trips in existing neighborhoods and built-up areas, including:
 - » Commuter Benefits Ordinance and Emergency Ride Home Program
 - » SFMTA Commuter Shuttle Policy
 - » SFMTA Carsharing Policy
 - » BART Travel Incentives Pilot Project
 - » Parking Management and *SFpark*
 - » Transportation Demand Management neighborhood outreach and employer engagement

Furthermore, San Francisco is encouraging efficient land use planning by supporting development at higher densities in areas that are mixed-use (closer to jobs and retail) and are well served by transit. Plan Bay Area, the region's first Sustainable Communities Strategy, identifies Priority Development Areas (PDAs) where densities and transit levels can more readily support transit-oriented development. The Transportation Authority prepared a Transportation Investment and Growth Strategy, which describes how San Francisco will support PDAs through transportation investment. The city's use of Metropolitan Transportation Commission PDA planning funds is supporting the following planning efforts and studies in line with the Transportation Investment and Growth Strategy:

- PDA Planning Projects
 - » Rail Storage Alternatives Analysis and I-280 Boulevard Feasibility Study
 - » Embarcadero Multi-Modal Planning
 - » Bayshore Multimodal Facility Study and Circulation Studies
 - » 19th Ave/M-Oceanview Transit Improvement Study
 - » Ocean Avenue Pedestrian and Streetscape Improvements
 - » Caltrain North Terminal Study to Support Future Operations

C.2 | Planning Projects

San Francisco is planning to address needs in existing neighborhoods as well as for the long term needs of the City and the region. In order to support sustainable transportation currently and in the future, many initiatives called for in the 2013 San Francisco Transportation Plan are underway. The Transportation Authority is also coordinating with numerous local, regional state and Federal agencies and with the private sector to address congestion. Key initiatives include:

- Vision Zero Program
- MTC Regional Core Capacity Transit Study
- Freeway Corridor Management Study (managed lanes/carpool lane feasibility)
- Transportation Sustainability Program (proposed Transportation Sustainability Fee on residential and institutional development)
- Geary Corridor and Geneva/Harney Bus Rapid Transit
- Better Market Street Project
- Treasure Island Mobility Management Program
- Neighborhood Transportation Improvement Program (planning and capital improvement grants)
- Shared Mobility, Late Night, Parking Management and School Transportation sector studies

C.3 | Funding and Delivering Projects

The Transportation Authority is supporting near- and long-term transportation needs for San Francisco by funding capital improvements, projects, and programs through Proposition K transportation sales tax and Proposition AA vehicle registration fee, grant programs, administration of regional OneBayArea Grants (OBAG) funds, and coordinating with other local and regional agencies to apply for state and Federal funding to match local investments. Below are a few signature projects supported with Transportation Authority programmed funds. Appendices 12, 13, 14, 15, and 16 provide more detail.

- Muni Forward
- Central Subway
- Caltrain Extension to Transbay Terminal
- Caltrain Electrification

In its role as Congestion Management Agency, as part of the OBAG framework for distribution of federal transportation funds, the Transportation Authority prepared the Transportation Investment and Growth Strategy and, through that program has programmed funds to the following projects:

- Chinatown Broadway Phase IV Street Design
- ER Taylor Safe Routes to School
- Light Rail Vehicle (LRV) Procurement¹⁰
- Lombard Street US-101 Corridor Improvement
- Longfellow Safe Routes to School
- Mansell Corridor Improvement

¹⁰ Funds for LRV were reprogrammed from SFMTA's Masonic Avenue Complete Streets project. See Appendix 12 for additional information.

- Second Street Streetscape Improvements
- Transbay Center Bike and Pedestrian Improvements

The Transportation Authority is also overseeing and leading the delivery of key projects, including serving as co-sponsor or lead agency for the construction of:

- Presidio Parkway (co-sponsor of Doyle Drive replacement)
- Folsom Street Off-Ramp Realignment
- Yerba Buena Island I-80 Interchange Improvement Project