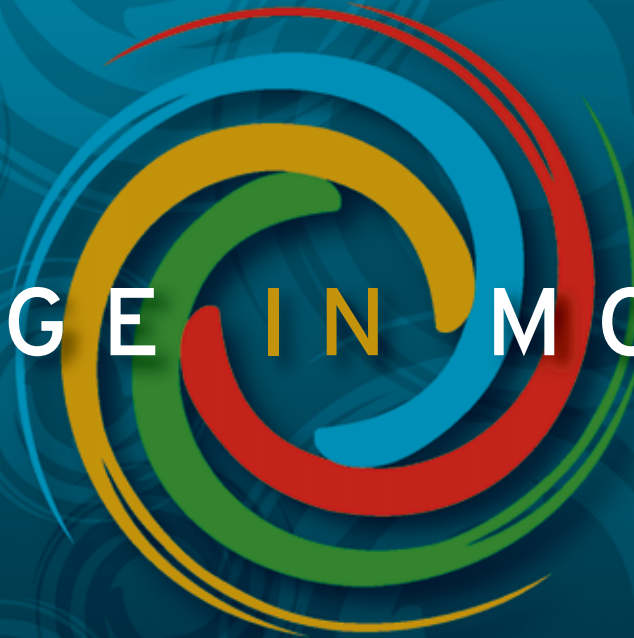


Transportation 2035 Plan for the San Francisco Bay Area

**FINAL**

April 2009

# CHANGE IN MOTION



TRANSPORTATION  
**2035**



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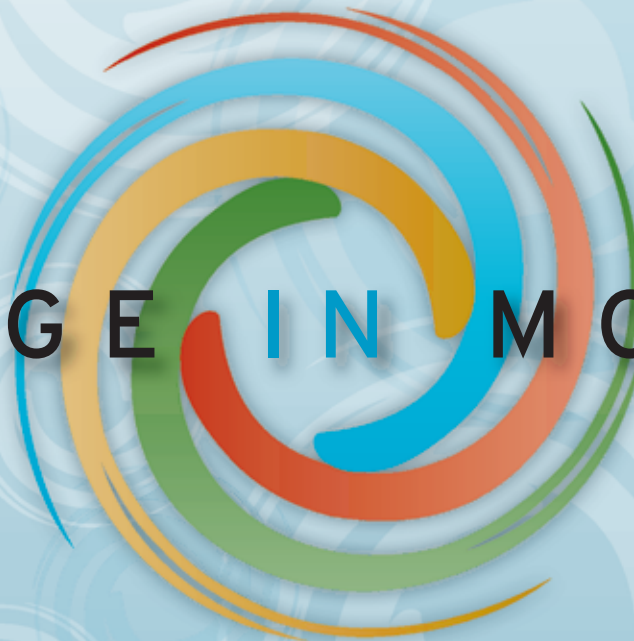


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**FINAL**

April 2009

C H A N G E I N M O T I O N



TRANSPORTATION  
**2035**



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# A Call for Change

All long-term plans are about change. There can be disagreement about precisely which changes the future will bring, or how fast they will occur, or what can and should be done about them — but no one doubts that conditions 25 or 30 years hence will be different than they are today. Change is a certainty, and to plan means to reckon with change.

**“This plan proposes crucial changes to the Bay Area’s transportation system.”**

And all transportation plans are, by definition, about motion. Planners necessarily focus their attention on what is being transported (cargo or people), and by what means (by truck, car, bus, train, ferry, bicycle, or even by foot). But it is motion — the business of getting from here to there — that is the core concern of every transportation plan.

In these respects, this Transportation 2035 Plan for the San Francisco Bay Area is like other long-range transportation plans: It is about change and it is about motion. And if we had labeled the plan “Change and Motion,” it would be an accurate if unremarkable



description. But we call our plan “Change in Motion” — and what a difference a two-letter word can make.

## Change in Motion

“Change in motion” gets at what is most distinctive about this transportation plan by managing to simultaneously convey several key ideas. First, it says that change is happening; it is “in motion.” Second, and most importantly, it suggests that motion (i.e., transportation) is changing, and that this plan is playing a role in

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that change. Both these things are true. We are definitely living in a time of change, and this plan will bring changes to the Bay Area's transportation system. And both meanings are central to the structure and development of this plan. Further, this short phrase carries the sense that the overall change process is dynamic and ongoing, and it will unfold over time as we move forward. And this also is true.

Focusing on the first meaning, to say that change is "in motion" is to emphasize its immediacy. It is not a contingent or abstract aspect of a distant future. It is already under way. Indeed, to cite one key example, the buildup of greenhouse gases in our atmosphere is not only already happening, it has been happening for longer than we knew. And, to mention just two examples, a dizzying run-up in the price of oil and a stomach-churning economic downturn were significant changes that forced themselves on our attention in real time, as we were developing this plan. Other important changes, such as the graying of the Baby Boom generation, are imminent and will soon affect us.

In drawing up the Transportation 2035 Plan, we have been acutely aware of rapidly shifting conditions and policies, even as we cast our eyes to the far horizon and strive to fashion a vision and a strategy for the future. This lends the plan a note of urgency and inspires a readiness to take action against the root causes of

problems like traffic congestion, for instance, and not just to ameliorate symptoms.

But most crucially, "change in motion" serves to clearly announce that the ways that residents travel around the Bay Area are changing, and that this plan will change them further. By means of its investment choices and adopted policies, the Transportation 2035 Plan aims to stimulate the use of public transit, increase the safety, utility and appeal of bicycling and walking, and reduce miles traveled and emissions by cars and trucks in the Bay Area while increasing the efficiency of the roadway and transit systems for all users.

**“Travel around the region will be different as a result of the steps taken in this plan.”**

Innovative approaches such as pricing of excess carpool-lane capacity on highways, a brand-new Transportation Climate Action Campaign to target greenhouse gases, a major public transit expansion program, a multipronged Freeway Performance Initiative to maximize throughput on existing highways, and an overall emphasis on measurable performance improvements are signal components of this plan. In these ways, the Transportation 2035 Plan attempts to influence or initiate a whole range of actual "changes in motion." Travel around the region will be different



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as a result of the steps taken in this plan, and the changes will be to the Bay Area's benefit.

More than a tag line, "change in motion" thus succinctly captures what is distinctive about the Transportation 2035 Plan. As transportation planners, we are both coping with changes and trying to cause them. And these two processes are interrelated and interwoven in this plan. The plan itself is a catalog of changes which, taken in their entirety, we hope will lead to a future of greater mobility, reduced congestion, cleaner air and a better quality of life in the Bay Area. That is the direction we want change to be moving.

## Choosing Change

Bay Area residents and newcomers live and work in this region because of its physical beauty, resilient economy, cultural and ethnic vibrancy, and quality of life. These gifts, whether bequeathed by Nature or fashioned by the hands of our neighbors and forebears, are now ours to protect and carry forward for new generations.

Today we stand at the proverbial fork in the road. We can continue to live off of our inheritance or establish a new legacy for generations yet to come. We can inspire, innovate and implement an integrated, efficient regional transportation system that bolsters



**“We must anticipate change, instigate change, and, most of all, we must succeed in putting change in motion.”**

our regional economy, safeguards our environment, and ensures social equity throughout our region. But to do so we must respond to the changing environment around us. We must anticipate change, instigate change, and, most of all, we must succeed in putting change in motion. We must also take chances and risk failures along the way. We ask you to join us in choosing change and choosing a better future for the Bay Area.

## CHANGE IN MOTION

“If you do not change direction,  
you may end up where you are heading.”

LAO TZU





# Overview – Change in Motion

The Transportation 2035 Plan looks deeply into the future, into the middle of the 21st century. There is reason to believe that the midpoint of Century 21 is going to be profoundly different than the middle of the 20th century, from which most of our present transportation planning assumptions and methodologies originate. We are looking ahead at a period of unprecedented changes. Some of these changes will be extensions of trends that have been emerging for some time, although many are just now coming into public consciousness. Other changes will be abrupt departures from the trends we are familiar with — transformative and structural changes, for which past practice provides little guidance.

Not all changes will be equally severe. Some of the changes on the horizon may merely require that we modify how we approach transportation planning to include factors that have heretofore played only a marginal role. Others may reverberate dramatically through all sectors of economic and social life, including our transportation behavior. But it seems certain that the changes we face will beget changes in the ways we move. Welcome to change in motion.

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## Transportation 2035: Statement of Vision

Transportation 2035 is change in motion. Guided by the Three Es of sustainability — Economy, Environment and Equity (see pages 11 and 13) — the plan’s ambitious goals and performance objectives will transform not only the way we invest in transportation but the very way the Bay Area travels. Transportation 2035 sets forth a bold vision and takes us on a journey to:

**Where** mobility and accessibility are ensured for all Bay Area residents and visitors, regardless of race, age, income or disability; and

**Where** our bicycle and pedestrian facilities, public transit systems, local streets and roads, and highways are all safe and well-maintained and take us when and where we need to go; and

**Where** an integrated, market-based pricing system for the region’s carpool lanes (via a regional express lane network), bridges and roadways helps us not only to manage the demand on our mature transportation system but also to pay for its improvements; and

**Where** our lively and diverse metropolitan region is transformed by a growth pattern that creates complete communities with ready, safe and close access to jobs, shopping and services that are connected by a family of reliable and cost-effective transit services; and



**Where** technology advances move out of the lab and onto the street, including clean fuels and vehicles, sophisticated traffic operations systems to manage traffic flow and reduce delay and congestion on our roadways, advanced and accessible traveler information that allows us to make informed travel choices, and transit operational strategies that synchronize fare structures, schedules and routes to speed travel to our destinations; and

**Where** we have a viable choice to leave our autos at home and take advantage of a seamless network of accessible pedestrian and bicycle paths that connect to nearby bus, rail and ferry

services that can carry us to work, school, shopping, services or recreation; and

**Where** we lead and mobilize a partnership of regional and local agencies, businesses and stakeholders to take effective action to protect our climate and serve as a model for national and international action; and

**Where** our transportation investments and travel behaviors are driven by the need to reduce our impact on the earth’s natural habitats; and

**Where** all Bay Area residents enjoy a higher quality of life.



## Change Affects Planning

The Transportation 2035 Plan arises out of and is responsive to the unique historical moment we find ourselves in, when external forces and the Bay Area's own aspirations impel us to change the way we think about and plan our transportation future. Some of the most salient changes the Transportation 2035 Plan confronts are described below.

### Climate Change on the Region's Radar

The warming of Earth's climate due to emissions of greenhouse gases is now an accepted reality, and the consequences of this global phenomenon will make themselves felt to some degree despite any steps we may take to mitigate their impact. In California and the Bay Area we will experience a greater number of extreme-heat days, increased wildfire risk, a shrinking Sierra snowpack that would threaten the state's water supply, and a rise in sea level (which would threaten the transportation infrastructure concentrated near the shoreline of the Bay).

With transportation accounting for 40 percent of the region's greenhouse gas emissions, the Bay Area faces a clear imperative to address climate change in the Transportation 2035 planning process. If that by itself were not enough to motivate us, the landmark California Global Warming Solutions Act of 2006 (also known as

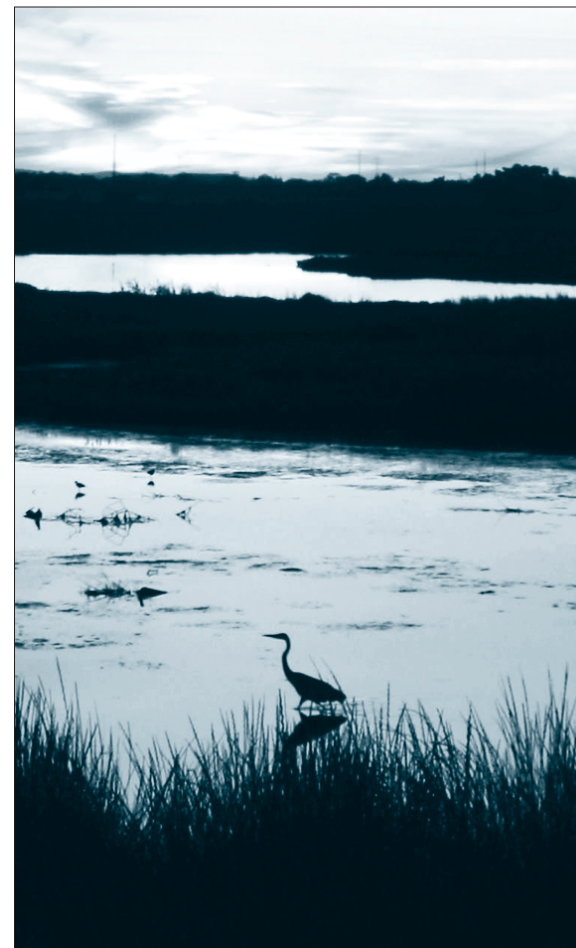
**“To protect the magnificence of San Francisco Bay and the environment of our entire region, our long-range plans must confront head-on the threat posed by climate change. This Transportation 2035 Plan begins to take up that challenge.”**

Will Travis, Executive Director, Bay Conservation and Development Commission

AB 32) mandates a reduction in greenhouse gas emissions to 1990 levels by the year 2020 — effectively a 15 percent cutback from today's level. And the signing last year by Governor Schwarzenegger of Senate Bill 375 — which mandates the California Air Resources Board to work with regional agencies like MTC and the Association of Bay Area Governments to curb sprawl and reduce greenhouse gas emissions — adds momentum to this effort. This plan must take on the challenge of achieving these climate change goals.

