

Planning and Partnering for a New Generation

Annual Report to Congress

FEBRUARY 2020



ASSOCIATION OF BAY AREA GOVERNMENTS
METROPOLITAN TRANSPORTATION COMMISSION



February 2020

To Our Federal Representatives:

America's infrastructure needs your leadership. While the Bay Area has led in generating local and regional funding for transportation improvements, as well as affordable housing, we continue to rely on a strong federal partnership.

The Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) urge you to be bold as you debate reauthorizing the Fixing America's Surface Transportation Act. A long-term surface transportation bill that modernizes and upgrades our nation's highways, trains, buses, ferries and ports could further grow the economy, reduce congestion, and help prepare Bay Area communities to be resilient in the face of a changing climate. It can also enhance mobility by encouraging new transportation technologies that are changing the way people and goods move. We also urge Congress to reinvest in the nation's housing programs to help address the housing affordability challenges facing the Bay Area and metro regions across the country.

MTC and ABAG, the San Francisco Bay Area's transportation and land use planning agencies, look forward to engaging with you in a conversation about America's infrastructure. The first portion of our report seeks to further that dialogue, while the balance provides an update on our federal appropriations priorities and the region's ongoing efforts to improve mobility and address the Bay Area's chronic housing shortage.

Thank you for your steadfast leadership advocating for the Bay Area's interests in Congress. We look forward to working with you and your staff in 2020. If we can be of assistance on issues related to material in this report or any other matter, please contact Randy Rentschler, Director of Legislation and Public Affairs at rrentschler@bayareametro.gov or 415-778-6780, or Tom Bulger, MTC's Washington representative, at 202-255-3526.

Sincerely,

Scott Haggerty
Chair
Metropolitan Transportation Commission

Jesse Arreguin
President
Association of Bay Area Governments



ASSOCIATION OF BAY AREA GOVERNMENTS
METROPOLITAN TRANSPORTATION COMMISSION

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San Francisco Bay Area: Transportation and Land Uses

Urbanized Area
Publicly Owned Parks and Open Space
Priority Development Area (PDA) as of 2019
Priority Conservation Area (PCA)

ROADS
Freeway
Major Road

RAIL SYSTEM
Altamont Corridor Express
Amtrak
BART
Caltrain
SMART
Light Rail (Muni & VTA)
Cable Car (Muni)

FERRY
WETA Ferry Route

Oakland
2010 POPULATION
> 350,000
Novato 50,000–350,000
Pacifica <50,000



MTC Graphics, pb — 2.7.2020

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FAST Act Reauthorization Principles

The Fixing America's Surface Transportation (FAST) Act has provided five years of funding certainty; increased federal investment to advance national goals related to safety, economic growth, congestion relief and climate change; and preserved flexibility to address the Bay Area's unique mobility challenges.

We urge Congress to preserve the current program structure and to build on the FAST Act's progress as follows:

- Raise Revenues & Grow Existing Programs:**
 Congress must raise revenues to restore Highway Trust Fund solvency and to increase federal investment in a long-term bill. Congress should expand the core surface transportation



NOAH BERGER

Federal dollars support road, transit and bicycle/pedestrian safety projects in the Bay Area.

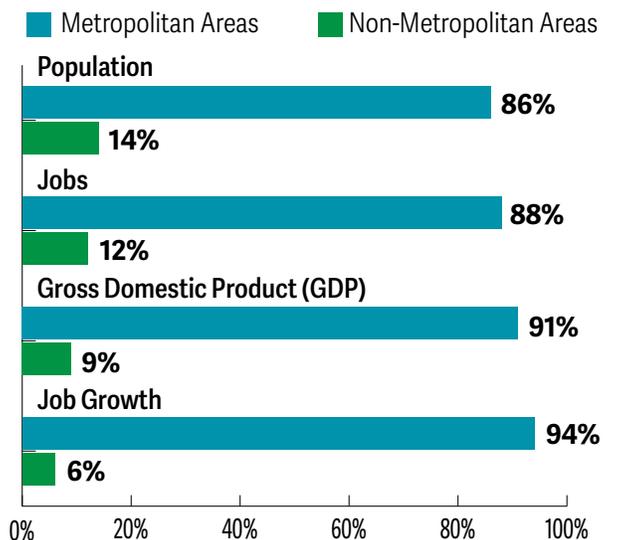
programs, especially those that have proven effective in directing much-needed resources to our nation's population and job centers.

Grow Existing Programs: Invest in Metros

Metro areas drive the U.S. economy, contain much of the nation's critical infrastructure, and are the test beds for new mobility technologies that are transforming how people and goods travel. With a strong federal partner, metro areas will be primed to meet the myriad mobility and related challenges of the future, be they technical, environmental or societal in nature. Congress should:

- Grow the Surface Transportation Block Grant (STP) program and restore the percentage directly sub-located to metro areas to the pre-2012 level of 62.5 percent.
- Create a new multimodal resiliency program that provides formula funding directly to metros, as described on p. 4-5.

United States Metro Economies (% Share of 2018 National Economic Indicators)



Source: United States Conference of Mayors (2019)

■ **FAST Act Updates:**

Within the FAST Act framework, grow federal support for transit and regional mobility solutions, revise transit programs to reward Bay Area best practices, and expedite project delivery without harming the environment.

■ **21st Century Challenges and Opportunities:**

Establish the federal government as a strong partner in state and regional efforts to make transportation networks responsive to the changing climate and to transformative technologies. The next transportation bill should direct significant new resources to metropolitan areas to address 21st century challenges. (See resiliency recommendations on p. 4-5 and future mobility requests on p. 19)

FAST Act Updates: A Closer Look

- Grow all transit formula programs and increase investment in metros, as described in the box on opposite page.
- Incentivize aggressive climate change solutions by creating a set-aside within the Section 5337 Low-No Emissions Vehicle Program to reward transit agencies committed to transitioning to zero-emission fleets.
- Reverse the Federal Transit Administration (FTA) policy of penalizing regions that convert their high-occupancy vehicle lanes to express lanes (see p. 20-21).
- Authorize regional advance mitigation, a strategy that accelerates project delivery by integrating conservation into project development early and on a regional scale, resulting in better environmental outcomes and lower costs.



KARL NIELSEN

Preliminary cost estimates for just one regional adaptation priority — the 20-mile State Route 37 corridor (pictured above) — are upwards of \$4 billion.



