## **BUILDING AMERICA'S FUTURE**

Bay Area on the Move





# BUILDING AMERICA'S FUTURE Bay Area on the Move

35<sup>th</sup>
Annual Report
to Congress

March 2014



## METROPOLITAN TRANSPORTATION COMMISSION

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## A Blockbuster Year for Transportation **Projects in the Bay Area**

2013 was an extraordinary year for Bay Area transportation, with the opening of three huge projects that each have been under development for over a decade.

# A SECURITY OF SECURITY

## **New East Span Opens**

The \$9 billion state Toll Bridge Seismic Retrofit Program reached completion in September 2013 when the \$6.4 billion replacement for the East Span of the San Francisco-Oakland Bay Bridge opened to traffic on Labor Day.

## San Jose Alercury News

2013 was a banner year for Bay Area transportation improvements

by Gary Richards

Despite worsening traffic delays across the Bay Area, 2013 v as a year in which huge transparent transparence completed. were completed -year in many dec

Among the morawaited upgrade the Caldecott on the Gold bypass at De to repave I-5 smoothed of

"I think it # # the bigger transport 1930s," mission Bay Bri and the (1937)

Added \* the C There's more, although some improvements are not as visible to motorists. retrofitting on all state-

retrollting on an state-owned watered. The Valley

Some motorists remain disgruntled by the removal of all toll takers on the Golden Gate. But an increasing number are asking when toll booths will be gone from other table.

CONTRA COSTA TIMES

Bay Bridge: Drivers, cyclists take to 'awesome' new span By Mike Rosenberg, David DeBolt and Doug Oakley, Staff Writers

OAKLAND - After a 24-year wait for a new eastern span of the Bay Bridge, the first commute day on the Bay Area's freshest landmark was rather anticlimactic.

Sure, there were the expected traffic back-ups Tuesday — exacerbated by thousands of bridge-gazers who just couldn't wait to cruise under the big white cables — but nothing too crazy.

stopping in gridlock for several minutes at the toll plaza and metering lights was now worthy of being uploads to YouTube. Most commuters slowed down around the new tower to take in the land-mark in all its 525-foot-high glory.

"It was awesome," said Twitter employee Dan Sullivan, a 36-year-old Montclair

first artest: A woman going east was pulled over near the toll plaza and booked on suspicion of DUI at 2:15 a.m., just four hours after traffic began flowing on the bridge. And the first crash: A three-car collision at 11 a.m. sent one person to the hospital with minor injuries.



SEPTEMBER 3, 2013

Spirit of victory prevails at opening of

new Bay Bridge

Hey Area got its bridge.

span of the Bay Bridge, to complete and features ar inchored suspension span dedestrian path, officially nday night at 10:18 p.m.

Lt. Gov. Gavin No. beautiful display of a reinvestment in su

"Bridges are monute stand here between Ma Quan I hope this is range land masses," he said chain with a blow to

San Fr

Tunnel tam

Almost from the time in 1937 when High way 1 was placed precariously on promontory on the San Mateo Cour coast, high above the Pacific, man has be trying to tame Devil's Slide - with lit

#### Caldecott Tunnel Gets New Fourth Bore

In November, Caltrans opened the new fourth bore of the world-class Caldecott Tunnel on State Route 24, providing two dedicated tunnels in each direction to

aid more than 160,000 commuters daily and end the 50-year-old process of manually reversing the flow of traffic twice per day along the middle bore. At a final cost of \$417 million, the fourth bore has been designated as a regional lifeline structure and is designed to reopen to emergency traffic within 72 hours of a major earthquake.

## **Devil's Slide Tunnels Restore** Predictable Access to Highway 1

In March, Caltrans opened the first new highway tunnels in California in nearly 50 years when it cut the ribbon on the Tom Lantos Tunnels, popularly known as the Devil's Slide Project. The tunnels provide guaranteed access for this portion of Highway 1, which had a history of closure due to rockslides and land slippage. One of the longest road closures happened in 1995, lasting 158 days. At 4,200-feet, the twin tunnels are now the longest in California. The \$439 million project features 32 jet-powered fans for ventilation and 10 fireproof shelters between the tunnels.



Caldecott's new bore more than a tunnel

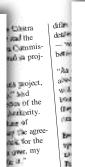
## ancisco Chronicle

## es perilous Devil's Slide at last

mpaigned for it for years and then waited,

"It just seems unreal to me," said Zoe Keren-Tucker, a Moss Beach activist who Taking it to the street

mostly patiently, since 2007 for it to be Despite continuing local opposition to the bypass, county supervisors declined to ask Caltrans to build a tunnel. So activists did.



## **CONTRA COSTA TIMES**

## **Devil's Slide tunnels open at last**

By Aaron Kinney, Bay Area News Group

MONTARA - Call it an exorcism.

Seventy-six years after building an extension of Highway 1 at Devils Slide, Caltrans is ready to shut down the landslideThe tunnels promise real improvement in the lives of people who reside and work on the coast. The landslides that plagued the road since it opened, including closures for several months in 1995 and

to each thin good fatiget to life an entity was. Use the school for the chief

tain. The road was tied to a bold idea for development on the sparsely populated coast

"They saw another couple hundred thou-

Metropolitan Transportation Commission | 35th Report to Congress

worth celebrating

HELCOME TO THE 4th DORE

## America Needs a Metropolitan Mobility Program

MAP-21 reduced the amount of highway funds invested in metropolitan areas. For our region this resulted in \$25 million less per year. We call on Congress to reverse this trend in the next bill and ensure that federal funds are invested where they will generate the greatest benefit.

In the extension of the Moving Ahead for Progress in the 21st Century Act (MAP-21), we ask Congress to increase its investment in metropolitan areas — our nation's economic engine. Steering more funds to metro areas will not only focus federal resources where the vast majority of Americans live, it also will provide a greater return on investment

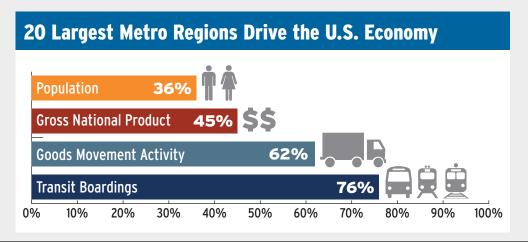
for the nation as a whole. The fact is, the U.S. economy will rise and fall based on how well our metro economies perform and compete in the global marketplace.

As shown at right, the average San Francisco Bay
Area resident contributes
almost 60 percent more to our gross domestic product (GDP)
than the average American. This is not a unique Silicon Valley phenomenon: A "metro dividend" is present in 15 of the 20 largest metropolitan areas nationwide.

"The federal government must continue to be a strong partner in our shared efforts to make our nation's regions more competitive in the future."

Atlanta Mayor Kasim Reed
 Testimony before House Transportation &
 Infrastructure Committee, January 14, 2014

Top-Performing Metros	Percent of GDP/Capita
San Francisco Bay Area, CA	158%
Washington, D.C.	144%
Seattle, WA	137%
Houston, TX	137%
Boston, MA	136%



# Key Recommendations for a National Freight Program

Metropolitan areas drive global trade. In 2012, just 300 metropolitan areas across the globe produced 51 percent of global economic output. Increased international trade with metro areas overseas is critical to boosting the U.S. economy as exports are responsible for more than half of the growth in economic output since the recession ended.\*

Given the critical role that goods movement plays in our economy and the challenges it imposes on our transportation infrastructure, we urge Congress to adopt a National Freight Program in the successor to MAP-21 that incorporates the following five principles.