### Volatile Oil Prices Add Planning Wild Card

The record-high gasoline prices witnessed during the development of the Transportation 2035 Plan introduced a sudden and perhaps profound change into the planning process (though prices have eased considerably in more recent months; see chart on page 8). Combined with data indicating that the volume of gasoline sold in California actually declined in each of the last three years, higher oil prices could help boost



a nascent trend toward less driving — a trend bolstered by recent upticks in transit usage in the Bay Area. This could result in reductions in the number of vehicle miles traveled in the region, with beneficial impacts on congestion, highway fatalities, and greenhouse gas emissions and other air pollutants.

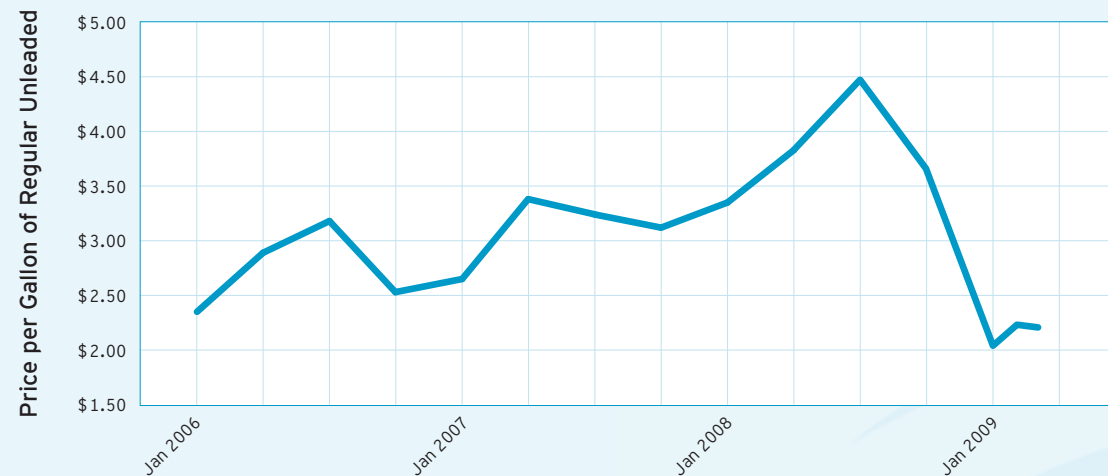
On the downside, the lion's share of transportation funding is derived from the federal and state excise taxes on gasoline, and if less fuel is purchased, fewer dollars are available for future improvements. Current levels of funding already fall short of our needs, and this will only get worse if people cut back on driving and buy less gas. New funding mechanisms will have to be developed. In the meantime, fuel taxes should be raised to recover lost purchasing power due to decades of legislative failure to adjust these vital levies.

## Land Use Changes in FOCUS

Not all changes present daunting challenges. Some changes show the way toward future progress. A case in point is a joint regional planning initiative called FOCUS, which promotes future growth in areas near transit and within communities that surround the San Francisco Bay. Still in its early years, FOCUS is getting considerable traction in the region, as demonstrated by the fact that 60 local government entities have volunteered to facilitate the designation of Priority Development Areas (PDAs) within their jurisdictions. A PDA is

locally designated land where future growth can be channeled, at sufficient densities to take advantage of existing infrastructure and services, especially transit service. The current inventory of adopted PDAs (planned and potential) includes nearly 120 individual areas across the region. Together they comprise only about 3 percent of the region's land area, but based on estimates provided by local governments they could accommodate as much as 56 percent of the Bay Area's growth to the year 2035 — all in locations that will be accessible to high-quality transit. The early interest in this program is a hopeful sign for the region.

**Average Bay Area<sup>1</sup> Gasoline Prices, 2006 - 2009<sup>2</sup>**



<sup>1</sup> Survey of gas stations in Alameda, Contra Costa, Marin, San Francisco, San Mateo and Santa Clara counties

<sup>2</sup> Through March 2009

Source:  
U.S. Department of Energy

The volatility of world oil markets makes long-range forecasting of gasoline prices an unusually speculative exercise. The rise or fall of gasoline and diesel prices can be powerful forces for change, but their future course is perilous to predict.

## Aging Population Portends Shift in Housing and Travel Choices

Key among the demographic changes that will affect Bay Area transportation is the aging of the Baby Boomers. As this sizeable segment of the region's residents reaches senior status, it is expected that many will relocate into smaller dwellings in the more urban portions of the Bay Area to have easier access to essential services and cultural opportunities. For some, with aging will come a loss of the ability to drive, and for those with low incomes or physical disabilities, "lifeline" transportation issues will

become increasingly important. From a land-use and mobility perspective, then, the graying of the Baby Boomers would seem to argue for a greater emphasis on smaller homes, low-maintenance housing arrangements, and a heavier reliance on non-driving transportation options, such as transit and ride-sharing with younger friends and family.

### **Rising Construction Costs Put Premium on System Efficiency**

For entities overseeing infrastructure programs, such as Caltrans, a longer-term trend toward higher global commodities prices has often

resulted in unprecedented construction cost increases. During 2005 and early 2006, some construction material prices rose much faster than consumer or producer price indices. The consequences of such price increases can include huge funding gaps that are not anticipated, delay or deferral of projects for a year or more (often leading to further inflation-caused cost increases), and even cancellation of projects. Because the Bay Area has a mature system, maintenance costs are significant, and delay or deferral of new projects means we must continue to pay dearly to maintain an aging system. While construction costs have abated during

the current economic downturn, it is imperative for us to look beyond infrastructure toward lower-cost, more-efficient ways to better manage the system we have in place.

One possible answer, advocated in this plan, is to institute a Bay Area Express Lane Network on the region's freeways. By giving drivers of non-carpool vehicles the option of "buying into" underutilized carpool lanes, the express lane network would allow us to better manage travel demand while raising needed revenue. And other technology-based improvements can help us to maximize operations of the existing freeway system.



### **Expiration of Federal Transportation Program Creates Uncertainty, Opportunity**

The governing federal surface transportation legislation, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA), expires in September 2009. Expressing its desire to thoroughly review SAFETEA policies, programs and revenue mechanisms, Congress created a special study commission, the National Surface Transportation Policy and Revenue Study Commission, to advise it. This group issued its findings in early 2008, calling for a comprehensive plan to increase investment, expand services, repair infrastructure, demand accountability and refocus federal transportation policy, while



“One way to frame the planning challenge facing the Bay Area is: Are we going to be able to walk the talk? We have been talking for a long time about smart growth — about integrating transportation and land use — but we have not had enough ‘smart walk.’ We know what we need to do. The question is, are we ready to do it? Transportation 2035 will help test this readiness.”

Henry Gardner, Executive Director, Association of Bay Area Governments



maintaining a strong federal role in transportation. The possibility of fundamental reform of the federal transportation program introduces a fair measure of uncertainty, of course, but it also represents a tremendous opportunity for a new national transportation vision. And the coming to power of a new presidential administration in 2009 promises to add new impetus to this effort. Here again, the imminence of change forms the backdrop for the development of this plan.

## Planning to Cause Change

This plan does more than simply take into account the changing circumstances we face. It addresses them directly, adopting new approaches that distinguish this plan from its predecessors. Transportation 2035 epitomizes change at every turn — change in partners, change in the planning process, change in goals, and change in analytic approach. We have fashioned a plan that responds to the transportation needs and demands of a region ready for change.

### Collaboration

From the start, we extended our reach and embraced a new partnership with our sister regional agencies — the Association of Bay Area Governments, the Bay Area Air Quality Management District, and the Bay Conservation and Development Commission — to help us develop this long-range plan. With the help of our regional partners, this plan no longer focuses

solely on surface transportation infrastructure but takes into account how transportation affects our land-use patterns, air quality and climate changes, and vice versa.

## Vision Before Budget

In turn, our planning approach and process has changed. While previous plans focused first on budgets and how to slice the investment pie, Transportation 2035 first sought to define a vision for what the region's transportation system ought to look like in 2035, and then identified, in broad strokes, those policies and investments that would carry out that vision (see page 6). In our desire to put priorities before projects, we made a special effort to look beyond simple infrastructure solutions, and to consider a range of operational improvements and policy innovations.

## Economy, Environment, Equity

Rooted in the Three Es of Economy, Environment and Equity, the vision for Transportation 2035 is to support a prosperous and globally competitive economy, provide for a healthy and safe environment, and produce equitable opportunities for all Bay Area residents to share in the benefits of a well-maintained, efficient, regional transportation system. The eight goals that the Commission adopted for this plan (see page 13), including the new climate protection goal and the new transportation security and emergency



management goal, give more specific expression to our commitment to the Three E principles. The policies and investments in this plan are designed to help us achieve these goals and to advance the Three Es. The stakes are high: Failure to make progress toward these goals would not only have a negative impact on our transportation system, but would also degrade the overall quality of life in the Bay Area.

## Performance Counts

A performance-based planning approach was used to help us focus on measurable outcomes of potential investments and the degree to which

they support stated policies. The use of performance measures in the Bay Area's long-range transportation plan is not new with Transportation 2035. SB 1492 (Statutes of 2002) requires the Commission to establish performance measurement criteria on both a project and corridor level to evaluate and prioritize all new investments for consideration in the Regional Transportation Plan (RTP). MTC conducted performance assessments for the *2001 Regional Transportation Plan*, and in 2003, for the *Transportation 2030 Plan*. While the evaluation produced useful information that enabled comparison among alternative investments,



the evaluation results were available after many of the key RTP investment decisions had been made.

However, this time, we used performance metrics to drive the visioning efforts and inform investment trade-offs prior to making investment decisions. We tested how three robust, financially unconstrained infrastructure packages would perform against a set of aggressive performance objectives. The analysis focused on reducing vehicle miles traveled, congestion, carbon dioxide and particulate emissions, and improving affordability. In addition to the infrastructure packages, we assessed how a pricing strategy that increases auto operating costs and how a land-use strategy that strikes a better jobs/housing balance in the urban core would help us meet the objectives.

In addition, we conducted a project-level performance assessment. Virtually all projects proposed for inclusion in the plan were tested to see if they helped advance the Three E's. And a rigorous benefit/cost analysis was performed on regionally significant, large-scale projects to determine which projects gave us the biggest bang for our buck. See the *Performance Assessment Report*, listed in Appendix 2, for additional details of this analysis.

### Lessons Learned: Limits of Infrastructure; Power of Pricing and Land Use; Need for Technology and Behavior Change

Our performance assessments helped us to gauge whether the plan's objectives are achievable, what it would take to reach them, and what new authority, new partnerships and new policies might be required to help us make progress towards them. We learned that infrastructure investments produce only modest tangible effects at the regional level, and that

aggressive pricing and land-use strategies exert much greater influence than transportation projects alone in moving us toward achievement of the performance objectives. We also learned that we must rely on technological innovations to make significant headway toward getting us within range of our goals. In the end, while we can put forth the best infrastructure investments and pursue pricing, land-use and technology advances over the long term, a substantial shift in the behaviors and choices that individuals make on a daily basis also is needed to attain our goals.



## Three Es Guide Transportation 2035 Vision

The anchors of the Transportation 2035 vision are the Three E principles of sustainability — a prosperous and globally competitive **economy**, a healthy and safe **environment**, and **equity** wherein all Bay Area residents share in the benefits of a well-maintained, efficient and connected regional transportation system. These Three E principles frame the following eight individual goals for this plan.