NADEZHDA1906 - STOCK.ADOBE.COM



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A Stronger, Smarter, More Resilient Future

From State Route 37 in the North Bay to U.S. 101 to the transcontinental railroad, sea level rise threatens much of the Bay Area's transportation infrastructure. Congress should provide new, dedicated resiliency funds and update FAST Act programs to account for climate change.

A New Commitment to Resiliency

MTC recommends Congress create a new resiliency program to upgrade our transportation networks in the face of a changing climate. Fifty percent of the funding should flow via formula to large metro areas — our nation's population and job centers — which house so many of the nation's at-risk assets.

Discretionary grant funding (the remaining 50 percent) should support states, local governments, transit agencies and ports to upgrade resiliency elements for freight corridors, interregional rail assets, and other vital infrastructure.

To be most effective, the program should be mode-neutral and have broad eligibility so states and regions can prioritize the highway, bridge, bus, rail or other resiliency upgrades most criti-

What Should Be Eligible?

Examples of gray and green infrastructure:

- Resiliency planning and vulnerability assessments
- Roadway and rail elevation and realignment
- Asset hardening (ex: widening culverts, installing flood gates, seismic retrofits)
- Levees, including living levees
- Tide gates
- Nearshore reefs, beaches and other shoreline habitats
- Sea walls, rip rap and other hard engineering for coast and river bank protection
- Marsh restoration and other system resilience improvements with a nexus to protecting transportation assets

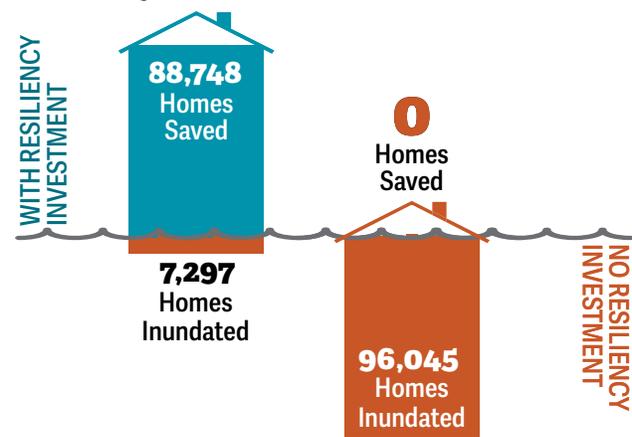
cal to keeping communities connected and the economy on the move. This new program should include flexibility to prioritize investments that protect both transportation assets and adjacent communities.

Flexibility to Invest Smarter

Congress should also update the FAST Act performance-based programs so states and regions can incorporate future risks, such as sea-level rise and extreme weather, into the design of projects and programs geared toward achieving state of good repair and other long-standing national goals.

Both gray and green infrastructure should be eligible under the core formula programs if it hardens an eligible transportation asset. Building stronger on the front end delivers dividends down the road — every \$1 spent on disaster prevention in transportation saves \$4, according to a 2018 National Institute of Building Sciences report.

Bay Area Homes Saved by Resiliency Investments

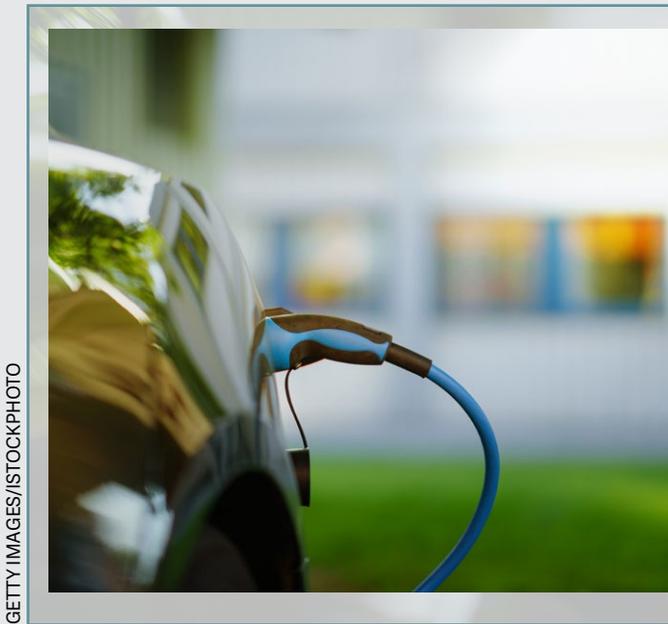


Source: MTC

MTC and ABAG estimate a \$20 billion cost to adapt the Bay Area's infrastructure and its communities for three feet of sea level inundation — a conservative estimate of what we need through 2050. Strategically placed gray and green infrastructure can protect adjacent homes, businesses and local roads as well as critical transportation assets.

Combating Climate Change

California is an international leader in combating climate change, with a successful Cap and Trade program and an aggressive clean vehicle mandate that together have helped the state meet its goal of reducing greenhouse gas emissions (GHG) to 1990 levels by 2020. To achieve an even more ambitious target of reducing GHG emissions to 40 percent below 1990 levels by 2030, we need the Trump Administration to support California's GHG reduction policies and to work with Congress to take bold action to combat the effects of climate change.



GETTY IMAGES/ISTOCKPHOTO

Federal Transportation Funds at Work

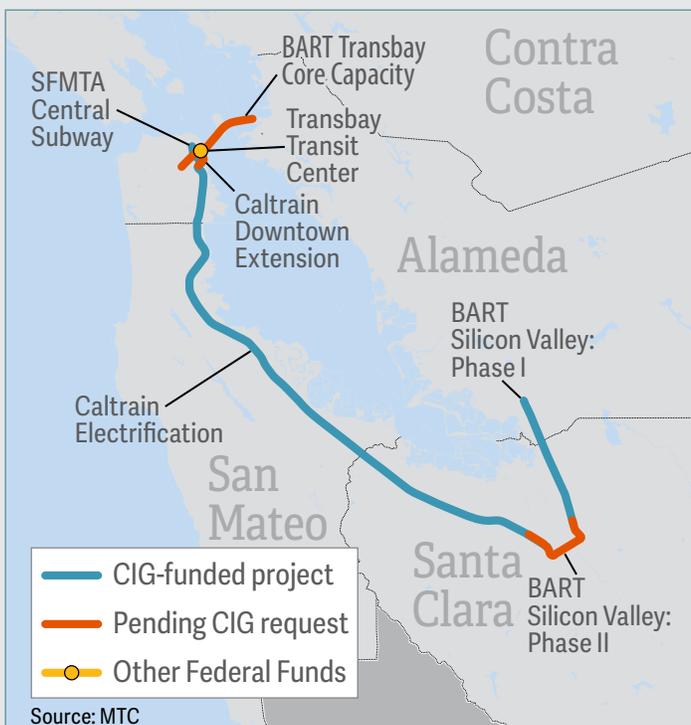
MTC urges Congress to protect the progress made in the FAST Act — in fiscal year 2021 and in the next transportation bill — to provide long-term certainty and preserve flexibility for the core highway and transit programs that help keep the Bay Area moving.