## 1. Establish a Multimodal National Freight Network

While MAP-21 took an important first step in acknowledging a national interest in freight, future goods-movement legislation should broaden the definition of the Primary Freight Network beyond roadways and include freight rail, navigable waterways, inland ports, seaports, land ports of entry, freight intermodal connectors and airports.

## 2. Establish a National Freight Infrastructure Grant Program

To fund improvements to the nation's freight infrastructure, a new national freight infrastructure grant program must be established and funded at a minimum of \$2 billion per year. The program should have both a competitive program and a formula program. Eligible projects should include:

- Enhancements to the efficiency and capacity of the freight network, including intermodal and terminal access, truckways, highway and key freight connector operational improvements, highway-rail grade separations, freight rail improvements, capacity expansion projects and similar investments across a variety of modes.
- Project elements that mitigate negative impacts borne by communities adjacent to key freight infrastructure.
- Upgrades to truck fleets, cargo handling equipment, locomotives and shoreside power infrastructure to reduce energy consumption and emissions.

## **Exports Matter:**

"With more than 95 percent of the world's consumers projected to be outside the United States in the coming decade, as well as 80 percent of global economic growth, many U.S. metro areas are moving aggressively to capitalize on this opportunity."

- Brookings Institute, 2013



Goods movement is a critical component of the Bay Area's economic and transportation systems. (Photo: Getty Images/Fuse)

<sup>\*</sup> Source; "Metro-to-Metro: Global and Domestic Goods Trade in Metropolitan America," Adie Tomer, Robert Puentes, and Joseph Kane, Brookings Institute, 2013.



The Port of Oakland is the nation's fifth-busiest container seaport and a critical California export port. (Photo: Tom Tracy)

## A Competitive Multimodal Freight Program

A discretionary, merit-based grant program for projects of national significance should be established and should comprise the majority of the National Freight Program.

- Projects should be selected by an Office of Freight Policy within the Office of the Secretary of Transportation based on objective criteria aimed at maximizing and enhancing the performance of the national freight network.
- To be eligible, projects must be included in a state's Freight Mobility Plan. For metropolitan areas over 1 million in population, projects must be endorsed by the appropriate metropolitan planning organization (MPO).

## A Formula-Based Freight Program

Given that goods travel across all 50 states, a portion of the new National Freight Program should be distributed on a formula basis so that each state receives some level of funding.

- The formula should be based on freight metrics in each state.
- Projects could be selected by state departments of transportation, in consultation with ports and MPOs.



 The funds should be eligible for a wide range of projects across all modes, including port improvement projects inside and outside terminals.

# 3. Establish a National Freight Trust Fund Backed by New User Fees

Realization of a National Freight Program depends on Congress authorizing new revenue mechanisms to support it.

Additionally, to ensure that the funds are dedicated to goods movement and not diverted to other purposes, Congress should establish a National Freight Trust Fund restricted to projects benefiting goods movement.



On average, almost 4,000 trucks per day travel through West Oakland on their way to the Port of Oakland. (Photo: Peter Beeler, MTC)

## 4. Reward Higher Local Match

To ensure that the competitive program is targeted to the most critical freight projects that will have the greatest economic benefit to the nation, we recommend:

- Incentives to reward projects with a local match from public and/or private sources equal to or greater than 50 percent. Incentives could include extra points in any competitive framework or a minimum set-aside for such projects.
- A minimum total project cost of \$100 million for the competitive program to ensure that scarce federal resources are being invested in projects that are significant at a regional and/or national scale.
- Incentives to reward projects that support the national economy by improving the efficiency of exporting goods produced in the United States.



The FedEx regional hub at Oakland International Airport processes up to 280,000 packages of freight each day. (Photo: Courtesy of Port of Oakland)

## A Growing Consensus

Major metros are united in their support for a strong federal role in freight policy. In February 2014, MTC joined MPOs in Atlanta, Chicago, Detroit, Miami-Dade, Seattle, Southern California and other metropolitan regions to send a joint letter to Congress with three key freight policy and funding recommendations for the next federal transportation bill:

- Involve metro regions in the freight investment decision-making process
- Secure new revenue to support a dedicated Freight Trust Fund that can support a national freight program of at least \$2 billion/year
  - Expand the definition of the national freight network beyond roadways to include a multimodal network

## 5. Finance the National Freight Trust Fund with a Combination of Revenue Sources

MTC recommends the federal program incorporate multiple revenue options so that the burden of funding the new program is distributed widely across all freight modes. Any revenue option should not result in a competitive disadvantage for the Port of Oakland in relation to other North American ports, including those in Canada and Mexico, and ensure that all users of the freight system pay their fair share. Potential revenue options include the following:

#### Carriage Fee

This option, sometimes referred to as a "waybill tax," assesses a charge based on the cost of transporting a good. Such a fee is applied across all modes. According to the Coalition for America's Gateways and Trade Corridors, a 1% carriage fee could generate between \$7-9 billion per year. Such a charge corresponds most directly to the burden a particular product imposes on the nation's freight system.

## **Weight-Distance Tax**

A weight-distance tax is a charge based on the truck's axle weight (commensurate to the damage done to the road) and the roads being used by the truck (charging more for highuse roads to account for the added burden that truck traffic has on the system). A number of states, including Oregon, Kentucky, New Mexico and New York, use some form of a weight-distance tax.

## **Indexing Existing Truck User Charges to Inflation**

■ Double and index the heavy vehicle use tax. The current charge (\$100 plus \$22 per 1,000 pounds over 55,000 pounds and \$550 for every vehicle weighing over 75,000 pounds) has not been increased since 1983. It currently generates \$364 million per year for the Highway Trust Fund (HTF).

Double and index the federal excise tax on truck tires, which is imposed on the purchase of all tires with a maximum rated load over 3,500 pounds. The current tax (9.45¢ per every 10 pounds that exceeds 3,500 pounds) generates \$440 million per year for the HTF.

#### **Non-Federal Revenue Options**

Public-Private Partnership Opportunities: Expand federal tax code incentives and credit assistance to lower the cost of borrowing for the design and construction of freight-related projects. Establish a high match requirement for the grant program to create incentives for private sector investment.



The Bay Area's rail facilities serve two major freight railroads operating in the Western United States. (Photo: ©Nivek Neslo/Photodisc/Jupiterimages)

Opt-in Container Fee: Establish an opt-in national container fee to be applied at local discretion for seaports and land ports-of-entry, modeled on the airport passenger facility charge which is authorized at a national level, but imposed at local discretion. Funds would be distributed on a return-to-source basis to each seaport or, for a land port-of-entry, to an International Border Program Fund with funds designated to the entity responsible for improvements to that particular border crossing.