- **Maintenance and Safety**
- **Reliability**
- **Efficient Freight Travel**
- **Security and Emergency Management**
- **Clean Air**
- **Climate Protection**
- **Equitable Access**
- **Livable Communities**

The goals set direction for the future, measure progress, and evaluate transportation projects and programs needed to maintain the system, improve system efficiency and strategically expand the system. The plan goals are not entirely confined to any one of the Three Es; rather, several goals cut across and reinforce all three principles.

"E" Principle	Goal	Performance Objective
Economy	Maintenance and Safety	Improve Condition of Assets Reduce Collisions and Fatalities
	Reliability	Reduce Delay
	Efficient Freight Travel	
	Security and Emergency Management	Reduce Security Vulnerability Improve Emergency Preparedness
Environment	Clean Air	Reduce Vehicle Travel
	Climate Protection	Reduce Emissions
Equity	Equitable Access	Improve Affordability
	Livable Communities	

Raising the bar, the Commission also established a set of performance objectives that further support the Three Es and the plan goals. These performance objectives are numerical benchmarks to measure the region's progress in carrying out the vision. These targets are aimed at reducing vehicle miles traveled, congestion, carbon dioxide and particulate matter emissions, and collisions/fatalities; decreasing the transportation and housing costs of low-income families; and improving maintenance and security.

The Commission will periodically measure progress made toward the performance objectives, and may consider changes, substitution or deletion of the performance objective(s) to better align with Commission policy or respond to new circumstances. The assessment of the performance objectives will occur as part of the region's "State of the System" report and as part of each update of the long-range plan. (See Chapter 2 for more information on Transportation 2035 performance objectives.)

## Directing Change: Transportation 2035 Investments

Embracing the Three Es of sustainability and the growing regional emphasis on focused growth, air quality and climate protection gave us a lens through which to evaluate the policies, investments and actions in the Transportation 2035 Plan. MTC and its partners looked ahead to determine the kinds of changes needed to shape our future and the ways we can direct those changes. Here are highlights of the changes put forth in this plan and detailed in Chapter 4, “Investments.”

### Keep Our System in a State of Good Repair

Our transit and roadway systems are an integral part of the Bay Area’s transportation network and represent a huge investment of public resources. This plan not only reaffirms the region’s long-standing “fix it first” maintenance policy but also expands our commitment to maintaining and operating our existing local roadway and transit systems. The Transportation 2035 Plan directs \$7 billion in discretionary funds to maintain local roadways at current pavement conditions, and \$6.4 billion to close funding shortfalls for the highest-rated transit assets.

“Transportation is the largest source of air pollution and greenhouse gases in the Bay Area. To protect public health and protect the climate, we need to make better use of our transit systems, and we need to build and create livable communities that reduce our dependence on the automobile.”

Jack Broadbent, Executive Officer, Bay Area Air Quality Management District



### Lead the Charge on Climate Protection

Climate change is expected to significantly affect the Bay Area’s transportation infrastructure through sea level rise and extreme weather. The transportation sector’s adverse contribution to climate change is primarily through greenhouse gas emissions from cars, trucks, buses, trains and ferries. Our transportation decisions and actions can either help or hinder efforts to protect the climate, and to this end, the Commission has set aside \$400 million to implement a Transportation Climate Action Campaign that focuses on individual actions, public-private partnerships, and incentives and grants for innovative climate strategies. Known for its commitment to the environment, the Bay Area is ideally suited to provide regional leadership and serve as a model for California, the nation and the world in our efforts to reduce our carbon footprint. This plan advances



the fight against global warming and validates the region's reputation as a forward-looking force for change.

### Maximize System Performance Through Technology

The state highway system carries an overwhelming majority of trips in the Bay Area. The Freeway Performance Initiative (FPI), launched by MTC, Caltrans and partner agencies, is a strategic plan for improving the operations, safety and management of major freeway travel corridors in the region. FPI aims to maximize the efficiency and reliability of the freeways through technology applications such as traffic operations systems and ramp meters, while limiting freeway expansion to only the most essential locations. The Transportation 2035 Plan earmarks \$1.6 billion for the full deployment and ongoing maintenance of low-cost, high-tech strategies defined by FPI. In addition, MTC continues its commitment to the tune of \$1.1 billion to support innovative, customer-oriented operational programs such as the telephone- and Web-based 511 traveler information system and the TransLink® transit-fare smart card.

### Price Highway Travel Demand

Although commonly employed by airlines, utility companies and others, using price to avoid peak-period overload is the exception in surface transportation policy. As demon-

strated by successful implementation in several U.S. cities, high-occupancy toll (HOT) lanes — which allow non-carpool drivers to pay a toll to access underutilized carpool lanes — can bring real benefits to Bay Area travelers. HOT lanes, often called express lanes, provide travel options for carpools, express buses and toll payers; they allow for more efficient use of freeway capacity; and they generate revenues for other highway and transit improvements. MTC in its capacity as the Bay Area Toll Authority, county-level congestion management agencies, Caltrans and the California Highway Patrol have agreed to a set of principles to guide the implementation of an 800-mile Bay Area Express Lane Network, which this plan establishes. The principles represent a commitment to pursue development of this new network through a collaborative and cooperative process. The Bay Area Express Lane Network has the potential to generate about \$6 billion in net toll revenues over the next 25 years. These funds would be available to finance additional improvements in the express lane corridors.

### Provide Equitable Access to Mobility

The quality of transportation available affects people's ability to get to where they need to go and their overall quality of life. In particular, ensuring accessibility and expanding mobility for those whose options are limited due to age, disability or income is paramount. MTC's Lifeline Transportation Program, which funds

## Investing in Change

Over the 25-year time span of this long-range plan, MTC estimates that \$218 billion from all public funding sources will be spent on transportation in the Bay Area. Transportation 2035 sets change in motion with \$32 billion of new investments — fresh ideas, clever innovations and bold initiatives that will improve travel in the region and overall quality of life. Key Transportation 2035 investments that fit this bill include:

- Freeway Performance Initiative  
**\$ 1.6 billion**
- Bay Area Express Lane Network  
**\$ 7.6 billion** (funded by toll revenues)
- Transportation Climate Action Campaign  
**\$ 400 million**
- Transportation for Livable Communities  
**\$ 2.2 billion**
- Regional Bicycle Program  
**\$ 1 billion**
- Lifeline Transportation Program  
**\$ 400 million**

The Commission also is making multibillion dollar investments to maintain and expand our transit systems, and to keep our roadways in a state of good repair. As well, Transportation 2035 responds to environmental and land-use changes, and maximizes mobility and accessibility for all transportation users. For details, see Chapter 4, "Investments."

mobility projects for the region's low-income residents, has recently experienced a substantial influx of federal and state funds. The Transportation 2035 Plan commits an additional \$400 million toward providing transportation options for low-income communities.

### Keep Walking and Rolling

Walking and bicycling are important means of mobility and good indicators of the health and well-being of people and communities. It's no wonder that "One Less Car" has been the motto for avid cyclists for years, and the relevance of

this message rings loudly given growing concerns about air quality, greenhouse gas emissions, childhood obesity and diabetes, and fluctuating gas prices. The Transportation 2035 Plan endorses these "active transportation" modes by putting \$1 billion towards the full build-out of the Regional Bikeway Network, and supporting the Safe Routes to Schools and Safe Routes to Transit programs embedded in a new Transportation Climate Action Campaign (see page 14). Further, MTC's Transportation for Livable Communities program will continue to fund bicycle and pedestrian access improvements.



### Take Bold Steps Toward Focused Growth

Over the past several years, the Bay Area has taken big steps to address current and future population and job growth, and as a result, our region is steadily moving toward a more compact, sustainable land-use pattern. Most recently, the four partner regional agencies — MTC, the Association for Bay Area Governments, the Bay Area Air Quality Management District, and the Bay Conservation and Development Commission — launched the incentive-based FOCUS regional development and conservation initiative as a way to encourage more housing adjacent to transit and to protect our green spaces.

FOCUS Priority Development Areas (PDAs), in particular, serve as a mechanism to gain local government buy-in to pursue focused growth near transit nodes in their communities. FOCUS provides funding support via incentives such as capital infrastructure funds, planning grants and technical assistance to these communities because they will bear the lion's share of the region's future growth. In this Transportation 2035 Plan, MTC doubles the size of its hallmark Transportation for Livable Communities program, to \$2.2 billion over the next 25 years, in order to advance focused growth objectives and support PDAs.



## Deliver the Next Generation of Transit

Adopted in 2001, MTC Resolution 3434 represents the Bay Area's next generation of bus, rail and ferry service expansion to all reaches of the region. The 140 new route miles of rail, hundreds of new route miles of express bus services, numerous ferry routes crisscrossing the Bay, and major new transit hubs in San Francisco and San Jose directly respond to the travel demands of a growing region. Further, the Commission's 2005 adoption of the Resolution 3434 Transit-Oriented Development (TOD) Policy helps to maximize the effectiveness and value of regional services by conditioning discretionary funds on transit-supportive land uses. In fact, the TOD policy will help stimulate the construction of at least 42,000 new housing units and boost the region's overall transit ridership by over 50 percent by 2035. As detailed in the Resolution 3434 Strategic Plan approved by the Commission in fall 2008, the Bay Area is committed to delivering the first elements of this \$18 billion regional transit expansion program within the next decade.

## Putting Future Change in Motion

And yet, for all it does, the Transportation 2035 Plan still comes up short of the mark. As our detailed evaluation of plan investments makes painfully clear (see Chapter 2), meeting our



ambitious performance objectives will take more than the \$218 billion in infrastructure investments and the bold new policies and initiatives that Transportation 2035 delivers. This plan is but a beginning. Further actions — involving policies, operating initiatives, institutional arrangements, additional revenues and new legal authority — must be taken to move the Bay Area further along the path to change. We have identified the most pressing and the most promising next steps in Chapter 5, “Building Momentum for Change.”

But changes beyond the readily foreseeable are also needed, and for these we look first to technology. For example, future, as yet-undiscovered technological improvements, such as alternative fuels, cleaner vehicles and improved emission-control systems, can help us make strides to meet greenhouse gas and air quality standards. Great safety improvements can be realized with the introduction of vehicle-to-vehicle and vehicle-to-roadside technologies, and these are now in the development pipeline. It is optimistic but not unreasonable — especially in the Bay Area, the center of so much

## Bay Area Public Drives Mandate for Change

Nearly 6,000 Bay Area residents from all walks of life helped shape the Transportation 2035 Plan. Their message, delivered resoundingly, was clear: Our world is changing and we must change, too!

This call for new direction began in June 2007 with preliminary workshops on overall goals for the Transportation 2035 Plan. The dialogue continued in the fall, when MTC and the Association for Bay Area Governments sponsored a joint regional land-use and transportation forum in Oakland that drew 700 attendees. Over the course of the next 18 months, MTC reached out to its regional constituents by means of numerous public workshops and focus groups, two statistically valid telephone polls (conducted in three languages), interactive Web surveys, “person on the street” interviews, and via in-depth discussions with members of MTC’s three citizen advisory committees and the Bay Area Partnership.

The people of the Bay Area delivered transportation planners an unmistakable mandate for change, embodied in messages such as the following:

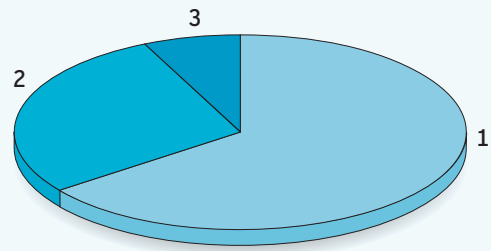
- **We are concerned about air quality and climate change.** To reduce greenhouse gas emissions and protect public health, the



Bay Area should focus on decreasing tailpipe emissions and encourage alternatives to driving. In a fall 2007 telephone poll of 1,800 residents, approximately two-thirds of respondents declared that global warming is extremely important and should be one of the region's highest priorities (see pie chart at top left, page 19). Additionally, 67 percent of poll respondents said they would be willing to accept denser development in their community to maintain or improve the environment.

- **Give us transit options.** In polling and at public forums, we were told that the region's top priority for future mobility should be to invest in transit options — including rail and bus service — to provide an alternative to driving. People expressed a desire for more accessible and affordable public transit, and for a larger, more-efficient network of bus, rail and ferry routes. A number of workshop participants called for more projects to encourage bicycling and walking as well.