Investing in Transit

The FAST Act provided \$450 million per year in federal transit formula funds to help maintain the Bay Area’s aging transit capital infrastructure. Key projects benefiting from these dollars include BART rail car replacement, Caltrain electric railcars, and SFMTA and AC Transit fleet replacement and expansion.

In addition, seven of the Bay Area’s 10 largest planned transportation projects are counting on

Major Federally Funded Capital Projects



Federal Transit Programs

California and Bay Area’s Share of National Total

Program	CA	Bay Area
5337 State of Good Repair	16.1%	8.0%
5307 Urbanized Area	16.1%	4.4%
5339 Bus Formula	14.9%	2.9%
5339 Bus Discretionary	8.0%	1.5%
5339 Low-No Emissions Vehicles	2.7%	0.0%

Source: MTC

billions of dollars in federal grants, primarily from the Capital Investment Grant (CIG) program, as shown in the map below.

Flexible Highway Funds

MTC invests around \$180 million in flexible Surface Transportation Block Grant (STP) and Congestion Mitigation and Air Quality Improvement (CMAQ) program funds each year to advance Bay Area transportation priorities that improve safety, spur economic development, and help the region meet climate change and air quality improvement goals.

Flexible highway funding, which MTC invests through the One Bay Area Grant program (described at right) not only benefits Bay Area residents with improved mobility, the funds are also used to incentivize new housing production in the Bay Area, which is critically needed as we grapple with the ongoing housing shortage.

Bay Area Goods Movement

MTC was a strong advocate for the national freight formula program created by the FAST Act. California pools the state’s share — \$535 million



MTC ARCHIVES

Cargo ship under the Golden Gate Bridge.

in fiscal years 2016-2020 — with state resources to fund trade corridor enhancement projects, including a major grade separation and intelligent transportation system upgrade to relieve bottlenecks and expand freight rail connections to the Port of Oakland, the nation’s fifth-busiest container port.

Despite this support of the national freight formula, the Bay Area has yet to receive a single

discretionary INFRA grant, even though the Bay Area is home to the Port of Oakland, several cargo airports and specialized seaports, major rail lines and terminals, and highways that carry some of the highest truck volumes in California. We urge Congress to ensure future funds are directed toward regionally and nationally significant projects that make progress towards national freight goals.



MTC ARCHIVES

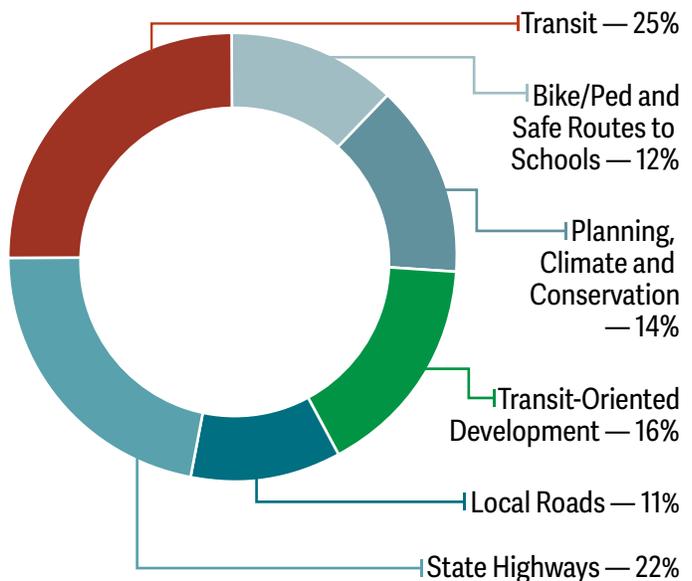
Housing Production Incentive

Since 1997, the Bay Area has leveraged federal highway funds to increase housing supply in transit-accessible neighborhoods.

Currently, MTC rewards cities and counties that approve new housing construction and adopt housing-supportive local plans with additional federal transportation funds, awarded through the One Bay Area Grant program (OBAG).

Flexible Highway Funds in the Bay Area

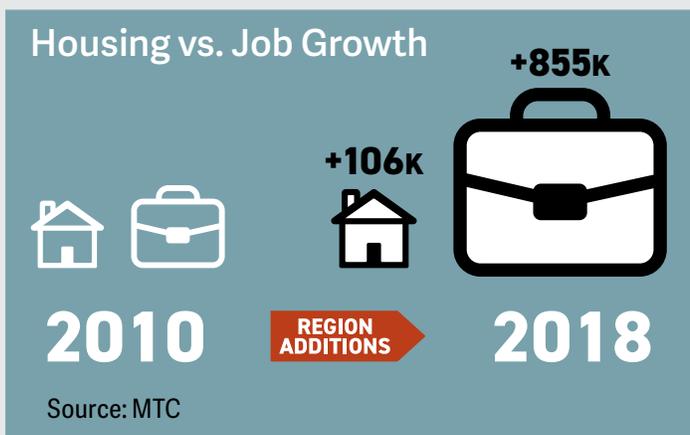
(2013–2017 STP and CMAQ programming by use)



Source: MTC

Seeking Solutions to Bay Area Housing Crisis

With the Bay Area’s economy growing at three times the national average, the region’s continued vitality is critical to American prosperity. Yet the housing shortage is a major contributor to inequality and puts at risk the Bay Area’s ability to remain globally competitive, jeopardizing the future of California’s middle class, and threatening the stability and dignity of far too many of our residents.



Federal Housing Tax Credits

The Low Income Housing Tax Credit (LIHTC) program — a unique federal-state-local-private partnership — is California’s most important affordable housing financing tool, with more than 360,000 apartments for low-income California households built and preserved with LIHTCs over the past three decades. Unfortunately, the 2017 corporate tax cuts devalued the credits, cutting by more than 20 percent the number of homes produced for low-income Californians, from 24,000 tax credit units in 2016 to fewer than 19,000 units in 2018.