Trucks clog local streets near the busy Port of Oakland. (Photo: Peter Beeler, MTC)

## The Clock Is Ticking: Restore Solvency to the Highway Trust Fund

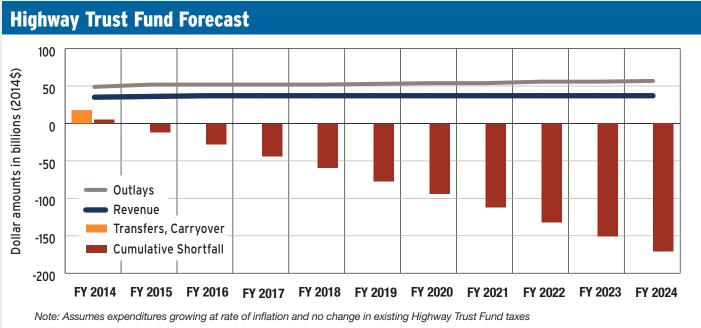
According to the **Congressional Budget** Office, failure to enact increased user fees in 2014 will require either deficit spending of \$19 billion in 2015, or cuts in federal spending of at least 35 percent, or some combination thereof.

America faces a new fiscal cliff. The Highway Trust Fund (HTF) will be unable to meet its existing obligations beginning fiscal year 2015. Congress must act before October 2014 to prevent major cuts in spending.

Since 2008, Congress has approved \$53 billion in General Fund transfers to the HTF to avoid raising user fees or making unpopular cuts. The time has come for Congress to step up and address the source of the problem - dwindling revenue from the federal gasoline and diesel excise taxes. which haven't been raised since 1993. As shown below, based on current revenues and expenditures, there is a shortfall of \$13 billion/year, plus an additional \$6 billion needed to maintain cashflow for reimbursements to states, resulting in a \$19 billion need in fiscal year 2015.

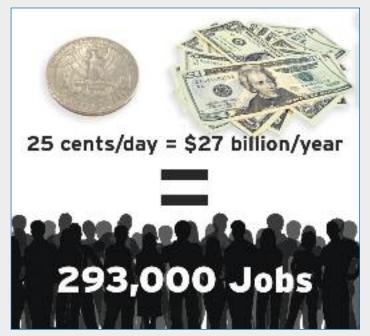
## Update the Gas Tax: Enact H.R. 3636 (Blumenauer)

MTC applauds Congressman Blumenauer for offering a solution to our funding challenges by introducing H.R. 3636 (Blumenauer), the Update, Promote and Develop America's Transportation Essentials (UPDATE) Act of 2013 and urges the Bay Area Congressional delegation to actively support the bill.



Source: Congressional Budget Office, February 2014

Gas Tax Cost for Drivers			
Cent/Gallon Increase	Avg. Cost per Day	Cent/Gallon Increase	Avg. Cost per Day
1	\$0.02	11	\$0.18
2	\$0.03	12	\$0.19
3	\$0.05	13	\$0.21
4	\$0.06	14	\$0.23
5	\$0.08	15	\$0.24
6	\$0.10	16	\$0.26
7	\$0.11	17	\$0.28
8	\$0.13	18	\$0.29
9	\$0.15	19	\$0.31
10	\$0.16	20	\$0.32



Source: Job impact estimates based on Council of Economic Advisors 2009 report

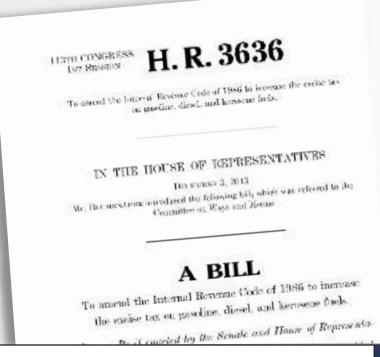
H.R. 3636 calls for a 15-cent-per-gallon increase in the federal gasoline and diesel excise taxes phased in over three years and adjusted for inflation thereafter. This increase will bring the HTF into balance, while also accommodating increased infrastructure investment that our nation sorely needs.

In response to recent polls showing jobs are America's priority concern, H.R. 3636 provides a way to create tens of thousands of new jobs by restoring our transportation infrastructure.

Congress has shown it can still pass important legislation as evidenced by passage of the Farm Bill, the Water Resources Development Act and the fiscal year 2014 omnibus appropriations act. We are hopeful that the 113th Congress can continue down this pragmatic path in a bipartisan manner, and enact an extension to MAP-21 that restores solvency to the Highway Trust Fund.

of Americans support increasing infrastructure investment to create jobs

Source: United Technologies/National Journal Congressional Connection Poll, Nov. 2013



A 15-cent-per-gallon gas tax increase adds up to less than a quarter per day for the average vehicle owner.

Note: This calculation assumes average annual mileage of 13,500 and average fuel efficiency of 23.5 miles/gallon.

Source: U.S. Department of Transportation

Photo: © Jason Todd/Getty Images

## States Lead the Way

While Congress has avoided raising the gas tax for over 20 years, legislative leaders on both sides of the aisle are recognizing that often the best way to generate new transportation funding in the near term is by raising the gas tax.

Ten states raised fuel taxes in 2013, as shown below. In four of them (Connecticut, Massachusetts, Maryland and Wyoming), the Legislatures voted to raise their fuel tax directly, with the largest increase – 10 cents per gallon – coming from the State of Wyoming.

The tax went up automatically in another five states (California, Florida, Kentucky, Nebraska and North Carolina) based on prior legislation that

triggers increases based on the price of fuel or inflation. In Vermont, the Legislature enacted a partial swap of its excise tax for a fuel sales tax, generating a net increase of about 6 cents per gallon in the short term. Washington, D.C. followed this same path, swapping out its entire excise tax for a new sales tax on fuel dedicated to transportation.

Ten States Raise the Gas Tax in 2013				
State Jurisdiction	Increase (cents/gallon)	Type of Increase		
California <sup>1</sup>	3.5	Automatic		
Connecticut	3.8	Legislative		
Florida <sup>2</sup>	2.0	Automatic		
Kentucky	2.4	Automatic		
Maryland <sup>3</sup>	3.5	Legislative		
Massachusetts³	3.0	Legislative		
Nebraska	1.7	Automatic		
North Carolina¹	0.1	Automatic		
Vermont <sup>4</sup>	~6.0	Legislative		
Wyoming	10.0	Legislative		
Washington, D.C. <sup>4</sup>	~1.0	Legislative		

Notes: 1) Adjusted based on price of fuel. 2) Indexed to Consumer Price Index. 3) Increase included annual indexing. 4) Increase is approximate as Washington, D.C. swapped entire 23.5-cent gas excise tax for 8.3% sales tax on fuel, while Vermont lowered their excise tax 0.8 cents while adding a 2% sales tax to fuel.