### Importance of Global Warming



	Percent of Total
1 Extremely Important	65%
2 Somewhat Important	28%
3 Not Important	7%
<b>Total</b>	<b>100%</b>

Fall 2007; 1,800 residents

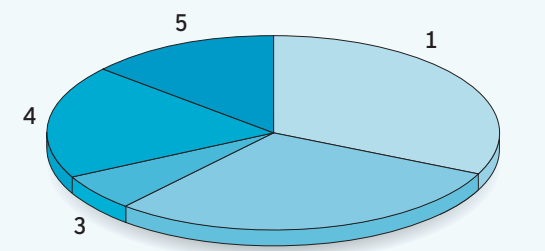
Sources: MTC; BW Research

- **Support transit-oriented development.** There was consensus for concentrating development in areas near transit. Opinions were mixed, however, on whether cities that are willing to take on more housing should be rewarded with more transportation dollars, or whether these investments should be spread more evenly around the Bay Area. Respondents to the fall 2007 poll indicated a preference for a smaller home and short commute over a larger home and a long commute (74 percent to 19 percent).

- **Improve what we already have.** In polls and public meetings, people often embraced a “fix it first” approach to transportation priorities. Rather than funding new freeways and expanding transit services, investments should focus on making the Bay Area’s existing freeways, local roads and transit operations run more efficiently.
- **Support market incentives in transportation pricing.** Bay Area voters largely accept the concept of using market-based pricing to manage demand for freeway carpool lanes, according to results of a poll of 3,600 voters conducted in the spring of 2008. A solid majority (62 percent) of poll respondents expressed support for establishing high-occupancy toll (HOT) lanes on area freeways. (See pie chart to right.) However, if transportation pricing were to be implemented in the Bay Area, poll respondents called for actions to address any undue hardships on low-income drivers.

For a complete summary of Transportation 2035 public involvement efforts, please refer to the *Public Outreach and Involvement Program Report*, as described in Appendix 2.

### Support for HOT Lanes



	Percent of Total
1 Probably Support	32%
2 Definitely Support	30%
3 Don't Know/No Answer	6%
4 Definitely Oppose	19%
5 Probably Oppose	14%
<b>Total</b>	<b>100%</b>

Spring 2008; 3,600 voters  
Percents do not sum to Total due to rounding.

Sources: MTC; BW Research



“In spirit, this plan is guided by the Three Es — Economy, Equity, Environment. In practice, it was shaped by the Three Cs — Convergence, Collaboration and Consensus. The convergence of issues, especially climate change, higher energy costs and focused growth, gave us our momentum. The unprecedented collaboration of the four major regional agencies widened our vision. And the broad consensus for change among many constituencies emboldened our actions. These are the secret ingredients of change in motion.”

Steve Heminger, Executive Director, Metropolitan Transportation Commission



innovation — to look to technological progress as a key ally in the quest for better transportation performance. We think it will play a vital role.

Longer term, we look to the residents of the Bay Area for the kinds of changes in behavior — driving less, taking transit more often, living closer to work, and biking or walking when it makes sense — that can help the region reach the goals and performance objectives set out in this plan. As a region and a nation, we know that an awakened public can attempt and achieve dramatic behavioral change once the scope of a problem is known and well-recognized, and when the way forward is clear. The success of the campaign against smoking and the widespread acceptance and active practice of trash recycling are but two examples of how growing public awareness can lead to a commitment to change — with sweeping, society-wide shifts in behavior. We also place our hope in this phenomenon. Here, in the collective impact of individual actions multiplied 7 million times over, lies the true promise for “change in motion” for the Bay Area.

# Trends and Performance 2

CHANGE IN MOTION

“Trend is not destiny.”

LEWIS MUMFORD







# Trends and Performance

How well our transportation system performs directly affects the day-to-day mobility of people and goods, and on a macro scale, shapes the Bay Area's economic vitality, growth patterns and quality of life. For Transportation 2035, performance is the driving force for change in the way we formulate our policies, define our priorities, and decide on our transportation investments. Using performance metrics allows us to assess current and projected trends, and affords us the opportunity to change our course should our analyses foretell trends that take us in the opposite direction from where we want to be in 2035.

The Transportation 2035 Plan embraces performance, beginning with the identification of a set of highly specific performance objectives against which to evaluate prospective investments. Though they are planning goals rather than strict legal mandates, the performance objectives nonetheless help translate the plan's Three E principles — Economy, Environment and Equity — into an integrated set of policy choices to make our region more dynamic, more livable and more sustainable.

## Snapshot of the Bay Area in 2035

Before we determine whether the Bay Area can meet the plan's aggressive performance objectives, we must look first at our existing growth and travel conditions, and then use the latest planning assumptions to forecast what future growth and travel trends might look like in 2035. This helps us to establish future baseline conditions if no new investments are made and no new policies adopted. These trends, which are based on past performance, show us what our future might look like if we do not take action to change our direction. Highlights of the key 2035 trends, absent any interventions, are discussed in the following pages. (See chart on page 23 for a comparative look at many of those trends).



Currently under construction, the new East Span of the San Francisco-Oakland Bay Bridge will open to traffic in 2013.

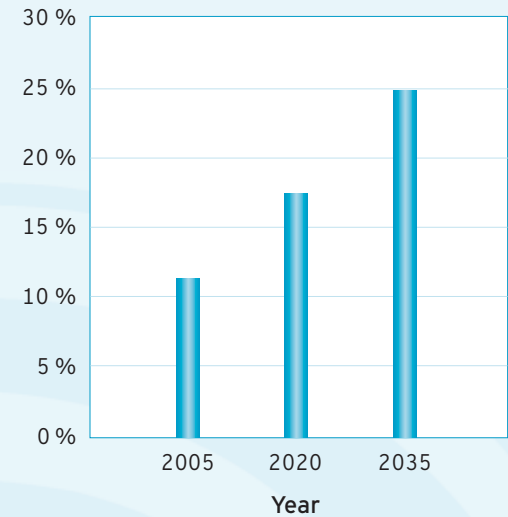
### More People, More Jobs

Today, the Bay Area is home to just over 7 million people, and supplies nearly 3.5 million jobs — making our region California's second-largest population and economic center. Between now and 2035, job growth will increase nearly 1.7 percent a year, outpacing the rate of population growth over the same period. The Bay Area will grow to 9 million people by 2035, a 26 percent increase from 2006, or an average of 0.9 percent growth a year. Employment will grow to 5.2 million jobs by 2035, a 50 percent increase from 2006. With more people and more jobs in the region, our local roads, highways and transit systems will face unprecedented demand in the years ahead.

### Population Grows Older

The Bay Area population also is growing older. In 2005, about 11 percent of Bay Area residents were age 65 or older. But by 2035, 25 percent of the population will be 65 or older (see chart above right). Furthermore, the number of people over age 85 will nearly triple by 2035. More members of the older population will be active in the workforce in 2035, and more are likely to be living in urban areas, where services are clustered and public transportation is available. As the population ages, there will be greater demand for paratransit and specialized mobility services.

### Share of Bay Area Population Age 65 or Older



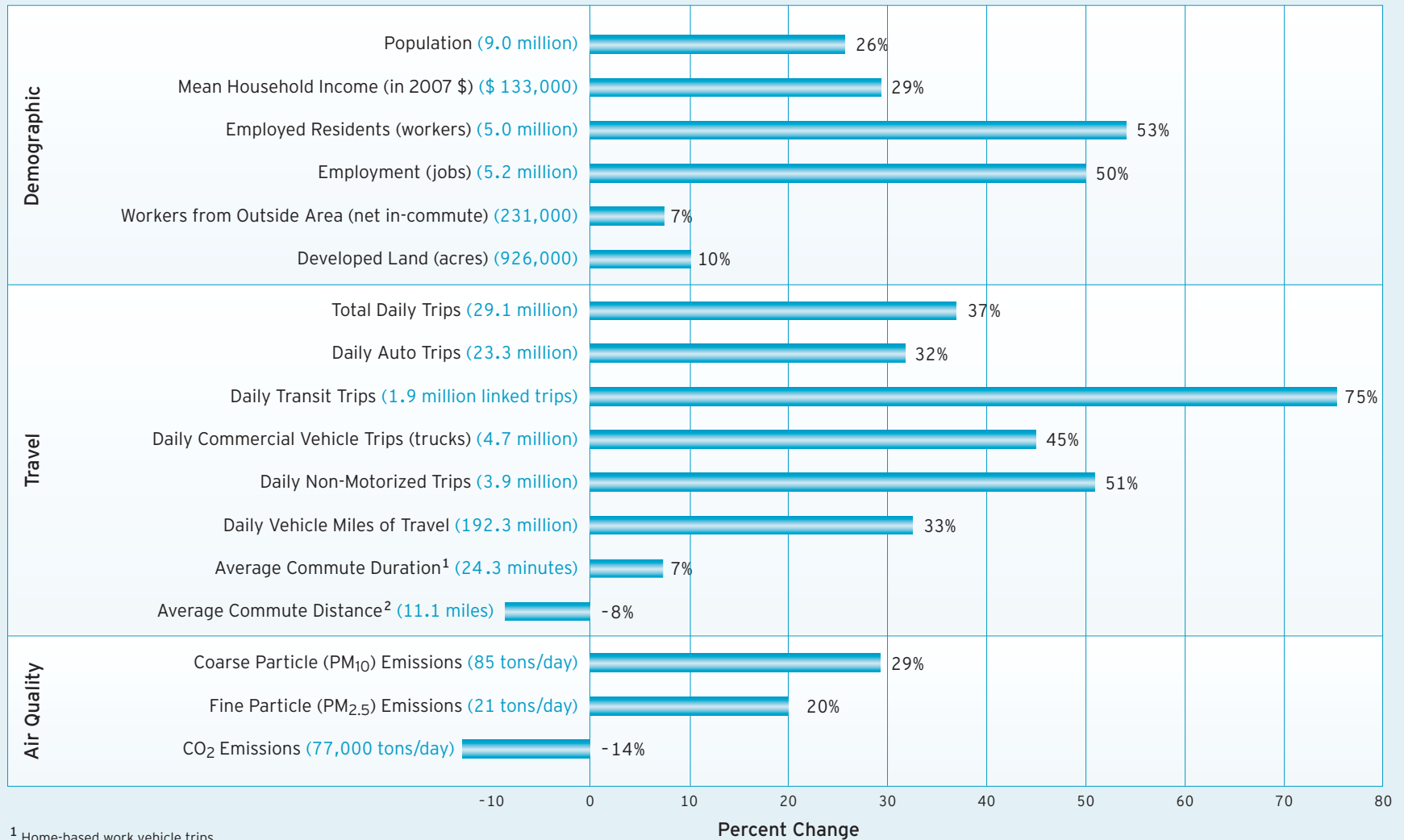
Source: ABAG, Projections 2007

### Transportation Affordability Favors Urban Residents

Average household income in the Bay Area will rise in real terms from \$103,000 in 2006 to \$133,000 in 2035, a 29 percent increase. However, transportation affordability for low- and moderately low-income households will remain unchanged in 2035. Transportation costs as a share of income for low- and moderately low-income households will decrease slightly by 2035, from 22 percent to 21.5 percent. This may be more the result of incomes rising than

## Regional Demographic, Travel and Air Quality Indicators

Bay Area Total in 2035 (future conditions, without Transportation 2035 Plan) and Percent Change From 2006



<sup>1</sup> Home-based work vehicle trips

<sup>2</sup> Home-based work vehicle driver miles

Sources: MTC; ABAG, Projections 2007

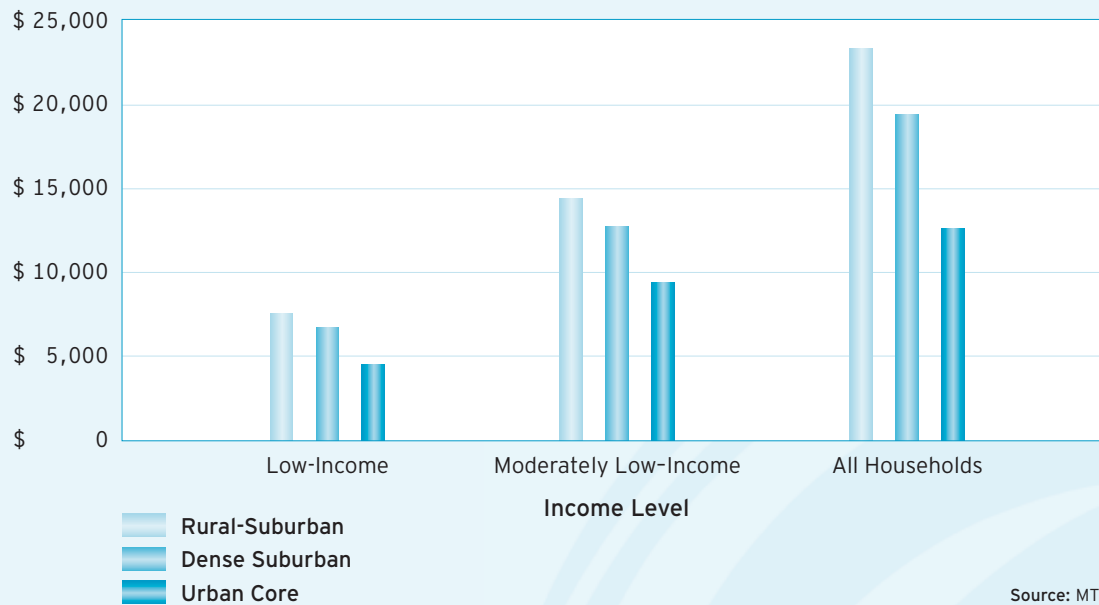
transportation costs decreasing. Also contributing to lower transportation costs is a predicted drop in the number of vehicles per household from 1.4 today to 1.3 in 2035.