Bay Area voters and the State of California have stepped up, approving billions of dollars in state and local affordable housing and homelessness bonds, and investing an historic \$2.4 billion for affordable shelter in the fiscal year 2020 State Budget. This includes \$500 million in state tax credits that will leverage federal LIHTCs into additional affordable units. But California’s housing funding gap is too big to close without a stronger federal partner. Consistent with bipartisan Congressional proposals, Congress should:

- Increase LIHTC allocations by 50 percent;
- Establish a permanent floor for 4 percent LIHTCs, paralleling the existing minimum rate for 9 percent credits; and
- Authorize states to recycle multifamily housing bonds for a range of affordable housing investments.

These changes could result in an additional 43,000 affordable homes in California over the next 10 years, according to Enterprise Community Partners and the National Council of State Housing Agencies.



Nearly 843,000 California families have been housed in LIHTC-financed apartments since the program was created.

MTC ARCHIVES



In 2016 alone, LIHTCs generated \$3.3 billion in affordable housing construction in California.

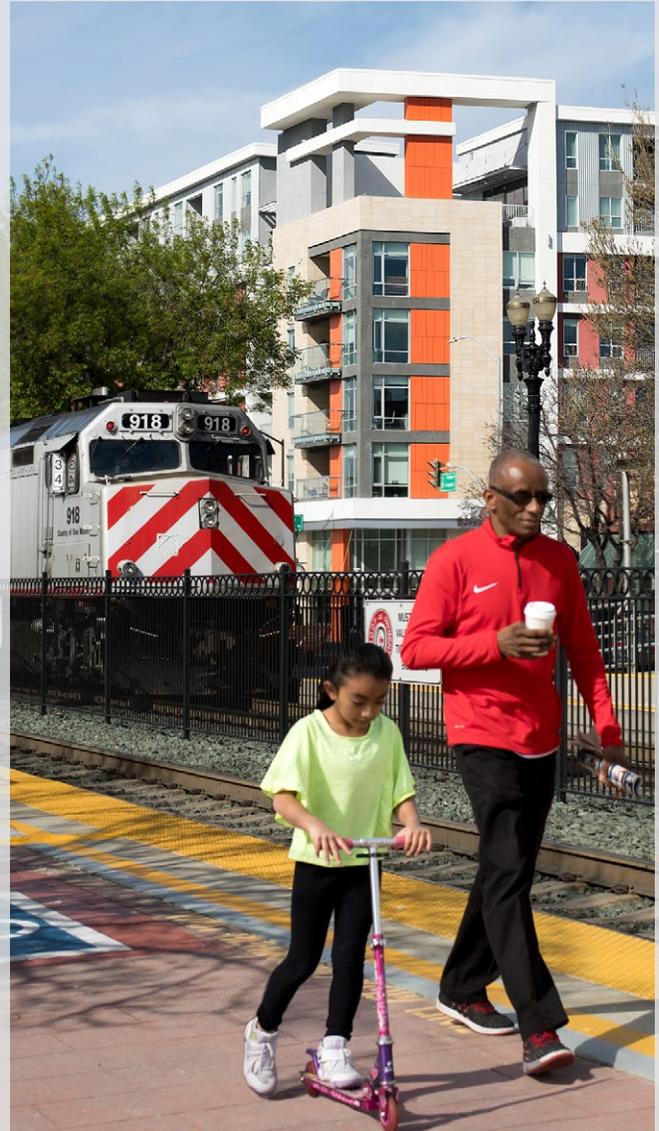
2021 Housing Appropriations

Federal rental assistance helps 530,000 low-income California families, seniors and individuals with disabilities afford rent every month; and the Community Development Block Grant, HOME Investment Partnership and McKinney-Vento Homeless Assistance programs provide nearly \$150 million each year to help Bay Area cities and counties improve housing affordability and provide shelter and supportive services to individuals and families who are homeless.

MTC and ABAG urge Congress in fiscal year 2021 to fund these Department of Housing and Urban Development programs at or above fiscal year 2020 levels to ensure that rental assistance recipients can stay in their homes, and that local governments and community partners can continue to fight against housing instability and homelessness.

Regional Solutions to Regional Challenges

The Bay Area's housing shortage has huge transportation consequences. Every weekday, nearly 190,000 workers commute from outside the nine-county Bay Area to the business parks of Silicon Valley and the Tri-Valley, and more than 220,000 East Bay residents cross the toll bridges to reach jobs in San Francisco, the Peninsula and Marin County. MTC and ABAG are working together to support regional solutions to this historic challenge, including potentially placing a regional housing funding measure on the November 2020 ballot thanks to legislation enacted in Sacramento last year, AB1487 (Chiu).



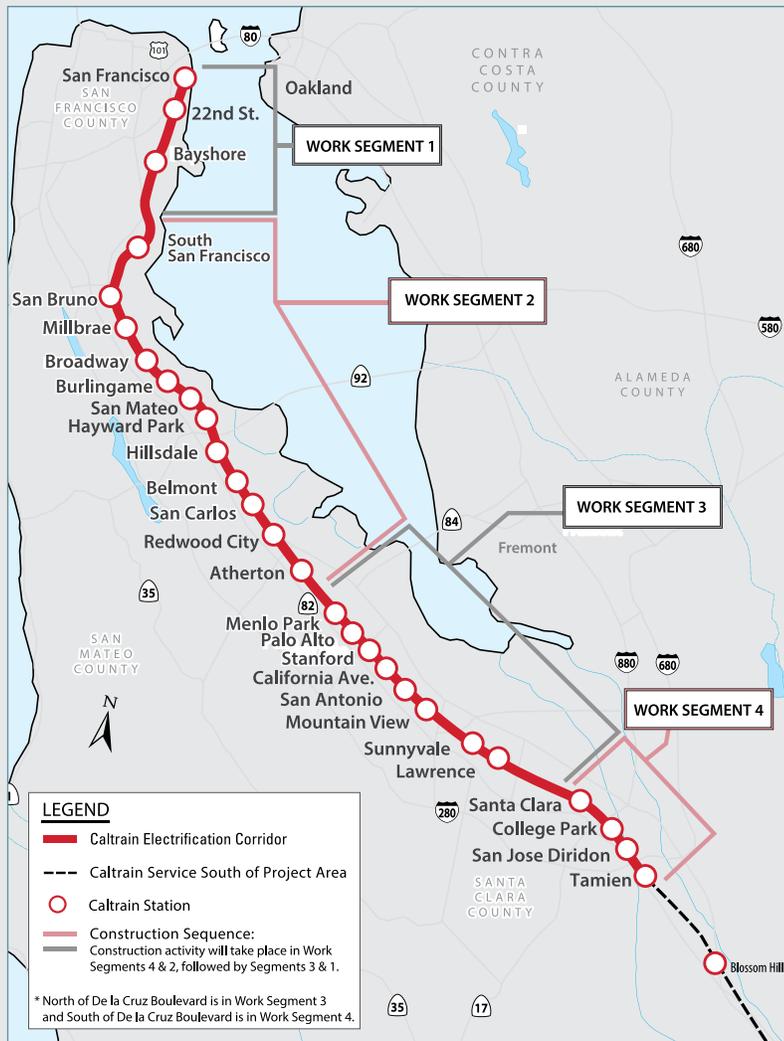
Bay Area's Core Capacity Projects on Track