Source: http://www.eia.gov/petroleum/marketing/monthly/pdf/enote.pdf

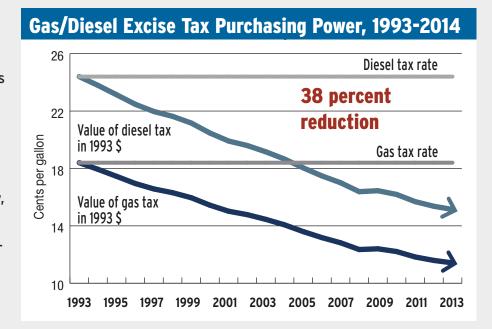
## A More Sustainable Type of Gas Tax

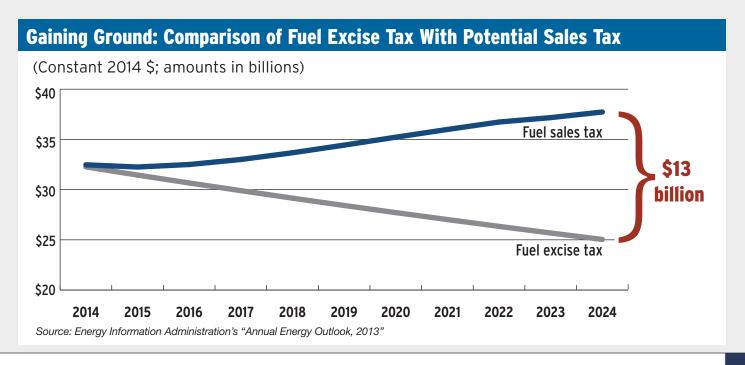
While MTC strongly supports a direct gas tax increase as proposed in H.R. 3636, an alternative is to swap the existing per-gallon excise taxes into sales taxes on fuel, initially on a revenue-neutral basis. California Senator Barbara Boxer has proposed such an approach as a way forward.

As shown by the examples of Vermont and Washington, D.C., this could be done incrementally, by swapping out just a portion of the excise tax for a

small sales tax or by eliminating the entire excise tax in exchange for a larger sales tax.

In contrast to a flat excise tax which is a dwindling revenue source over time, a sales tax can provide a growing revenue source assuming fuel price increases outpace inflation and the cost of construction. As shown below, even a swap designed to be revenue-neutral in fiscal year 2015 would generate approximately \$13 billion more per year by 2024. However, this approach will not help solve the HTF's near-term funding shortfall if done on a revenue-neutral basis.





## **Bay Area Transit Expansion Projects**

The Bay Area's two largest Capital Investment Program projects – BART Silicon Valley and San Francisco's Central Subway – are now under construction. Both projects are vivid examples of the Bay Area's ability to overmatch well above the minimum 20 percent matching funds requirement.

## **BART Silicon Valley Under Construction**

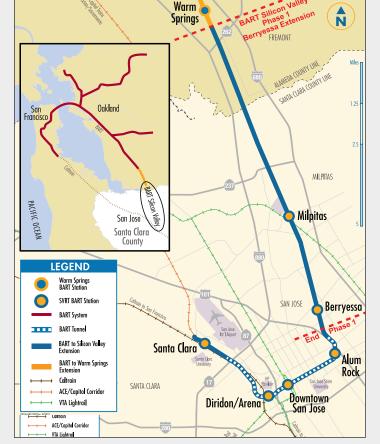
Project Funding Plans (Dollar amounts in millions)				
	Local	State	Federal	Total
BART Silicon Valley/Phase 1	\$1,179	\$251	\$900	\$2,330
San Francisco Central Subway	\$124	\$471	\$983	\$1,578
Van Ness BRT	\$30	\$2	\$93	\$125
East Bay BRT	\$56	\$44	\$78	\$178

Significant progress has been made on Phase 1 of the Santa Clara Valley Transportation Authority's (VTA) BART Silicon Valley Project, the Berryessa Extension. The line is slated to open in mid-2017, spurring great

interest in the future phase to downtown San Jose.

Planning is underway to integrate VTA bus and light rail service with BART to meet the increasing mobility demands in Silicon Valley due to the rebounding economy and job growth.

MTC urges Congress to appropriate \$150 million for VTA's BART Berryessa Extension for fiscal year 2015, consistent with the project's Full Funding Grant Agreement (FFGA).



The 10-mile BART extension will link Bay Area residents to major Silicon Valley employers.



Formwork at the site of the Berryessa Station in San Jose. (Photo: Courtesy of VTA)

## San Francisco Transit Improvements

#### **Central Subway Project**

San Francisco's Central Subway project is advancing on schedule with two tunnel boring machines (TBM) now at work under the heart of San Francisco.

In November, one of the machines, named Mom Chung, passed safely and successfully under the four existing transit tunnels below Market Street. The second TBM, named Big Alma, made the same undercrossing in February. Preparatory construction for the project's three subway stations is now in progress.

MTC urges Congress to appropriate \$150 million for the Central Subway project, consistent with the project's FFGA.

## Van Ness Avenue Bus Rapid Transit (BRT)

MTC also supports the Van Ness Avenue BRT project, which will accelerate bus service along one of San Francisco's primary north-south thoroughfares, cutting travel time by 33 percent and improving reliability by 50 percent. The project received a Record of Decision from the Federal Transit Administration (FTA) in December 2013, marking the conclusion of the environmental review process. It is currently at 30 percent design with construction scheduled to start in 2015. The project is not seeking an appropriation in fiscal year 2015.

## Complete the Funding Plan for East Bay BRT

MTC supports AC Transit's request of \$27 million in fiscal year 2015 for the 9.5-mile BRT project to fulfill the final increment of FTA Small Starts funding. The project will improve the speed and reliability of transit service — five minute headways during peak weekday periods — in one of the densest and most transit-dependent areas in the region. The project received a Record of Decision from the FTA in June 2012 and is slated to begin construction in 2015.



Construction underway in San Francisco's busy Union Square shopping district.
(Photo: Courtesy of SFMTA)



The Van Ness Avenue BRT will run parallel to several San Francisco landmarks, including City Hall and Davies Symphony Hall. (Image courtesy of SFMTA)



AC Transit's BRT project will enhance bus reliability and speed of service in Oakland and San Leandro. (Image courtesy of AC Transit)

# Plan Bay Area: Strategy for Improved Mobility and Greenhouse Gas Reductions



In July 2013, MTC and the Association of Bay Area Governments jointly adopted Plan Bay Area, an integrated transportation and land-use strategy through 2040. This is the region's first long-range plan to meet the requirements of California's landmark greenhouse gas reduction law — Senate Bill 375 (Steinberg, 2008) — which calls on each of the state's 18 metropolitan areas to develop a plan to reduce greenhouse gas emissions from cars and light trucks.

More than three years in the making, Plan Bay Area is the successor to Transportation 2035, the long-range plan adopted by MTC in 2009. Projecting a healthy regional economy, the Plan anticipates that the Bay Area's population will grow from about 7 million today to some 9 million by 2040. The plan sets forth an investment strategy for \$292 billion in funding

that the region anticipates through 2040.

## "Top 10" Plan Bay Area Investments

Rank	Project	Investment (YOE* millions \$)
1	BART to Warm Springs, San Jose and Santa Clara	\$8,341
2	Bay Area Regional Express Lane Network	\$6,057
3	Transbay Transit Center Caltrain/High Speed Rail Downtown Extension (Phases 1 and 2)	\$4,185
4	Integrated Freeway Performance Initiative (FPI)	\$2,729
5	Presidio Parkway/Doyle Drive US 101 seismic replacement	\$2,053
6	Caltrain Electrification and Operational/Service Frequency Improvements	\$1,843
7	SFMTA Central Subway: King Street to Chinatown	\$1,578
8	Valley Transportation Authority (VTA) Express Lane Network	\$1,458
9	San Jose International Airport Connector	\$753
10	Hunters Point and Candlestick Point: New Local Roa	ads \$722

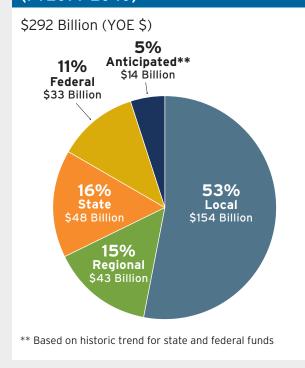
## A Focused-Growth Approach

The Plan coordinates future land uses with long-term transportation investments—without compromising local control of land-use decisions.