Land use exerts a powerful influence on the affordability of transportation. Total annual transportation costs for all households will be lower for those closer to the urban core (as shown in the chart to the right). This is true for all income levels, including the low-income and moderately low-income segments of the population (as shown). By living close to jobs and essential services, households can significantly reduce their annual transportation costs, demonstrating the economic benefits of more compact growth patterns.

## More Travel, More Congestion

Travel activity as reflected by daily auto trips would increase by 32 percent and the amount of vehicle miles traveled would grow by 33 percent. Both are slightly higher than the rate of population increase, but lower than the expected rate of employment growth. Daily hours of vehicle delay would increase by 135 percent, which would boost average daily delay per vehicle to 4.6 minutes (from 2.7 minutes today). Daily transit trips would grow by 75 percent, reflecting assumptions that new population and employment growth will be more focused in the urban core and along transit corridors (see chart on page 23).

**Projected Annual Household Transportation Costs in 2035**



## A Mixed Forecast for Air Quality

Air quality conditions will change in the future — ground-level ozone and greenhouse gas emissions will decrease, but particulate matter will increase by 2035. Emissions of the precursors to ozone — reactive organic gases and nitrogen oxides — will decrease by 71 percent and 79 percent, respectively, due largely to cleaner vehicle engines and fuels and reduced emissions from industrial and commercial sources.

Carbon dioxide emissions are projected to decrease by 14 percent as vehicle and fuel technologies improve due to stricter state and federal mandates, as older fleets turn over, and as individual attitudes and travel behaviors change (see chart on page 23). However, as population grows and miles driven increases, particulate matter emissions from tailpipes and road dust also will rise, with a 20 percent increase for finer particles (PM<sub>2.5</sub>) and a 29 percent increase from coarser particles (PM<sub>10</sub>) in the forecast.



## Projecting Regional Growth

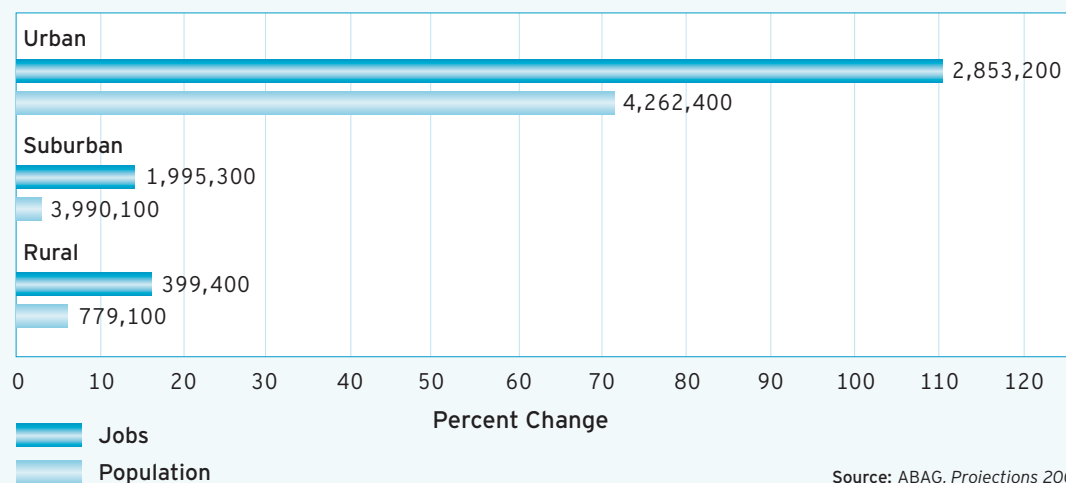
As with past long-range transportation plans, the Transportation 2035 Plan uses the economic-demographic forecasts produced by the Association of Bay Area Governments (ABAG). The forecast current at the time of development of this plan was ABAG's *Projections 2007*.

*Projections 2007* was designed to be a realistic assessment of growth in the region, recognizing emerging trends in markets, demographics and local policies that promote more compact infill development and transit-oriented development. Areas at rail and ferry terminals and along select transportation corridors are expected to see an increasing proportion of the region's growth, a trend that will start slowly but will build over time.

The emphasis on performance in the Transportation 2035 Plan has influenced how future long-range growth forecasts will be prepared. Already, in its *Projections 2009* forecast (adopted in spring 2009), ABAG has identified performance metrics, similar to the ones adopted in this plan, and tested development scenarios to gauge the magnitude of change required to achieve regional targets. Future long-range forecasts and demographic projections will build on this approach.

### Jobs and Population Forecasts by Geographical Area

Bay Area Total in 2035 and Percent Change From 2005



Source: ABAG, *Projections 2007*



## Transportation 2035 Performance Objectives

### Three Es

#### Economy

Reduce per-capita delay by 20 percent from today by 2035

#### Improve Maintenance

- Maintain pavement condition index (PCI) of 75 or greater for local streets and roads
- Distressed pavement condition lane-miles not to exceed 10 percent of total state highway system
- Achieve an average age for all transit asset types that is no more than 50 percent of their useful life
- Increase the average number of miles between service calls for transit service in the region to 8,000 miles

#### Reduce Collisions/Fatalities

- Reduce fatalities from motor vehicle collisions by 15 percent from today by 2035
- Reduce bicycle and pedestrian *fatalities* attributed to motor vehicle collisions by 25 percent (each) from 2000 by 2035
- Reduce bicycle and pedestrian *injuries* attributed to motor vehicle collisions by 25 percent (each) from 2000 by 2035

#### Improve Regional Transportation Emergency Preparedness

- Conduct regional transportation exercise that tests emergency response and coordination capabilities for special needs populations
- Improve the seismic safety of high-priority transportation facilities

- Increase the number of transportation agency employees trained in security/emergency awareness protocols

#### Reduce Vulnerability to Transportation Security Threats

- Increase the number of transportation agency employees trained in security/emergency awareness protocols
- Enhance or install critical infrastructure detection equipment on high-priority transportation facilities

#### Environment

Reduce daily per-capita vehicle miles traveled (VMT) by 10 percent from today by 2035

#### Reduce Emissions

- Reduce emissions of fine particulates (PM<sub>2.5</sub>) by 10 percent from today by 2035
- Reduce emissions of coarse particulates (PM<sub>10</sub>) by 45 percent from today by 2035
- Reduce carbon dioxide (CO<sub>2</sub>) emissions to 40 percent below 1990 levels by 2035

#### Equity

Decrease by 10 percent the combined share of low-income and lower-middle-income residents' household income consumed by transportation and housing

## Making Performance The Objective

These trends sketch a statistical picture of the Bay Area in the year 2035. It is not a complete picture, but it does offer a baseline against which to assess how the policies, investments and planning decisions made in this plan may affect the future. In this vein, the Transportation 2035 Plan explicitly employs a performance-based approach, one that focuses on measurable outcomes of potential investments and the degree to which they support stated policies. In early 2008, the Commission adopted a comprehensive set of performance objectives for the plan (see page 26).

So how will investments embodied in the Transportation 2035 Plan — \$218 billion worth — improve the performance of the transportation network for Bay Area travelers? To answer this question, MTC planners conducted a three-part performance assessment to help inform and evaluate investment decisions. During the fall 2007 visioning phase of plan development, we used performance metrics to test “what if” scenarios consisting of two distinct sets of strategies: 1) a set of three infrastructure packages; and 2) aggressive pricing and land-use policies which, if adopted without modification, would dramatically raise the cost of operating a private

vehicle and would concentrate most future population growth near transit and in already-developed parts of the region. In spring 2008, we then conducted a project-level assessment of over 700 candidate projects to ascertain how they measured up in terms of cost-effectiveness and goals achievement. As a final step in fall 2008, we evaluated how the plan’s investment decisions (detailed in Chapter 4 and listed as projects in Appendix 1) would meet the Transportation 2035 performance objectives. The results of this final test are presented in the following section. (See the *Performance Assessment Report*, listed in Appendix 2, for complete information about the performance evaluations and results.)

## Putting the Plan to the Test

In testing the performance of the Transportation 2035 Plan, we must ask two key questions:

- 1) How far does the plan advance the region toward meeting its ambitious targets?
- 2) How big are the remaining performance gaps that we must fill?

MTC planners tested the plan investments as a group by means of a computer model, then compared results to the long-term trends projected for given measures of performance (such as greenhouse gas emissions), and to other Transportation 2035 performance objectives.

For illustrative purposes, we present here results of how the Transportation 2035 Plan performed against several key performance objectives:

- reduce per-capita delay
- improve maintenance for transit and local roadways
- reduce fine particulate emissions
- reduce carbon dioxide emissions
- reduce vehicle miles traveled

## Strategic Investments Help Reduce Congestion

The Transportation 2035 Plan will help reduce freeway delay per person from a projected 72 hours a year to 47 hours a year. This is largely a result of the plan’s investment in the Freeway Performance Initiative (FPI). FPI strategies such as freeway ramp metering, changeable freeway message signs and coordination of traffic signals along adjacent arterials can significantly reduce delay. The planned Bay Area Express Lane Network and new transit capacity also will play a role. Yet the impressive reduction in delay that these investments achieve still falls short of the performance objective to reduce congestion to 31 hours per person per year (see chart top left on page 29).

## Local Roadway Investment Maintains Status Quo, Slows Downward Slide

The performance objective chosen for local roadway maintenance — to reduce to 13 percent the share of local roadways in poor or failed condition — represents a practical target to improve the condition of our roads over the next 25 years. While it does not represent an optimal state of good repair for the region's roadways, the objective was deemed achievable as an interim step. Faced with competing needs for available revenues, the Commission elected to direct \$7 billion in discretionary funds to local roadways (see Chapter 4 for details). This amount will only allow us to maintain the current state of repair, at which about 22 percent of local roadways are in poor or failed condition (see page 29, top center).

## Transit Investment Fails to Hold the Line Against Aging Assets

The Bay Area's transit assets include transit vehicles, railway tracks, stations and maintenance facilities. The current average age of these assets is estimated to be 74 percent of useful life. If all assets were replaced on schedule at the end of their useful lives, over time the average age of all assets would fall to 50 percent of useful life. Therefore, the 74 percent figure means that the region is not replacing its assets fast enough, and assets remain in service well after they should be replaced.

The Commission committed \$6.4 billion in discretionary funds to the transit maintenance program, which will allow the region to replace all of its transit vehicles on time, but is not sufficient to replace other types of transit assets on schedule (see Chapter 4 for details). Replacement of assets such as stations, maintenance facilities and service vehicles will be deferred, requiring increasingly expensive maintenance and repairs, and potentially reducing system reliability and performance. The average age of all of the region's assets combined will continue to increase, reaching an estimated 100 percent of useful life by 2035. This is an improvement over the prevailing trend (see page 29, top right), but the result falls far short of the Transportation 2035 performance objective.