Thanks to strong funding commitments from local, state and federal partners, the Bay Area is making great progress on two game-changing transit capacity enhancements — Caltrain Electrification and BART Transbay Core Capacity. These projects will increase rail commuting capacity between San Francisco, Silicon Valley and the East Bay, three of the most economically productive areas in the United States.



IMAGE COURTESY OF CALTRAIN

Caltrain's new electric trains are being assembled by workers at the new Stadler U.S. manufacturing facility in Salt Lake City, Utah.



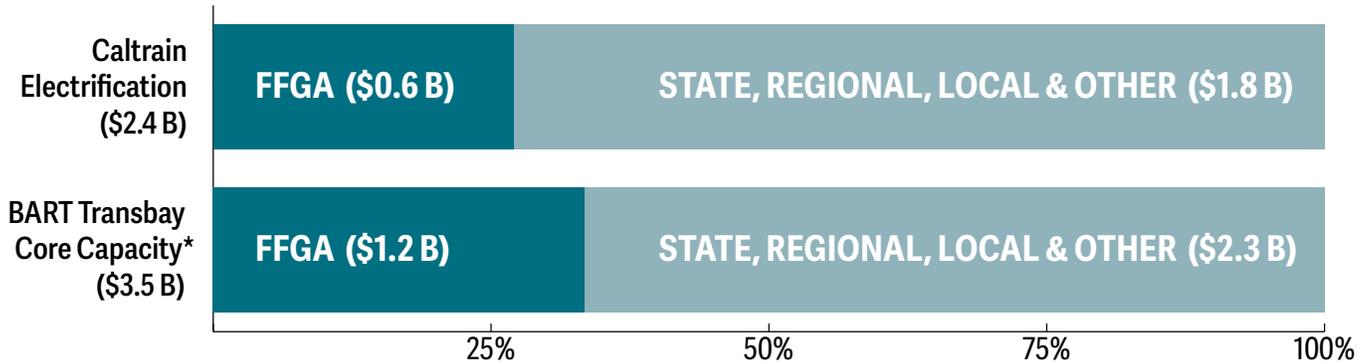
Source: Caltrain

Caltrain Electrification

In 2017, Caltrain — the 7th largest commuter railroad in the country — secured a \$647 million Full Funding Grant Agreement (FFGA) to transform its old-fashioned diesel system into a modern electric railway that will help address one of the Bay Area's principal barriers to economic growth by easing commutes between San Francisco, San Jose, and the nation's most high-profile tech companies.

Caltrain Electrification is estimated to create 12,000 direct and indirect jobs, boost passenger capacity by 30 percent and eliminate over 176,000 metric tons of greenhouse gas emissions each year. Electrification also creates the potential for expanded Caltrain service that will meet the current and future needs of the Bay Area.

Bay Area CIG Project Funding Plans



The Bay Area is a strong local partner for these priority projects, overmatching the federal commitment by more than 2- to-1.

* Though the BART total project cost is \$3.5 billion, only \$2.7 billion is CIG-eligible.

Construction is now underway in all four work segments (shown in the map at left), with the first electric trains expected to be in service by 2022.

MTC urges Congress to appropriate \$100 million for fiscal year 2021, consistent with the FFGA.

BART Transbay Core Capacity

While BART's total ridership has fallen the last three years, peak period, peak direction usage hit an all-time high in fiscal year 2019. The Bay Area's continued economic growth and mobility depends on BART adding more capacity.

The Transbay Core Capacity project will accommodate a 30 percent increase in train frequency between San Francisco and the East Bay, from 23 trains per hour to 30 trains per hour in both directions. The project includes a communications-based train control system to reduce headways, a railcar fleet expansion, increased vehicle storage capacity and added traction power capacity to support higher frequencies and longer trains.



MICHELESTONE

BART's new train cars feature three doors on each side to improve reliability and to speed passenger loading and unloading.

BART received approval from FTA for entry into Engineering in June 2019 and a \$300 million down payment from fiscal year 2018 Capital Investment Grant funds. BART anticipates receiving an FFGA by mid-2020.

MTC urges FTA to expeditiously award an FFGA to commit the remaining \$1.2 billion in Capital Investment Grant project funding.

Bay Area’s Next Generation of Transit Capacity Projects

The Bay Area has an aggressive \$26 billion investment plan to improve transit connectivity between the region’s population and job centers. The Capital Investment Grant (CIG) program is critical to advancing the region’s top two transit capacity expansion priorities — BART Silicon Valley Phase II and the Caltrain Downtown Extension.

BART Silicon Valley Phase II

With BART Silicon Valley Phase I service slated to begin in 2020, the Santa Clara Valley Transportation Authority (VTA) is now working on the second phase to extend BART via subway through downtown San José to Santa Clara.

The six-mile Phase II extension — which includes five miles of tunnel and four stations — will complete a major rail link between San José, San José State University, SAP Center (formerly HP

Next Generation Transit Funding Plans (Billions)

Project:	BART Silicon Valley, Phase II	Caltrain DTX
Committed Funding	\$4.2	\$1.2
FFGA Anticipated	\$1.4	\$1.0
Other Funding	N/A	\$1.7
Total Project Cost	\$5.6	\$3.9
FFGA Share	25%	26%

Pavilion), Santa Clara University, Google’s proposed new employment cluster and other Bay Area urban centers.

A proposed \$1.4 billion FFGA through the FTA Pilot Program for Expedited Project Delivery (EPD) comprises 25 percent of the \$5.6 billion Phase II funding plan. In 2019, FTA provided a \$125 million down payment and VTA anticipates receiving an FFGA in mid-2020 that will commit the remaining funds.



Rendering of Downtown San José Station interior.