City and county governments have identified Priority Development Areas (PDAs) and Priority Conservation Areas (PCAs) for the land-use portion of Plan Bay Area.

The Plan lays out a strategy for meeting 80 percent of the

## **Plan Bay Area Revenue Forecast** (FY2014-2040)





region's future housing needs in PDAs.

Originally established to address housing needs in infill communities, PDAs have been broadened to advance job growth as well. Priority Conservation Areas comprise over 100 regionally significant open spaces facing near-term development pressure. (Photo: Courtesy of the Ridge Trail)

By 2040 the San Francisco Bay Area is projected to add 2.1 million people.

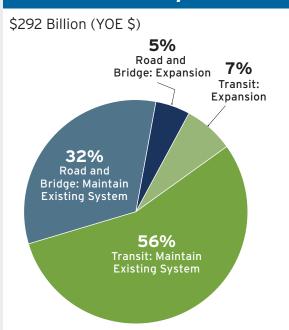
PCAs, by contrast, are regionally significant open spaces for which there exists broad consensus for long-term protection. PDAs and PCAs complement one another because promoting development within PDAs takes development pressure off the region's open space and agricultural lands.



Projected growth shows that the Bay Area will continue to be California's second-largest population and economic center. (Photo: Noah Berger)

# Achieving a State of Good Repair Is Priority #1 in Plan Bay Area

## **Total Investments by Function**



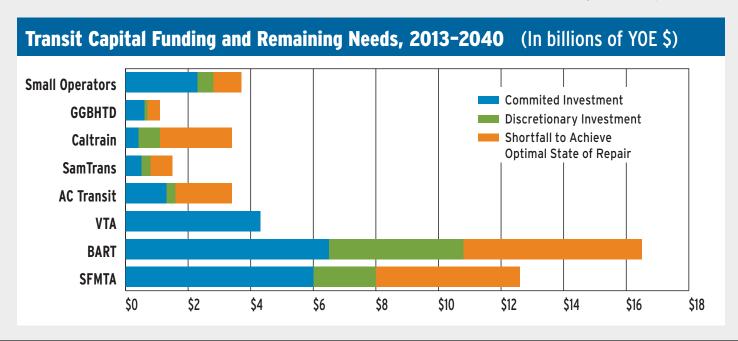
A well maintained multimodal transportation system is fundamental to the compact land use pattern assumed in Plan Bay Area. To that end, the plan directs 88 percent of available funds to keeping the current transportation system in working order, with 56 percent dedicated to maintaining and operating our transit systems and 32 percent dedicated to maintaining our roadway and bridge network.

While the plan fully funds current transit service levels over the 28-year period, there remains a \$17 billion shortfall to achieve an optimal state of good repair for our transit systems, as shown below.

## Transit Core Capacity Challenge Program

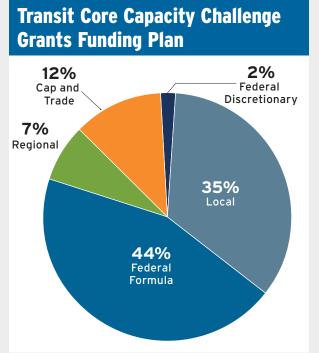
In response to this transit capital funding shortfall, in December 2013 the Commission established a \$7.5 billion Transit Core Capacity Challenge Grant Program focused

on the capital needs of the region's three largest transit operators — AC Transit, BART and San Francisco MTA, which carry over 80 percent of



the region's passengers as well as more than three-quarters of the minority and low-income passengers. The plan dedicates \$4.9 billion towards fleet replacement, helping to ensure the reliability of transit service into the future. This program:

 Leverages federal formula funds with regional and local contributions, including future state Cap and Trade revenue from California's nascent carbon trading program.

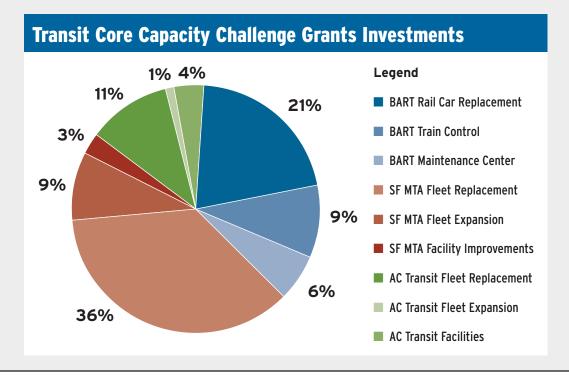


- Accelerates and solidifies funding for fleet replace
  - ment projects and identifies new funding for key enhancement projects.
- Requires that participating operators meet
   performance objectives
   related to improving the
   efficiency of their
   operations.



BART's cars have been in service for over 40 years and are nearing the end of their useful lives. (Photo: Stanley Fong)

Plan Bay Area's infill and transit-oriented growth strategy depends on a wellmaintained and robust transit system.



# How Are We Investing Our Flexible Highway Formula Funds?



Changeable message signs help drivers gauge the amount of time a trip will take. (Photo: Peter Beeler, MTC)

While federal dollars account for just 11 percent of Plan Bay Area's revenue forecast, and federal transit funds comprise two-thirds of this federal funding, federal highway funds remain a vital part of the Bay Area's transportation investment strategy due to their unique flexibility.

The federal Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Improvement Program (CMAQ) comprise the largest source of the region's discretionary funds. Their broad project eligibility make them well-suited to the diverse mobility needs of a region encompassing nine counties, 101 cities and an area larger than the states of Connecticut and Delaware combined.

## STP/CMAQ Funding for San Francisco Bay Area FY 2013-2016

(Millions \$, rounded)

•	.,
Program Categories	4-Year Funding
Regional Programs	\$475
Planning	\$7
Regional Operations (Clipper®, 511®, Freeway Service R	Patrol) \$95
Freeway Performance Initiative	\$96
Pavement Technical Assistance Program	\$7
Priority Development Area Planning Program	\$40
Climate Initiatives	\$20
Safe Routes to School	\$20
Transit Capital Rehabilitation	\$150
Transit Performance Initiative	\$30
Priority Conservation Area North Bay Pilot	\$10
OneBayArea Grant for Counties	\$320
TOTAL	\$795

The current four-year cycle of federal highway funding includes \$795 million of STP/CMAQ investment for Bay Area projects.

# One Bay Area Grant Program Helps Implement State Climate Law

The largest portion of the current STP/CMAQ funding plan is a \$320 million commitment to the innovative One Bay Area Grant (OBAG) program, through which the Commission is teaming with the region's nine county congestion management agencies to reward and incentivize infill development, a key strategy to help implement California's landmark climate law (SB 375).