## Particulate Emissions Remain High

Of all the Transportation 2035 performance objectives, the reduction of particulate emissions will be the most difficult to achieve. Particulate levels are a direct function of the amount of driving, with road dust kicked up by moving vehicles accounting for 60 to 80 percent of particulate emissions from mobile sources. Under the current trend, fine particulate (PM<sub>2.5</sub>) emissions will grow to 21 tons per day by 2035 from 17 tons per day in 2006. Given a quarter-century of continued population growth, infrastructure investments will not decrease total miles driven enough to make a significant dent in particulate emissions. The

Transportation 2035 Plan reduces PM<sub>2.5</sub> by about one ton per day, resulting in one-fifth of the reduction needed to reach the target (see page 29, bottom left).

## Plan Nudges Carbon Dioxide Emissions in Right Direction

The future trend for transportation-related carbon dioxide emissions is expected to move in the right direction, though largely due to advances in vehicle technologies and fuels mandated by state laws rather than infrastructure investments. For its part, the Transportation 2035 Plan is projected to decrease daily carbon dioxide emissions from 77,000 tons per day to 76,000 tons per day — just a 2 percent reduction compared to the prevailing trend (see page 29, bottom center). This small reduction is due largely to the fact that 81 percent of all resources in the plan are devoted to operating and maintaining the existing transportation network — which neither worsens nor improves the Bay Area's carbon footprint. The bottom line is the Transportation 2035 Plan falls well short of the 35 percent reduction that would be needed to reach the objective of 50,000 tons per day.

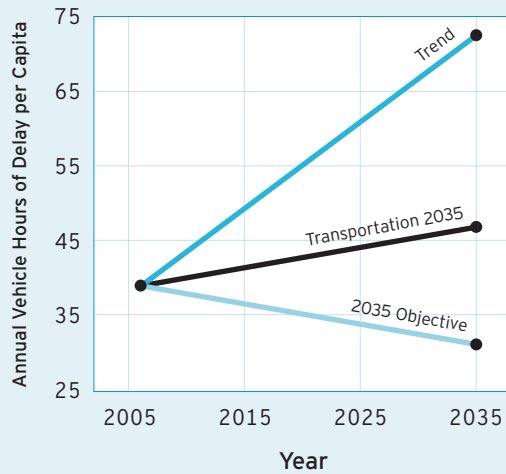
## Plan Barely Makes a Dent in Reducing Miles Driven

The Bay Area's very dynamism, as measured by projected growth in both population and jobs, poses a daunting challenge when it comes to

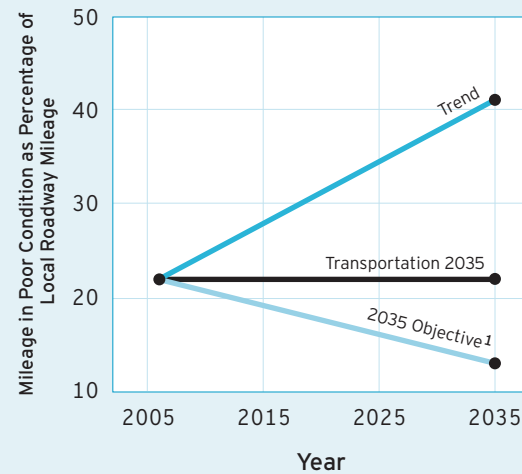


# Putting the Plan to the Test

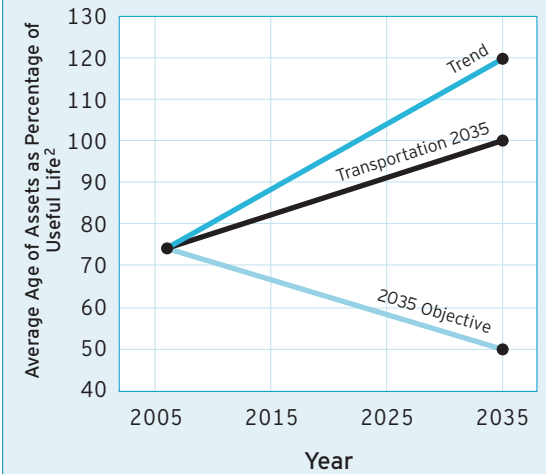
## Vehicle Hours of Delay



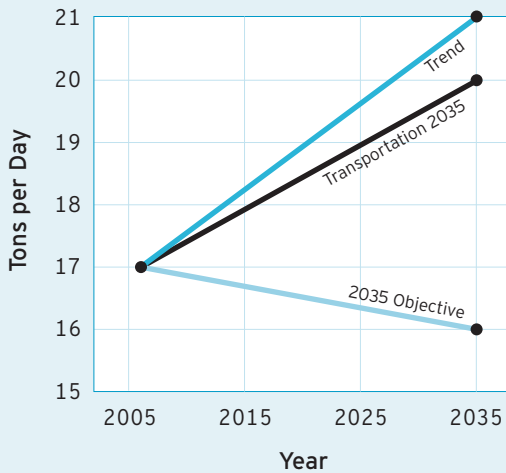
## Local Streets and Roads



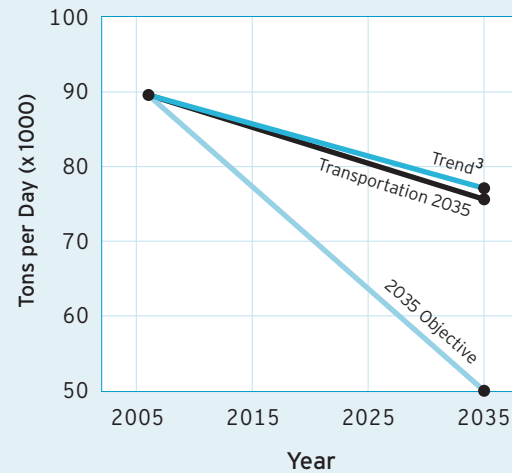
## Transit Maintenance



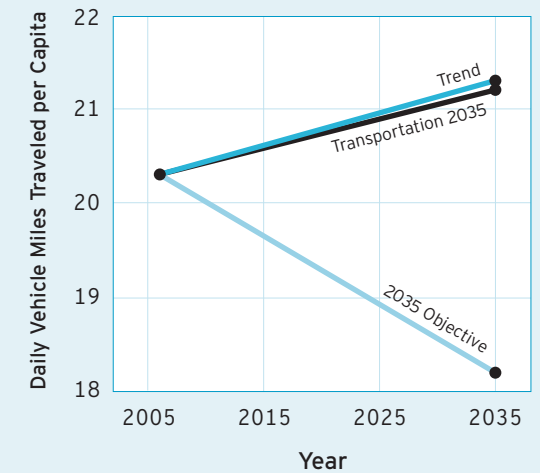
## PM<sub>2.5</sub> Tons Per Day



## Carbon Dioxide (CO<sub>2</sub>) Emissions



## Vehicle Miles Traveled



Source: MTC

<sup>1</sup> Decrease mileage in poor condition to no more than 13 percent. This is equivalent to the adopted objective to increase the average pavement condition index to 76.

<sup>2</sup> Includes all asset types.

<sup>3</sup> Trend line from 2006 to 2035 is simplified. Passenger and light-duty vehicle fuel economy improvements required by AB 32 are phased in between 2009 and 2020. CO<sub>2</sub> will continue to increase until about 2010, with a gradual decrease to 2035 as AB 1493 standards phase in and the existing vehicle fleet turns over with cleaner vehicles.

reducing the number of miles driven by vehicles in the region. As shown in the bottom right chart on page 29, the Transportation 2035 Plan makes only a negligible difference in this area, reducing daily vehicle miles traveled per person from 21.3 to 21.2. This is not within the reach of the objective of 18.2 vehicle miles per person. This result would seem to show the limitations of infrastructure improvements as a means to attain this particular objective.

## Results Show No Easy Answers

Assessing the performance objectives in light of future baseline conditions in 2035 and the palette of Transportation 2035 investment and policy strategies, we see that the challenges before us are sobering. While the targets call for dramatic improvements over the status quo, most of the trend lines indicate conditions will worsen significantly over the next 25 years. And while large-scale infrastructure investment and aggressive policy choices can move the Bay Area closer to some of the plan's long-term goals, others remain stubbornly out of reach.

But where earlier plans sought merely to slow the rate of our transportation network's deterioration, the Transportation 2035 Plan does dare to imagine actually reversing these trends.

Within the constraints of this Transportation 2035 Plan, the Commission does indeed begin

to take a number of bold steps towards change. These include doubling the Transportation for Livable Communities program that will support focused growth, and building the Bay Area Express Lane Network as a way to introduce road pricing at a regional scale. To reduce delay and traffic congestion, MTC, Caltrans and other partners will implement a new Freeway Performance Initiative. To encourage more walking, bicycling and transit use, the Commission reaffirms its commitment to deliver the Resolution 3434 Regional Transit Expansion Program and the Regional Bikeway Network. Perhaps no investment recognizes the need for a multifaceted effort better than the multiagency Transportation Climate Action Campaign, which encourages behavior changes and funds innovative projects such as the Safe Routes to Schools and the Safe Routes to Transit programs.

As we move to implement these Transportation 2035 programs — and as we strive to fashion new initiatives in the years ahead — we must keep in mind the results of the comprehensive performance assessment work conducted for this plan. The lessons learned from this analysis are as follows:

### Limits of Infrastructure

Infrastructure improvements alone, whether substantial investments in transit or roadways, will not move the region significantly closer to the goals.

### Power of Pricing and Land Use

Policy approaches, such as the pricing and land-use alternatives tested initially, have a much bigger effect and will be critical to advancing toward the objectives. But while pricing strategies (though likely at lower price levels than those assumed in our analysis) could be implemented in the near term, aggressive land-use policies would likely take longer to win local approval. And the benefits of land-use changes would not be realized until some years after implementation.

### Need for Technology and Behavior Change

Yet even the combination of infrastructure investment and aggressive policy choices would be insufficient to meet many of the region's long-term goals, particularly those involving greenhouse gas and particulate emissions. To reach all the objectives, additional strategies will be necessary in most cases. These could include technology advances to improve fuel economy, incentives or regulations to increase telecommuting, and other steps to reduce overall driving. The Bay Area certainly will have to forge new patterns of growth, embrace new ways of traveling, and discard many old assumptions if we are to sustain the region's economic vitality, maintain our mobility and preserve our quality of life. Our analysis clearly demonstrates that while change is healthy, it can be painful too.

# CHANGE IN MOTION



“Change is the law of life, and those who look only to the past or present are certain to miss the future.”

JOHN F. KENNEDY





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# Finances

Predicting the financial future is a difficult and rather speculative exercise, even in the most placid of periods. This point needs no underscoring today, in the wake of the serious financial crisis that started on Wall Street and spread to markets all around the globe during the fall of 2008. Still, one of the core functions of a long-range plan is to forecast how much money will be available to support the region's surface transportation investments over the next 25 years. In doing this, planners must “financially constrain” the plan, to ensure that the program of projects adopted will not exceed reasonably foreseeable future revenues. For this Transportation 2035 Plan, MTC's financial model takes a realistic approach. We contacted partner agencies for the latest estimates of local funds, examined historical growth trends of traditional and nontraditional revenue sources, and performed retrospective analyses of predecessor long-range plans to fine-tune our financial assumptions.

The nuts and bolts of the financial forecasts and plan expenditures are detailed in this chapter. However, the actual investment decisions made by the Commission to support pressing maintenance, system efficiency and expansion needs are presented in the “Investments” chapter, which follows this one.

## Financial Assumptions

In the 1990s, two landmark bills — the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA 21, enacted in 1998) — helped reshape the federal surface transportation program to meet the nation's changing transportation needs. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA), signed into law in 2005, builds on this firm foundation, supplying the funds and refining the framework for investments needed to maintain and grow our vital transportation infrastructure.

In compliance with SAFETEA, this Transportation 2035 Plan includes a financial plan demonstrating how the program of projects can be implemented, using resources that are reasonably expected to be available. Further, federal law now requires that revenues and project cost estimates must use an inflation rate to reflect “year of expenditure dollars.” This plan does that. Past long-range plans have shown these figures in current, or nominal, dollars.

SAFETEA expires in 2009. Congress has begun drafting a new, multiyear act that could make sweeping changes in the way that transportation is funded at the federal level. However, for purposes of this financial plan, the best currently available financial assumptions were used in preparing the 25-year revenue projec-



tions. Specifically, revenue projections for federal transportation programs were made based on the existing structure of federally funded programs.