RENDERING COURTESY OF VTA

Caltrain Downtown Extension/ High-Speed Rail

The Caltrain Downtown Extension (DTX) will modify the existing Caltrain station at Fourth and King streets in San Francisco, adding a new adjacent underground station and extending the Caltrain rail line 1.3 miles north into the new Salesforce Transit Center near the heart of downtown San Francisco's Financial District. The project is in the early design phase and faces a significant funding gap, though Bay Area voters in 2018 helped shrink that gap by \$325 million with Regional Measure 3.

The new underground stations at Fourth and Townsend Streets and at the Salesforce Transit Center's planned underground train platform are being designed to accommodate high-speed rail and other rail connections to the East Bay.



NOAH BERGER

The Salesforce Transit Center, pictured above, officially opened July 2019. The two subterranean levels — not yet open to the public — will house the future train station mezzanine and the train platform.

FTA issued a Record of Decision in 2019. The project is expected to seek a \$1 billion FFGA.

Transit-Oriented Communities: A Public-Private Partnership

BART Silicon Valley Phase II is the nation's first project to receive a funding allocation under the EPD pilot, which rewards innovative public-private partnerships with a streamlined CIG application.

Transit-oriented communities — VTA's proposed public-private partnership — are planned on VTA-owned land around the project's four stations. Under the proposal, VTA will lease agency-owned property to developers for a mix of office and retail space and mixed-income apartments, and will reinvest the long-term revenues to meet the agency's priorities.

Transit-oriented development will not only maximize transit ridership and provide much-needed new housing, this joint-development strat-

egy is also a financing tool that could pay for BART Silicon Valley extension improvements such as future station area investments or ongoing operations and maintenance.



Gish Apartments is a transit-accessible affordable housing development in downtown San José.

BERNARD ANDRE, COURTESY OF FIRST COMMUNITY HOUSING

Plan Bay Area 2050: Equity and Innovation Guide Regional Planning

The Bay Area’s future will be shaped by a host of hard-to-predict forces such as political volatility, new technologies, economic booms and busts, and a changing climate. Plan Bay Area 2050 — the Bay Area’s federally-mandated regional transportation plan update — embraces this uncertainty, looking beyond traditional transportation and land-use issues to identify strategies that will support a vibrant and equitable Bay Area, whatever the future holds.

Plan Bay Area 2050

As part of the lead-up to Plan Bay Area 2050, MTC and ABAG conducted two years of “Futures Planning” that transcended state and federal planning constraints, allowing greater flexibility to explore what could happen under three widely divergent futures:

- **Rising Tides, Falling Fortunes** — What if the federal government cuts spending and tightens immigration restrictions, causing an economic slowdown?
- **Clean and Green** — What if new technologies and a national carbon tax enable electrification and automation of the vehicle fleet, and virtual reality enables more telecommuting for higher-income workers?
- **Back to the Future** — What if an economic boom and increased public investment spur a new wave of development that strains existing infrastructure?



GEORGIA GANN DOHRMANN

With more federal planning funds and leeway for creative solutions, the Bay Area can continue to innovate and set a national standard for comprehensive transportation planning.

Shifting Perspective: Centering Equity

Equity is a central focus as MTC and ABAG look ahead to 2050. While accessibility, affordability and equitable outcomes are longstanding MTC and ABAG goals, under new executive leadership, equity will be an essential lens through which all our work is filtered, from policy to service delivery to advocacy.

Plan Bay Area 2050 will be a high-profile platform for demonstrating the agencies’ commitment to equity in all aspects of our work, and MTC-ABAG planners have hit the ground running. For the first time, an equity assessment was incorporated on the front end of our project performance assessment, flagging projected outcomes where

Performance Drives Projects

Using a data-driven, academically rigorous performance assessment framework, MTC evaluated over 90 major transportation projects across various futures to determine the projects' cost-effectiveness, equity impacts and resilience.

This evaluation is the MTC's robust to date, quantifying everything from multimodal travel time savings to impacts from lost wetlands in order to help the Bay Area prioritize transportation projects for inclusion in the fiscally constrained Plan Bay Area 2050.



©2009 ERIC FISCHER,

A new transbay rail crossing emerged as the most cost-effective transit expansion megaproject in the Bay Area.



Greater investments in micromobility can significantly benefit the Bay Area's overall transportation network.

NOAH BERGER



NOAH BERGER

Pricing is the most powerful tool to affect travel patterns, but it must be done in an equitable manner to avoid adverse outcomes for low-income residents.



MTC ARCHIVES

Rather than adding auto capacity over the Altamont Pass, combining Valley Link with complementary pricing strategies presents a promising path forward.

low-income Bay Area residents could be underserved by the transportation investment compared to the region's wealthier residents. This approach already has spurred consideration of complementary equity strategies — ranging from means-based transit fares to tolling discounts — that could make projects with equity risks more accessible to all.



KINGMOND YOUNG

Marin County residents at a public meeting about strategies to mitigate climate change impacts on vulnerable populations.

Leading the Way for a Better Connected Bay

With more than two dozen transit operators providing service across 101 cities and nine counties, navigating the Bay Area's transit network has long been a challenge. MTC is working on multiple fronts to improve the Bay Area transit experience by delivering a more seamless and affordable network that's just as easy to navigate in real time as driving solo or hailing an Uber or Lyft.

MTC in 2018 authorized a major technological upgrade to Clipper® — the Bay Area's electronic transit fare payment card. Among the customer-focused upgrades for Clipper 2.0 will be a mobile app that will enable transit users to manage accounts and pay fares with their smart phones, as well as enhanced fare-payment readers that will be "open payment ready," enabling contactless bankcard payments.

MTC also is leading a regional fare integration study, developing a regional transit map, and piloting a regional transit discount for low-income riders, with the goal of simplifying fares and removing barriers to more transit usage.