Thanks to the flexibility of the federal funds, cities and counties can use OBAG

grants for a wide variety of investments from local streets and road repairs to bicycle and pedestrian improvements, station area planning and more.

#### Rewarding Infill Development

Two of the key objectives of the OBAG program are to:

- Reward jurisdictions that produce housing near transit; and
- Target investments in priority development areas (PDAs) areas identified by city or county governments as appropriate for developing more housing in a pedestrian- and bicycle-friendly environment with robust transit service.

The OBAG funding formula is designed to reward those counties that take on more of the region's population growth, providing a direct connection between how much housing a community builds and how much transportation funding it receives. As shown above, the formula is based 50 percent on a county's share of the population, 25 percent on a county's share of planned new housing units and 25 percent on its share of actual housing production.

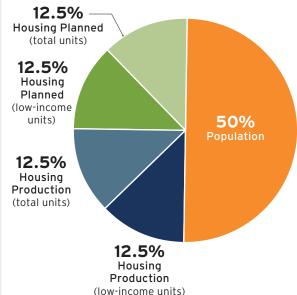
In the current round of funding, 82 percent of selected OBAG projects regionwide are located within or close to PDAs, consistent with the Program's goal of rewarding jurisdictions that produce housing near transit.

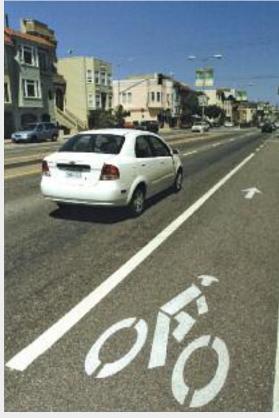
## Federal Funds Support Regional Programs

MTC directed \$475 million to a range of regional programs including:

- Transit vehicle rehabilitation;
- Freeway Performance Initiatives to use technologies like ramp-metering signals and traffic detection loops to improve the efficiency of Bay Area freeways;
- Transit Performance Initiatives to improve transit operators' efficiency; and
- MTC-managed services such as the Clipper® transit-fare payment card, FasTrak® electronic tolling system, 511 traveler information service, and Freeway Service Patrol.

## **OBAG Funding Distribution Formula**12.5%





Local agencies are using federal funds to develop "complete streets" that accommodate all users. (Photo: Noah Berger)

## **Caltrain Modernization Takes Off**

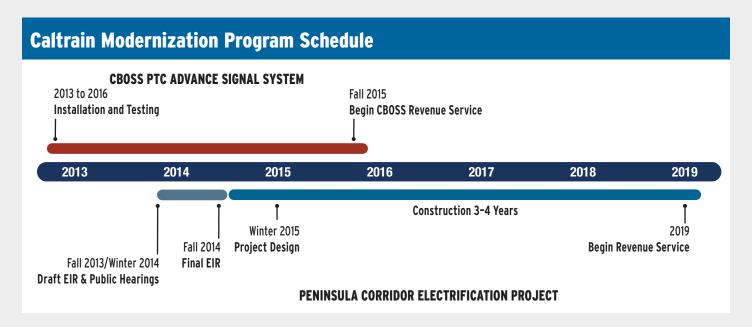
Caltrain Modernization
will support the
Bay Area's growing
economy by serving
existing communities
with efficient, clean,
reliable and safe
train service.

In 2012, nine local, regional and state government entities approved an agreement to invest \$1.5 billion in the Caltrain Modernization Program. This plan will immediately upgrade Caltrain service and prepare the corridor to eventually accommodate statewide high-speed rail service on a primarily two-track blended rail system between San Francisco and San Jose.

## Meeting Federal Safety Requirements

The first step is the installation of a \$231 million Communications Based Overlay Signal System Positive Train Control (CBOSS PTC) that will meet federal standards by the 2015 deadline. The new system will:

- Equip the corridor with federally mandated safety and service improvement technology to increase system capacity and accommodate future rail systems including commuter, freight and, in the future, high-speed rail.
- Eliminate the risk of train-to-train collisions, better manage train speeds, and provide additional safety for railroad workers on the tracks.
- Increase reliability and operating performance through better train schedule management and improved grade crossing performance.



#### **Electrification on Track**

A key component of the Caltrain Modernization Program is the Peninsula Corridor Electrification project that will convert Caltrain from traditional diesel-powered service to modern Electric Multiple Unit (EMU) trains. This project will:

Improve train performance. Improved acceleration and deceleration will allow for more frequent service and/or shorter trip times. Electrification also allows increased peak service

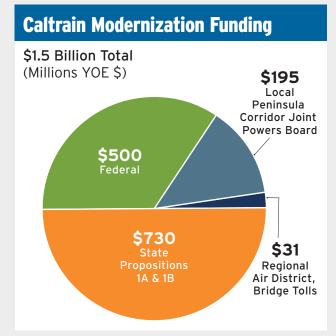


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With electrification, every Caltrain trip will be faster at every stop. (Image courtesy of Caltrain)

levels from the current five trains to six trains per peak hour per direction on existing tracks.

- Provide high-speed rail (HSR) compatible electrical infrastructure, setting the stage for future blended commuter and high-speed rail service.
- Improve the financial sustainability of Caltrain. Increased ridership will increase fare revenues, and conversion from diesel to electricity will reduce fuel costs, improving the long-term financial health of Caltrain.
- Reduce environmental impact by reducing engine noise. Noise from electrified train engines is measurably less than diesel trains.
- Reduce environmental impact by improving regional air quality and reducing greenhouse gas emissions. Electrified operations will result in substantial reductions in corridor air pollution emissions when compared with diesel locomotives, even when the indirect emissions from electrical power generation are included in the analysis.



## Bay Area Innovation: Climate Initiatives Program



Bay Area BikeShare received its initial funding from the Climate Initiatives Program. (Photo: Noah Berger)

Thanks to a legacy of leaders with the vision to look generations into the future, California has been at the forefront of efforts to address climate change. MTC's Climate Initiatives Program joins the focused landuse strategy of Plan Bay Area as a cornerstone of the Commission's efforts to meet the aggressive greenhouse gas emissions targets set by the state with the passage of Senate Bill 375 in 2008.

At the cutting edge of the four-year-old Climate Initiatives effort is an Innovative Grants program to seed breakthrough approaches for reducing emissions. The \$33 million first round of commitments funded a number of different efforts, including the following:

- Pilot programs for the Bay Area Bike Share service in San Francisco,
   San Mateo and Santa Clara counties
- Dynamic ridesharing in Sonoma, Marin and Contra Costa counties
- A dynamic pricing program for parking in Berkeley
- A shore power initiative at the Port of Oakland that allows ocean-going ships to turn off their diesel engines while loading or unloading cargo

## Summary of Climate Initiatives Program (FY2014-2040)

Policy Initiative (from most to least cost-effective)	Cost (in millions of YOE \$)	Per Capita CO <sub>2</sub> Emissions Reductions in 2035
Commuter Benefit Ordinance	\$0	-0.3%
Car Sharing	\$13	-2.6%
Vanpool Incentives	\$6	-0.4%
Clean Vehicles Feebate Program	\$25	-0.7%
Smart Driving Strategy	\$160	-1.5%
Vehicle Buy-Back & Plug-in or Electric Vehicle Purchase Incentive	\$120	-0.5%
Regional Electric Vehicle Charger Network	\$80	-0.3%
Climate Initiatives Innovative Grants	\$226	TBD
TOTAL	\$630	-6.3%

- Electric vehicle pilot programs for government, car share, and taxi fleets throughout the region
- Demonstrating "cold-in-place recycling" technology – which eliminates the need to transport hot asphalt for pavement rehabilitation projects – in Napa and Sonoma counties

Plan Bay Area sets aside \$226 million over 28 years to expand the most successful strategies identified in the Innovative Grants program.