The financial assumptions for the financially constrained Transportation 2035 Plan are as follows:

- The federal highway program is assumed to continue in its current form. Surface Transportation Program (STP), Congestion Mitigation and Air Quality Improvement (CMAQ) Program and Highway Bridge funds are assumed to grow at a rate of 4 percent annually. Base year revenue is set at the SAFETEA nationally authorized level for fiscal year (FY) 2008-09, and the Bay Area is projected to receive its historical proportionate share of these programs.
- Federal Transit Administration programs — Sections 5307, 5309, 5310, 5311, 5316 and 5317 — are based on the FY 2008-09 nationally authorized levels and are assumed to grow at a rate of 4 percent annually. The Bay Area is assumed to receive its historical proportionate share.

- State gas tax subventions and the Surface Transportation Improvement Program (STIP) revenue are assumed to maintain the current structure and distribution formula, as laid out in Senate Bill 45 (1997), over the 25-year period. Revenue projections and regional distribution shares for state funds are based on FY 2007-08 levels, and projections for fuel price and consumption growth are based on estimates developed by the Legislative Analyst's Office in 2007. Revenue estimates and regional shares for STIP funds are also consistent with the state's adopted 2008 STIP Fund Estimate.

- State Transit Assistance (STA) revenue is also based on current funding formulas and projections for fuel price and consumption growth developed by the Legislative Analyst's Office in 2007. However, the 25-year projection for STA revenue takes into account two financial adjustments. The STA revenue projection includes funds generated by the growth in sales tax on gasoline, which are commonly known as "spillover" funds. It also reflects the state Legislature's suspension of the STA program and spillover funds from FY 2009–10 through FY 2012–13; however, the projection assumes reinstatement of the STA program and spillover funds in FY 2013–14.

- State Highway Operations and Protection Program (SHOPP) revenues are based on

funding levels and growth rates assumed in the 2008 STIP Fund Estimate. The share of SHOPP funds assumed to flow to the Bay Area over the 25-year period is based on historical expenditure averages as reported in the 2006 SHOPP plan.

- Proceeds from Proposition 42 — the 5 percent sales tax on gasoline that is dedicated for transportation — augment funding for STA, STIP, and local streets and roads. Projected revenue from Proposition 42 is consistent with the assumptions on fuel cost and gasoline consumption growth provided by the Legislative Analyst's Office.

- Proposition 1B, the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act, approved by voters in 2006, provides funding for a variety of transportation programs. Senate Bill 88 (2007) lays out the structure and distribution method for several of the bond programs. For those programs that do not currently have a structure or distribution formula in place on which to base assumptions regarding the region's share of these funds, it was assumed that the Bay Area's share of the funding would be proportionate to the region's share of population relative to the rest of the state.

- Bridge toll revenues are based on projected travel demand on the region's seven state-owned toll bridges. Toll-paid travel on the

bridges is projected to grow at varied annual rates of between 0.3 and 0.5 percent over the 25-year period.

- Bay Area Express Lane Network revenues included in the financially constrained plan represent projected net revenues available for other investments after financing the completion of the network and funding its operations and maintenance costs over the 25-year period. The revenue estimates are from the *Bay Area HOT Network Study*, completed in December 2008.

- Revenues from Assembly Bill 1107 (1977), the half-cent sales tax for the three BART counties of Alameda, Contra Costa and San Francisco, are assumed to grow at a rate derived by taking a weighted average of recent historical growth in sales tax revenue generations within the three counties.

- Transportation Development Act (TDA) revenue, derived from the statewide quarter-cent sales tax, is based on a five-year historical average of funding levels in each county. The growth rates assumed for TDA revenues in Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Sonoma counties are based on estimates provided by the respective sales tax authorities in those counties. The growth rate used for Napa and Solano counties is the average of the growth rates in the other seven Bay Area counties.



- County and transit district transportation sales tax revenues in Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Sonoma counties are based on estimates provided by the respective sales tax authorities in those counties. Measures that are set to expire within the 25-year period are assumed not to be renewed. Where they do not currently exist, transportation sales tax measures were not assumed in the financially constrained plan.
- Local streets and roads revenue includes revenue made available from local sources (not including county transportation sales tax measures) and Proposition 1B funding specific to street and road maintenance purposes. Local revenue estimates were based on information provided to MTC through a comprehensive survey conducted of local agencies. A regionwide growth rate based on historical average was applied to these revenues over the 25-year period.
- Operator-specific revenue projections including transit fares, Golden Gate Bridge tolls, AC Transit and BART property taxes, AC Transit parcel taxes, BART seismic bond proceeds, and San Francisco Municipal Transportation Agency general fund and parking revenue, have been provided by the respective operators.
- Proposition 1A (2008), the Safe, Reliable High-Speed Passenger Train Bond Act, author-



izes \$10 billion in general obligation rail bond proceeds to help finance construction of a high-speed rail link between San Francisco and San Diego. Estimates of the Bay Area's share of revenue from Proposition 1A include \$408 million from the act's formula-based local connectivity program. The region's share was calculated based on 2007 data from the National Transit Database on track mileage, revenue vehicle miles and annual passenger trips for the region's rail operators. It was also assumed that the region would receive 12.5 percent, or \$1.13 billion, of the \$9 billion in nonformula-based bond funding that will

be available statewide. The region's share was estimated based on the percentage of the entire high-speed rail project (\$40 billion in total) that is estimated to be invested in the Bay Area.

Furthermore, in February 2009, President Obama signed into law (see photo above) the American Recovery and Reinvestment Act of 2009 (ARRA), which contained an \$8 billion appropriation for high-speed rail. Based on California's demonstrated commitment to high-speed rail (as evidenced by the passage of Proposition 1A) and its head start on

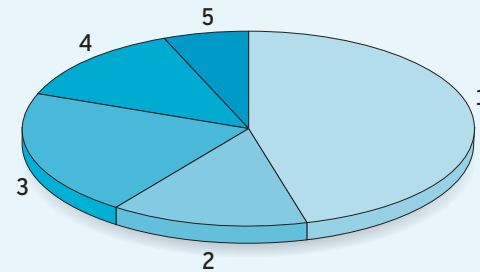
selecting routes, it is assumed that the state and, as a result, the Bay Area, are well situated to receive a significant portion of the ARRA high-speed rail funds. The revenue estimates assume that the Bay Area will receive about 19 percent, or \$1.5 billion, of the total nationwide appropriation.

- The inclusion of “Anticipated” revenues in the financially constrained plan strikes a balance between the past practice of only including specific revenue sources currently in existence or statutorily authorized, and the more flexible federal requirement of revenues that are “reasonably expected to be available” within the plan period.

MTC performed a retrospective analysis of projections for predecessor long-range plans, including a review of unexpected revenues that had come to the region but had not been anticipated or included in these projections. Over a 15-year analysis period, the San Francisco Bay Area received an annualized amount of roughly \$400 million (in 2008 dollars) from these “unanticipated” fund sources. These revenue sources include Traffic Congestion Relief Plan, Proposition 42, nonformula federal funds, and Proposition 1B funding. For each fund source, only the amount distributed to the Bay Area was included.

Based on this retrospective analysis, MTC believes it is reasonable to anticipate that

### Projected 25-Year Plan Revenues

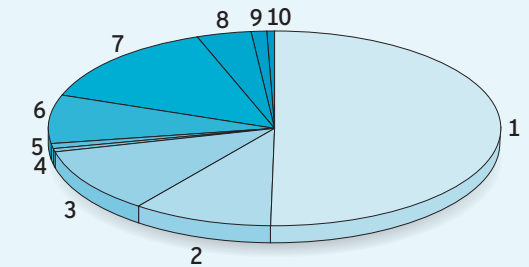


	Billions of Dollars	Percent of Total
1 Local	\$ 101	46%
2 Regional	\$ 31	14%
3 State	\$ 45	21%
4 Federal	\$ 28	13%
5 Anticipated	\$ 13	6%
<b>Total Plan Revenues</b>	<b>\$ 218</b>	<b>100%</b>

additional revenues will become available to the region over the course of the Transportation 2035 Plan period. MTC generated an estimate of these anticipated revenues by projecting the \$400 million figure forward at a 3 percent annual growth rate. To be conservative, these revenues are not assumed in the first five years of the plan.

Additional detail on Transportation 2035 financial assumptions and funding amounts is available in the *Project Notebook*, listed in Appendix 2.

### Transportation 2035 Plan Expenditures



	Billions of Dollars	Percent of Total
<b>Maintenance</b>		
1 Transit	\$ 111	51%
2 Highway	\$ 22	10%
3 Local Roads	\$ 24	11%
<b>System Efficiency</b>		
4 Transit	\$ <1	<1%
5 Highway	\$ 3	1%
6 Local Roads	\$ 17	8%
<b>Expansion</b>		
7 Transit	\$ 30	14%
8 Highway	\$ 8	4%
9 Local Roads	\$ 3	1%
10 Risk Contingency	\$ <1	<1%
<b>Total Expenditures</b>	<b>\$ 218</b>	<b>100%</b>

## Transportation 2035 Risk Assessment

The Federal Highway Administration and Federal Transit Administration encouraged MTC to take a more detailed look at the cost estimates in the long-range plan to address concerns about financial plans for large-scale transportation projects. Accordingly, MTC conducted a risk assessment to identify and quantify high risks for the program of projects included in the Transportation 2035 Plan, and to determine the appropriate amount of funding reserve needed to assure successful completion of projects.

MTC used a probabilistic risk model to calculate the risks associated with project costs, scopes and schedules, taking into account project unknowns and unanticipated expenses. In its evaluation, MTC found that a majority of the project sponsors accounted adequately for risks by setting aside the appropriate level of project contingency for each phase of their project (environmental, design, right-of-way and construction). However, to protect against cases where project risks might not have been adequately or accurately estimated, the Commission decided to add a risk contingency at the plan level. Evaluation results suggested a minimum risk contingency of \$200 million



would be appropriate, and the Commission included this amount in the Transportation 2035 budget to cover any cost overruns, schedule conflicts and other unknowns that may occur during project delivery for nearer-term projects.

## Transportation 2035 Budget

Applying these assumptions to the main transportation revenue sources yields a 25-year revenue estimate of \$218 billion. This becomes the budget for the financially constrained plan. As shown in the “Revenues” pie chart on page 35, nearly half of these funds are from local sources, primarily transit fares, dedicated sales tax programs, and state and county tax subventions to local streets and roads. Making up the remainder of the pie are state and federal revenues (mainly derived from gas taxes), regional sources (mostly bridge tolls), and “Anticipated” revenues (see previous page for explanation).

Prioritizing these funds for projects that offer the highest performance “bang for our buck” is a necessary first step of this plan. Given the many competing needs — whether for system maintenance, efficiency or expansion — the full impact of working within a \$218 billion budget can only be appreciated when matching available revenues against the costs incurred in managing a mature, but growing, transportation system. The tradeoffs that the Commission had to consider in making its investment decisions were tough to say the least, especially since the shortfalls for replacing transit capital assets and maintaining local streets and roads have doubled since the last plan (after adjusting for the conversion to escalated dollars).



## Plan Investments Address Core Concerns

The \$218 billion in plan expenditures support the Three Es of Economy, Environment and Equity, and attempt to foster the kinds of changes envisioned in Transportation 2035.

### Support for Public Transit Benefits Economy and Environment

Almost two-thirds of plan expenditures are spent on public transit (see pie chart top middle) in an effort to reduce vehicle miles traveled, congestion on Bay Area freeways, and greenhouse gas and particulate matter emissions.

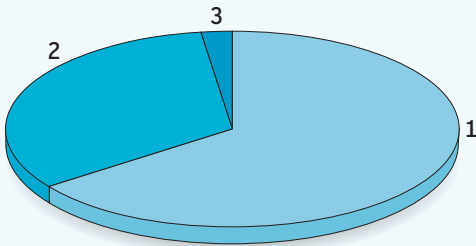
### Investments Sustain Urban Core

Over 80 percent of the plan expenditures go toward maintaining and operating the existing transportation system. Most of our transportation infrastructure is located in the urban core, and funding system maintenance and operations helps support the vitality of the urban core (see pie chart top right).