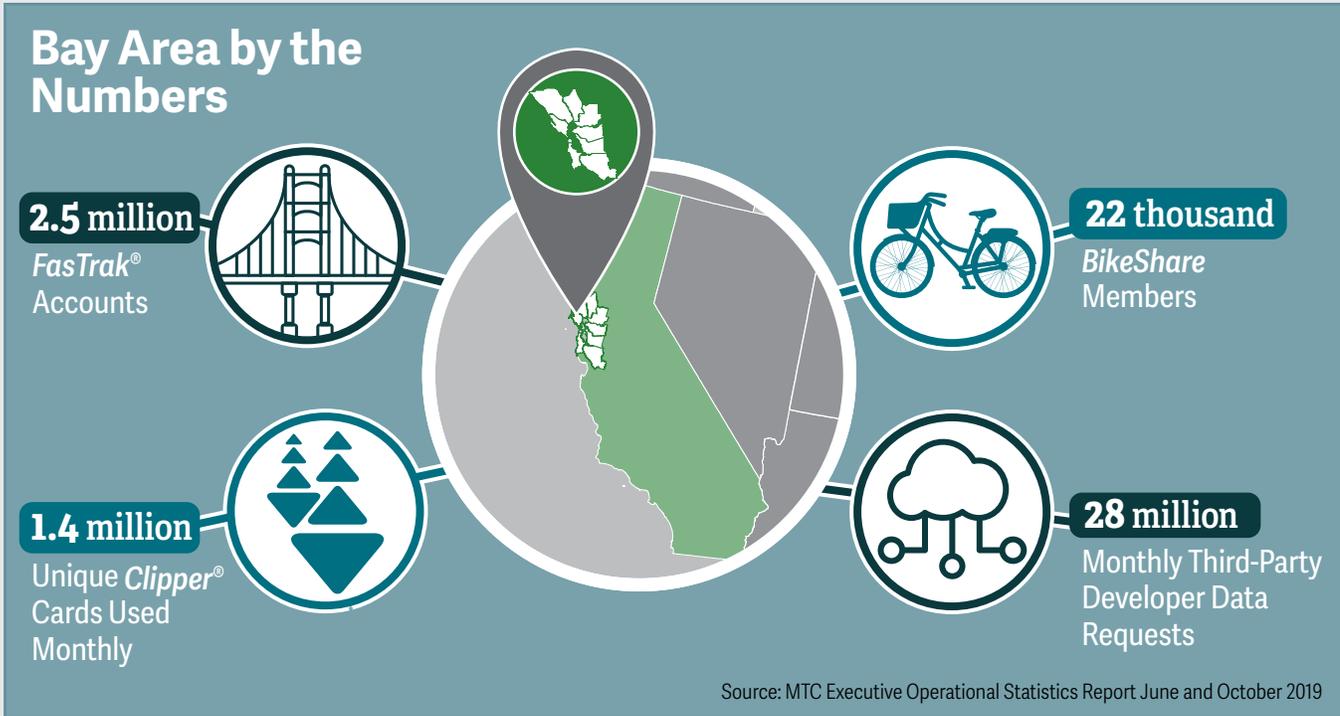


Phase 1 prototype of MTC's regional transit map.



Digital rendering of a transit planning application.

APP DESIGN BY KATVELLOS.COM



With the rise of private sector navigational tools, MTC has shifted its transit trip planning focus from the nearly 20-year-old 511 traveler information system to providing a regional General Transit Feed Specification (GTFS) feed to researchers and developers. Consolidating information from our two dozen operators into a unified public feed has streamlined transit data distribution and spurred greater integration of Bay Area transit options into tools and apps such as Google Maps, Lyft and Uber.

These efforts seek to attract new riders to public transit, make travel more affordable for those who need it most, and avoid the downward ridership spiral that has plagued many of the nation’s transit operators in recent years.

Making Transit Work for Everyone

In April 2020, Clipper® will launch the Clipper START pilot program to offer up to 50 percent fare discounts for low-income Bay Area transit riders on BART, Muni, Caltrain, and Golden Gate Transit and Ferry. MTC is working closely with county social service agencies to promote the 18-month pilot program.



NOAH BERGER



PHOTO: HONDA; COURTESY OF CCTA

GoMentum Station, one of the largest secure AV test facilities in the United States, is located in the city of Concord in Contra Costa County.

The Future of Mobility on Display Today

Autonomous vehicle (AV) and connected vehicle (CV) technologies have the potential to deliver significant safety, mobility, environmental, equity and economic benefits in the Bay Area. We need a strong federal partner to maximize these benefits.

Automated Transit Takes to the Streets

A variety of AV/CV projects are underway in the Bay Area to pilot driverless technologies, many of them building on testing at GoMentum Station, a U.S. Department of Transportation-designated proving ground that is bringing together automobile manufacturers, technology companies and others to explore next generation vehicle technologies.

GoMentum Station was an early testbed for the electric driverless shuttle — or shared autonomous vehicle (SAV) — which will soon be deployed on a pilot basis to close the “last-mile” gap between the Dublin/Pleasanton BART station



PHOTO COURTESY OF LAVTA

The EasyMile SAV will be deployed on public roads in the city of Dublin.

and destinations within the city of Dublin. Led by the Livermore Amador Valley Transit Authority, the project will first test and later place into service an SAV on public roads. MTC provided \$395,000 in federal funds for the pilot. LAVTA is on track to start testing in early 2020, but awaits approval by the Federal Communications Commission before fully automated operations can begin.

Technology Advances Accessibility

In Silicon Valley, an industry-leading effort is underway to develop an SAV accessible to persons with disabilities. A VTA-led pilot at the Palo Alto VA Hospital will transport veterans within the complex on an accessible, electric SAV equipped to serve persons with both physical and cognitive disabilities. This project — funded in part by an \$845,000 grant from MTC — aims to help identify what’s needed to ensure driverless transit vehicles are accessible to all. VTA is targeting 2020 for deployment.

Connecting Transportation Networks

The “connected” aspect of CV/AVs is key to delivering many of the safety, connectivity and congestion benefits expected of the automated mobility revolution. CV technologies maximize collision-avoidance and can accommodate dynamic pricing, platooning and other network efficiency strategies. CV technology is also critical to spur automation in the risk-averse transit sector. The LAVTA demonstration requires roadside units at every intersection traversed in autonomous mode, as is common for SAV projects.

Federal Role

MTC encourages Congress to support joint CV/AV deployment by preserving the 5.9 GHz spectrum for transportation safety purposes, establishing strong cybersecurity standards, and funding connected infrastructure in the FAST Act reauthorization. We also support establishing a federal framework for CV/AV that preserves traditional state and local authority over how vehicles operate on our roads.



The LAVTA SAV pilot will transport riders to and from the Dublin/Pleasanton BART station, pictured above.

MTC ARCHIVES

Growing Express Lanes Network Offers Faster, More Reliable Commutes

The Bay Area’s growing network of express lanes is improving freeway efficiency and offering drivers more choices. New state transportation funding and voter-approved bridge tolls are speeding buildout of the planned 600-mile Bay Area Express Lanes network, with 140 miles under construction in Alameda, Contra Costa, San Mateo and Santa Clara counties in 2019.