Other elements of Plan Bay Area's Climate Initiatives Program include investments to:

- Expand car-sharing services
- Reduce costs for vanpool participants
- Promote the sale of more electric vehicles, plug-in hybrids and other fuel-efficient vehicles
- Retire older gas guzzlers from the regional fleet
- Invest in a regional charger network for electric vehicles
- Team with the Bay Area Air Quality Management District to adopt a regional commuter benefit ordinance as authorized by state Senate Bill 1339 (Yee, 2012)

## **Climate Adaptation**

In addition to funding programs that reduce greenhouse gas emissions, MTC is also turning its attention to rising sea levels and potential threats to the Bay Area's transportation network. Teaming with the Bay Conservation and Development Commission, as well as the California Department of Transportation and other transportation agencies, MTC is exploring the best ways to adapt to our changing climate.

Thanks to several grants from the Federal Highway Administration totaling \$600,000, MTC and its partners are preparing a report for release later this year that will focus on the impacts of sea-level rise on several areas in Alameda County: the Emeryville/Bay Bridge Touchdown, the Coliseum BART station corridor and the City of Hayward. These areas were selected for their diversity of shoreline development and transportation assets, including residential areas, industrial facilities, railroads, highways, bridges, BART stations, the Oakland and Hayward airports, the Port of Oakland, parks and ecologically sensitive areas.

Plan Bay
Area
exceeds
the 15 percent per
capita CO<sub>2</sub> emission
reduction target set
by the California Air
Resources Board.
By 2040, the typical
Bay Area resident is
expected to reduce his
or her transportation
CO<sub>2</sub> emissions by
18 percent compared
to 2005.



The Climate Initiatives Program has funded a regional electric vehicle charger network.
(Photo: Noah Berger)

## **Technology Boosts Freeway Efficiency**



The Freeway Service Patrol responds to unplanned freeway incidents. (Photo: Noah Berger)

## Freeway Performance Initiative Creates a Wired Roadway Network

With today's mature system of roadways and constrained funding, it is no longer possible to build our way out of congestion. In the San Francisco Bay Area, we are responding to traffic congestion by deploying technology to squeeze the maximum performance out of our limited roadways.

Plan Bay Area invests \$2.7 billion in the Freeway Performance Initiative (FPI), which consists of cost-effective technology upgrades that dramatically improve the speed and reliability of roadways through various methods of detecting and, more importantly, responding to roadway conditions in real time.

One of the most effective aspects of the FPI is the Freeway Service Patrol, a system that covers 552 miles of Bay Area freeways with 78 tow trucks that respond to an average of 130,000 incidents per year. Ramp meters and changeable message signs are also a key element. Over the last year, MTC has led an effort to repair much of this intelligent transportation system equipment that had fallen into disrepair or had never been fully installed by the California Department of Transportation in the first place.

Program Elements	Description & Benefits
Ramp Metering	Activate 300 additional ramp-metering locations on freeways
Intelligent Transportation Systems Infrastructure	Install and maintain traffic cameras, changeable message signs, speed sensors and related infrastructure to improve travel-time reliability
Arterial Operations Management	Implement traffic signal coordination, transit-priority timing and incident/emergency clearance plans on regionally significant routes
Incident and Emergency Management	Maintain the Freeway Service Patrol and Call Box programs, and enhance transportation agencies' and first responders' capabilities to clear traffic incidents and respond to major emergencies through integrated corridor management
Traveler Information/511	Collect, consolidate and distribute accurate regional traffic, transit and parking data for trip-planning and real-time traveler information
Operations & Maintenance	Maintain existing and future arterial and freeway technology improvements

## Regional Express Lane Network Under Development

Plan Bay Area envisions that by 2040, the region's freeways will include approximately 550 miles of express lanes that will offer a congestion-free commute.

MTC, along with our partner agencies in Santa Clara and Alameda counties, is developing an extensive express lane network in Alameda, Contra Costa, Santa Clara and Solano counties. MTC is responsible for developing and operating 270 miles of this network, while local agencies are developing the remaining 280 miles. Drivers will have a seamless experience with the same signage and technology throughout the system. As shown below,

much of the system will be built by converting existing HOV lanes into express lanes, where carpools will continue to ride for free.

The goals of the Regional Express Lane system are:

**Connectivity** – Use express lane toll revenue to close gaps within the HOV lane system and to increase traveltime savings for carpools and buses.

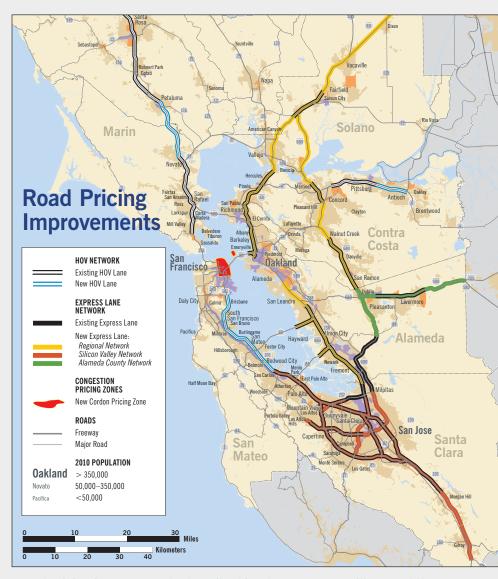
Efficiency — Optimize throughput on freeway corridors to better meet current and future traffic demands, using excess capacity in the existing HOV system to reduce travel time for all travelers.

**Reliability** – Provide a reliable, congestion-free transportation option.

Conversions of existing HOV lanes will be built first. Revenues from those early express lanes will be used first to bond-finance the gap closures and, eventually, the extensions.



For paying customers, overhead electronic pricing signs will display current toll rates. (Photo: Noah Berger)



Road pricing improvements described in Plan Bay Area will expand the region's express lane network greatly by 2040.

# MTC Operations Programs Keep Bay Area on the Move



33,481,112
Amount in dollars of Clipper-generated fare revenue collected in December 2013



17,058,699 Clipper boardings on Bay Area transit systems in December 2013



506 Number of retail locations selling Clipper cards, including MTC's transit-information kiosk at the Embarcadero BART/Muni station in downtown San Francisco (Photo: Peter Beeler, MTC)

## Clipper® Means Smooth Sailing for Transit Riders

Clipper®, the all-in-one regional transit fare payment card launched by MTC in 2010, maintained its steady growth in 2013 as more and more riders embrace the convenience and security of the card. By January of this year, Bay Area residents and visitors alike were using Clipper to pay

some 700,000 transit fares each weekday on San Francisco MTA, BART, AC Transit, VTA, Caltrain, SamTrans, Golden Gate Transit, and the Golden Gate Ferry and San Francisco Bay Ferry systems.

Named for the sleek clipper ships that provided the fastest trips to Gold Rush-era San Francisco, the Between 2012 and 2013, the number of Bay Area transit riders paying their fare using Clipper grew 17%.

Clipper card streamlines Bay Area transit by simplifying fare transactions. Commuters no longer need to carry correct change or buy multiple tickets for different transit systems. Passengers can obtain Clipper cards online or at more than 500 retail locations, add value to their cards automatically from a bank account or credit card, and access automated online service 24/7.

## Clipper Expansion Planned for 2014

Today, Clipper serves nine transit operators which collectively carry 95 percent of the Bay Area's transit riders. In 2014, MTC is turning our attention to serving more of the smaller operators and anticipates expanding to the following operators before the end of the year: Napa VINE, Solano County Transit (SolTrans), Fairfield and Suisun Transit (FAST), Vacaville City Coach, Rio Vista Delta Breeze and Marin Transit.

## 511: The Go-To Source for Getting There

MTC's award-winning traveler information system racked up new usage records in 2013 as Bay Area residents increasingly turned to 511 for help navigating a tumultuous year that included two four-day BART strikes, a five-day closure of the Bay Bridge, and weeks of America's Cup racing that attracted thousands of visitors from throughout the world to the San Francisco waterfront.

The 511 phone system registered its busiest month ever in October 2013, during the second of the year's BART strikes, when more than 773,000 customers called for help. Usage of the 511.org Web service during the BART strikes neared record levels as well, with the number of unique visitors surpassed only by those at the time of an emergency Bay Bridge closure in October 2009.



(Photo: Noah Berger)

## More Bay Area Drivers Get on FasTrak®

Driven in part by the Golden Gate Bridge's March 2013 transition to all-electronic tolling, the number of customers enrolled in MTC's FasTrak electronic toll collection program shot up from just under 1.2 million in January 2013 to nearly 1.4 million at year-end.

More than 70 percent of all motorists crossing stateowned toll bridges during peak hours now pay their tolls with FasTrak. FasTrak can be used to pay tolls in every lane of the region's toll bridges, as well as in the

FasTrak® Share on State-Own	ned Bridges
Bridge	Percent Share
Antioch	56%
Benicia-Martinez	67%
Carquinez	62%
Dumbarton	69%
Richmond-San Rafael	72%
San Francisco-Oakland Bay Bridge	74%
San Mateo-Hayward	71%

SF Bay

on Strike.

Monday, 10/21: BART Unions Remain

Express Lanes on southbound Interstate 680 in Alameda and Santa Clara counties, and on the Interstate 880/State Route 237 Express Lane in Santa Clara County.

# New East Span Marks Completion of Toll Bridge Seismic Retrofit Program

The \$9 billion state Toll Bridge Seismic Retrofit Program (TBSRP) — which included all seven of the Bay Area's state-owned toll bridges along with the San Diego-Coronado Bridge and the Vincent Thomas Bridge in Los Angeles — at long last achieved seismic safety in September 2013 when the \$6.4 billion replacement for the East Span of the San Francisco-Oakland Bay Bridge opened to traffic on Labor Day.



The New East Span of the San Francisco-Oakland Bay Bridge opened on Labor Day 2013. (Photo: Noah Berger)

The opening of the new East Span truly was a landmark event, marking the culmination of a decades-long effort to deliver seismic safety on nine of the state's most vital crossings, and demonstrating the benefits of a project oversight structure.

## Oversight Committee Kept Project on Track

While the East Span was burdened with delay and cost overruns for years, once the Toll Bridge Program Oversight Committee (TBPOC) was established, that committee managed to keep the project on schedule and budget. The TBPOC is composed of the leadership of the Bay Area Toll Authority, the California Transportation Commission and the California Department of Transportation (Caltrans).

AB 144 (Hancock, 2005), which established the TBPOC, set a September 2013 completion target for the new East Span and an \$8.7 billion budget for the overall TBSRP. In 2010, the Antioch and Dumbarton bridges were added to the program through passage of AB 1175 (Torlakson), authorizing an additional \$1 toll increase. The \$74 million Antioch Bridge retrofit was completed in April 2012, while the \$114 million Dumbarton project concluded in February 2013, both on schedule and under budget.

## Surprise Setbacks, Innovative Response

Among the biggest challenges encountered on the Bay Bridge East Span replacement project was the March 2013 discovery – just six months before the scheduled opening date – that one-third of the high-strength steel anchor rods used to secure critical seismic safety devices known as shear keys had failed. Caltrans, design engineers and bridge contractors teamed up to design, fabricate and install a unique steel cable-and-saddle system to substitute for the failed rods and connect the shear keys to the pier with no loss of the original design's seismic performance.

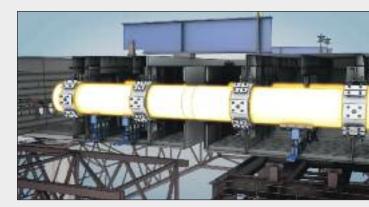
## A Leading-Edge Landmark

Various seismic safety innovations were incorporated in the new Bay Bridge East Span. The 1.2-mile Skyway section, for instance, is supported by 28 piers with 365-ton steel piles driven at an angle more than 300 feet below the water and through the deep Bay mud to anchor into stable soils. Much of the original East Span, by contrast, is supported by 70-foot-long Douglas fir piles, which extend only into the mud.

Other seismic innovations on the new span include the placement of 20 steel hinge-pipe beams between bridge segments that minimize damage to the bridge's superstructure in the event of an earthquake. These 60-footlong devices are designed to move within their sleeves during expansion or contraction of the road decks, and to absorb the energy of an earthquake through "fuse" sections that can then be quickly removed and replaced. These and other engineering breakthroughs make the new East Span among the most seismically advanced structures in the world.



The TBSRP included both the new Bay Bridge East Span and a retrofit of the West Span. (Photo: ©Barrie Rokeach 2014, www.rokeachphoto.com)



Hinge pipe beams are found throughout the new span and function like a replaceable fuse. (Image courtesy of Caltrans)

## **Bay Area Partnership**

The Bay Area Partnership is a coalition of the top staff of various regional transportation agencies and environmental protection agencies. The Partnership provides a forum for discussion of key transportation issues facing the region in order to improve the overall efficiency and operation of the Bay Area's transportation network.

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#### Front & Back Covers

State Route 24 Caldecott Tunnel Fourth Bore – Karl Nielsen

#### **Text Pages**

Page 4 (top to bottom, left to right): New East Span/SAS – Noah Berger; New East Span bike path opening – Karl Nielsen; New East Span first drive – Karl Nielsen Page 5 (top to bottom. left to right): Caldecott Tunnel Fourth Bore inaugural drive – Karl Nielsen; Caldecott Tunnel Fourth Bore ribbon cutting – Karl Nielsen; Devil's Slide Tunnel, Hwy 1 – Bill Hall, Caltrans; Devil's Slide Tunnel, Pacifica – John Huseby, Caltrans

Page 30 (top to bottom)

Clipper® card tag at pay-gate; Patron tagging Clipper® card on transit vehicle – MTC Archives