Maximizing Freeway Efficiency

Express lanes are freeway lanes that are free for qualifying carpools, buses and motorcycles, but also available to solo drivers for a fee that varies depending on congestion and length of trip.

Today, 78 miles of express lanes are delivering travel time savings for drivers and transit riders alike along some of the Bay Area’s most heavily-trafficked commute corridors. For example,

Express Lanes Revenue: Fiscal Year 2019

Route	Revenue	Trips	Average Toll
I-680 Contra Costa County	\$11 M	8 M	\$1.75
I-680 Alameda County	\$2.9 M	908,000	\$3.10
I-580 Alameda County	\$16.1 M	8.4 M	\$2.70 westbound; \$3.75 eastbound
SR 237 Santa Clara County	\$1.3 M	3 M	\$3.00

Source: MTC



customers of the I-680 Contra Costa express lanes travel nine to 13 miles per hour faster than those in the adjacent lanes. Express lanes also are beginning to generate significant revenue, as shown in the chart, at left.

Stop Penalizing Express Buses

Though the Federal Highway Administration has been supportive of the Bay Area’s efforts to build express lanes, federal transit policy penalizes regions that maximize roadway efficiency through pricing by cutting their share of transit funds. This inconsistency is the result of an FTA interpretation of State of Good Repair (SGR) Program eligibilities. SGR funds are partly apportioned based on bus service levels. In 2015, FTA determined that bus service on express lanes would no longer count toward the formula, while bus service on carpool lanes would remain eligible. This policy makes little sense given that express lanes are managed — through price and occupancy requirements — to provide a more reliable trip for

Fair is Fair — Improving Enforcement

Unfortunately, carpool and express lane cheating is rampant. Cheaters degrade the network for motorists and transit riders who play by the rules. Due to the cost and other challenges associated with expanding manual ticket writing, MTC is piloting two enforcement technologies:

- **Roadside cameras:** Building on an earlier pilot, MTC will integrate roadside cameras with our FasTrak® electronic toll collection system to identify carpool lane violators at the Bay Bridge. We anticipate deploying the pilot in 2021.
- **Smartphone app-based technology:** Starting in 2020, MTC will recruit volunteers to pilot a smartphone app to verify the number of people in each app-user's car.

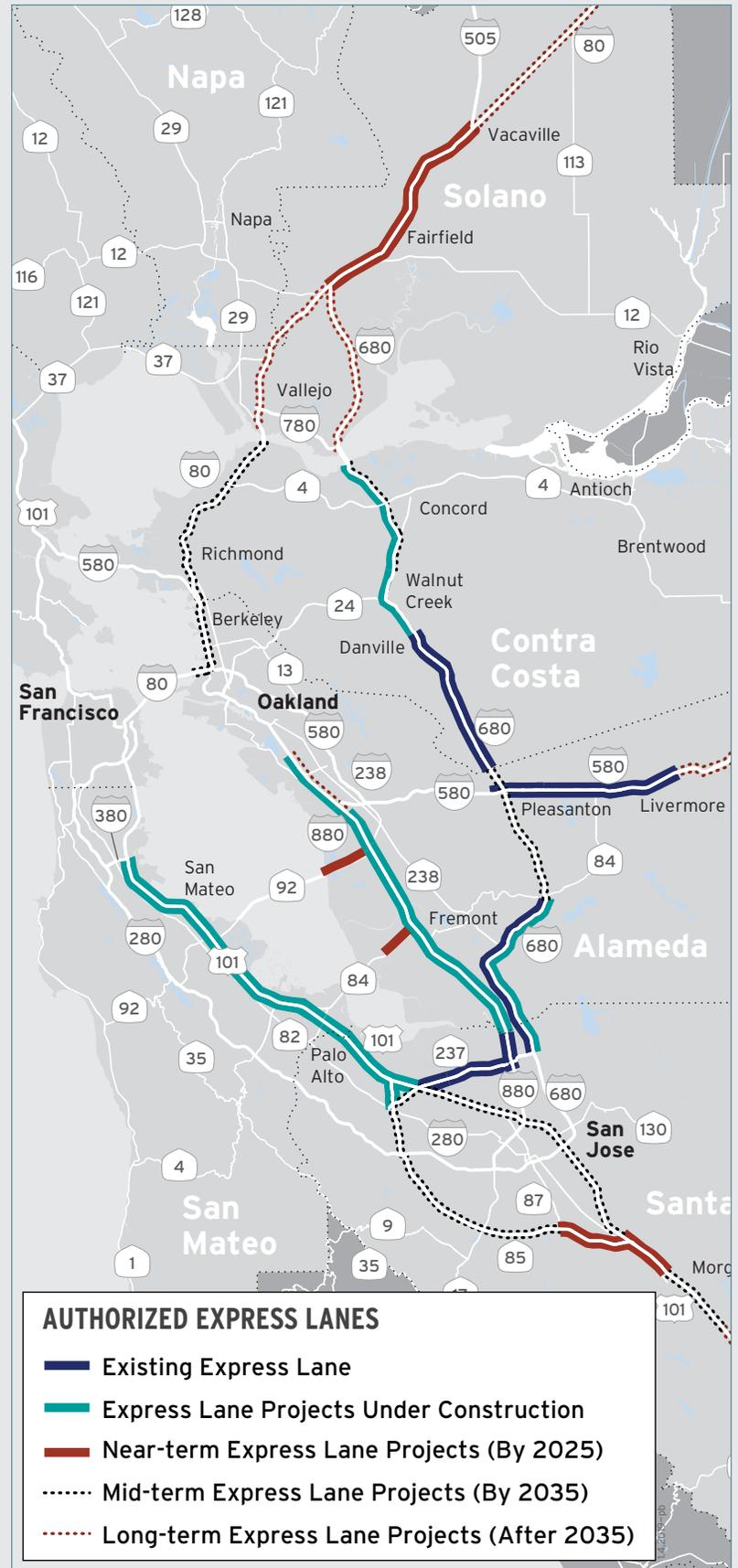
Concurrent testing will allow us to compare each technology across cost, privacy, reliability and user experience performance factors.



NOAH BERGER

buses than either carpool-only lanes or general purpose lanes.

MTC urges Congress to prevent transit funding cuts to the Bay Area and other regions with express lanes by reversing this policy in the FAST Act reauthorization.



Source: MTC

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