### Plan Fosters Focused Growth

Reflecting Transportation 2035's commitment to focused growth, 95 percent of plan expenditures are directed to maintenance and transit expansion, with another 2 percent (\$4 billion) being directed to bicycle and pedestrian improvements. (See pie chart top right.) This hefty financial investment supports the efforts of FOCUS to direct more housing and jobs in a network of

Plan Expenditures by Mode



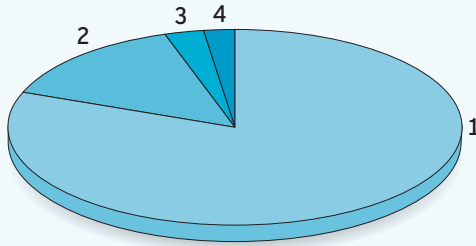
	Billions of Dollars	Percent of Total
1 Transit	\$ 141	65%
2 Roads and Bridges	\$ 73	33%
3 Bicycle, Pedestrian & Other*	\$ 4	2%
<b>Total Expenditures</b>	<b>\$218</b>	<b>100%</b>

transit-connected, bicycle-friendly and walkable neighborhoods, primarily located in the region's existing urban core.

### Transit Promotes Equity and Access

Almost two-thirds of plan expenditures go to projects that improve transit services (see pie chart top middle). Directing a majority of our funds to transit maintenance and operations supports equitable access because the transit network largely provides lifeline services, and transit expansion is occurring in or near communities where low-income and minority residents are concentrated.

Plan Expenditures by Function



	Billions of Dollars	Percent of Total
1 Maintenance and Operations	\$ 177	81%
2 Transit Expansion	\$ 30	14%
3 Road Expansion	\$ 7	3%
4 Bicycle, Pedestrian & Other*	\$ 4	2%
<b>Total Expenditures</b>	<b>\$218</b>	<b>100%</b>

### Climate-Friendly Investments Dominate Spending

The overwhelming share of plan expenditures — 97 percent — goes to support maintenance and operations, transit expansion, and bicycle and pedestrian improvements. These directly support the regional effort to respond responsibly to climate change. Many of the discrete investments in the plan are climate-friendly and aim to reduce greenhouse gas emissions from transportation sources.

\*"Other" includes \$400 million for Lifeline Transportation serving low-income travelers and \$400 million for the Transportation Climate Action Campaign.



Revenues projected to be available over the 25-year Transportation 2035 Plan period are characterized as either Committed Funds or Discretionary Funds. Committed Funds are funds that have been reserved by law for specific uses, or allocated by MTC action (prior to the development of the Transportation 2035 Plan). These would include voter-approved funding mechanisms at both the local and regional level, and certain state and federal funds. (The plan's treatment of these funds is consistent with MTC policy concerning prior commitments, as adopted in MTC Resolution 3868.) Discretionary Funds are moneys available to MTC (and not already programmed as Committed Funds) for assignment to projects via the Transportation 2035 Plan planning process. Of the \$218 billion in projected Transportation 2035 revenue, \$186 billion (85 percent) is characterized as Committed Funds. The remaining \$32 billion (15 percent) is discretionary revenue (mostly state and federal funds) that the Commission may direct to fully fund existing projects or support new investments as detailed in this plan.

The spending recommendations proposed by the Transportation 2035 Plan are focused on maintaining and operating the existing transportation system efficiently and pursuing investments that maximize system efficiency and support strategic expansions where needed. As shown in the pie chart to the right on page 35, \$157 billion of the budget — 72 percent — will



go toward ongoing maintenance and rehabilitation of the region's transportation infrastructure. The remaining expenditures include another \$20 billion (9 percent) toward system operations and efficiency projects and \$41 billion (19 percent) to expand our highways, transit and local roads. A \$200 million risk contingency is added for the first time as part of the plan expenditures for purposes of assuring successful delivery of nearer-term projects (see "Transportation 2035 Risk Assessment," on page 36).

Though the funding picture presented here covers most of the region's projected transpor-

tation expenses, it does not capture the entire "universe" of transportation spending in the region. For example, the \$218 billion does not include airports, seaports, and private freight and rail operations. Neither does it include the large personal expenditures on transportation by individuals, largely through out-of-pocket costs for automobiles — purchase price, gasoline, insurance, maintenance costs, etc.

In the following chapter, "Investments," we take a closer look at the key funding decisions and key program emphases in the Transportation 2035 Plan.

CHANGE IN MOTION

“You must be the change you wish to see in the world.”

MOHANDAS GANDHI

## Investments

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# Investments

In crafting an investment program for the Transportation 2035 Plan, the Commission had to grapple with a number of important, but often competing, questions. How much do we invest in the maintenance, system efficiency and expansion of our regional transportation system when needs exceed available revenue? What are the consequences of investing in one transportation priority but not another? How should we weigh specific project performance characteristics in assembling a package of investments to address the plan's various goals?

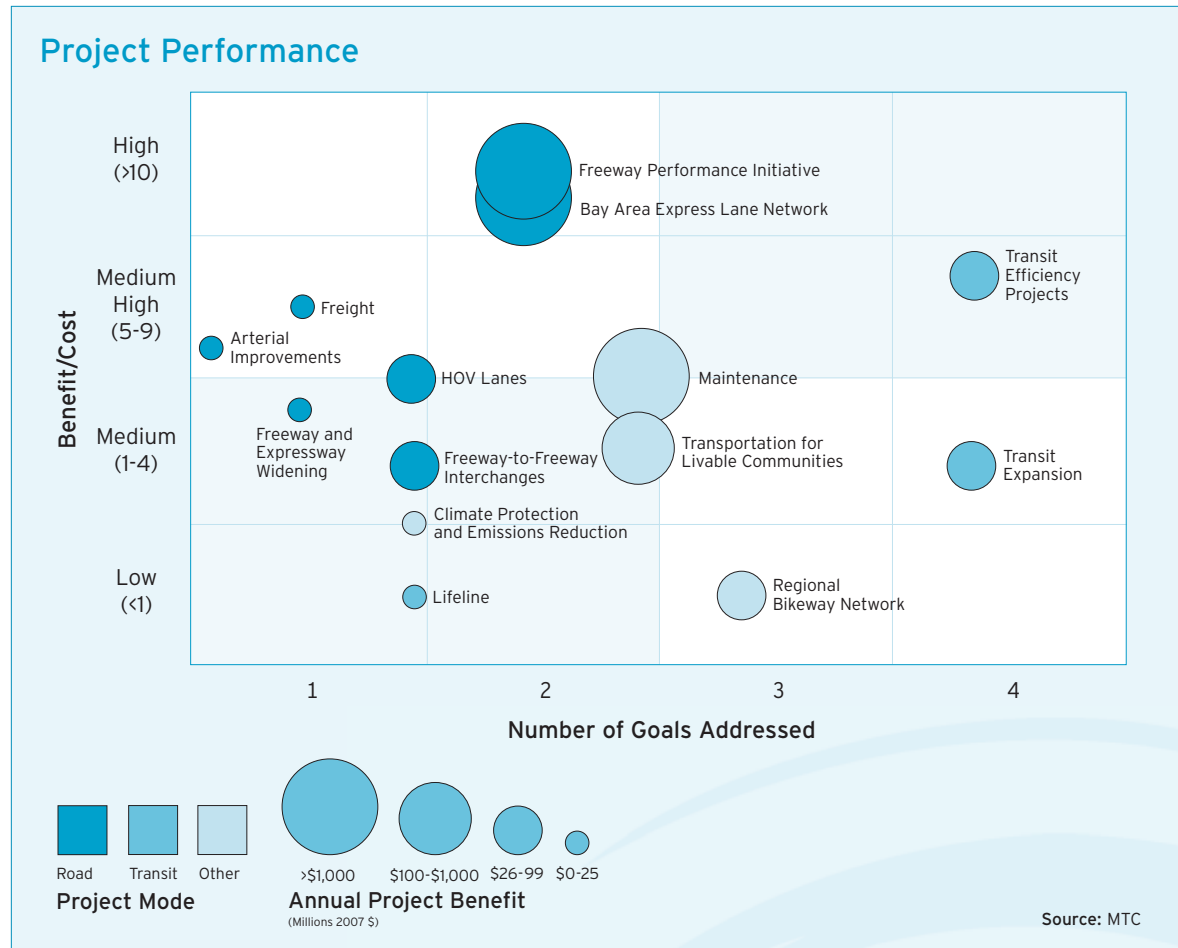
The Commission proceeded to identify the investment plan in a systematic way, starting with a performance assessment of individual projects, followed by investment tradeoff discussions among transportation partners and stakeholders. The financially constrained investment strategy ultimately adopted by the Commission should help the region make progress on several key fronts, but further progress will be needed.



## Assessing Project Performance

MTC performed a detailed assessment of some 700 projects proposed for consideration in the financially constrained Transportation 2035 Plan. The two-part project assessments included a quantitative appraisal to measure benefit/cost with respect to the performance objectives, and a qualitative policy assessment to reflect the somewhat broader considerations embodied in the Three Es and plan goals.

The purpose of this project-by-project assessment was to identify matches and outliers — projects that most strongly support the Transportation 2035 Plan's performance objectives and goals, and those that most obviously do not. The Commission's intent was to include the highest-performing projects (those that both yield a high financial return for each dollar invested and address multiple goals), and to exclude the lowest-performing projects (those that cost more than the benefits produced and address only a few goals). As shown in the graph to the right, high performers included investments such as the Freeway Performance Initiative, Bay Area Express Lane Network, and transit efficiency projects; while lower performers were found among some freeway and expressway widenings, freeway-to-freeway interchanges, and even regional projects like lifeline transportation and climate protection programs.



The results of the performance assessment guided the Commission in making tradeoffs among competing priorities vying for funding and inclusion in the financially constrained plan. But performance results were not the only factor.

The Commission also considered input from our transportation partners and stakeholders, and took into account local priorities and the regional need for specialized programs focused on lifeline transportation, bicycle use, climate

## Summary of Discretionary Funding (With Remaining Shortfalls)

In billions of year-of-expenditure dollars

	Total Need	Committed Funds	Discretionary Funds	Remaining Shortfall
<b>Maintenance</b>				
Local Streets and Roads Maintenance	\$ 34.5	\$ 16.3	\$ 7.0	\$ 11.2
Transit Capital Replacement	\$ 40.3	\$ 16.7	\$ 6.4	\$ 17.2
Transit Operations	\$ 98.0	\$ 90.0	\$ -	\$ 8.0
State Highway Maintenance	\$ 17.0	\$ 4.0	\$ -	\$ 13.0
<b>Efficiency</b>				
Lifeline Transportation Program	\$ 0.7	\$ 0.3	\$ 0.4	\$ -
Regional Bicycle Program	\$ 1.0	\$ -	\$ 1.0	\$ -
Transportation Climate Action Campaign	\$ 0.4	\$ -	\$ 0.4	\$ -
Planning Funds	\$ 0.3	\$ -	\$ 0.3	\$ -
Transportation for Livable Communities	\$ 2.2	\$ -	\$ 2.2	\$ -
Freeway Performance Initiative	\$ 1.6	\$ -	\$ 1.6	\$ -
<b>Expansion</b>				
Transit and Roadway Expansion*	\$ -	\$ -	\$ 12.1	\$ -
Risk Contingency	\$ 0.2	\$ -	\$ 0.2	\$ -
<b>Total</b>	<b>\$ 196.2</b>	<b>\$ 127.3</b>	<b>\$ 31.6</b>	<b>\$ 49.4</b>

\*Includes \$6.1 billion in net Bay Area Express Lane Network revenue

Source: MTC

## Investing in Change

Over the 25-year time span of this long-range plan, MTC estimates that \$218 billion will be spent on transportation in the Bay Area. In addition to the \$186 billion committed primarily to maintaining and operating our existing regional transportation system, Transportation 2035 sets change in motion with \$32 billion of new, discretionary investments — fresh ideas, clever innovations and bold initiatives — that will improve travel in the region and overall quality of life. These Transportation 2035 investments are displayed in the table to the left.

The multimillion dollar investments made in the Transportation 2035 Plan are set forth in this chapter, presented in broad, thematic groupings. Our intent is to highlight key investments that maintain and expand our transit systems, keep our roadways in a state of good repair, respond to environmental and land-use changes, and maximize mobility and accessibility for all transportation users. Individual projects (listed by county) can be found in Appendix 1.

protection and other policy considerations. In some cases, these policy considerations outweighed poor performance results. Ultimately, the Commission found that using a performance-based approach to defining

the investment priorities not only made good analytic and policy sense but also framed the policy discussion and decision-making process. See the *Performance Assessment Report* (as described in Appendix 2) for more details.

## Change in Motion

To sustain vital Bay Area transportation infrastructure, the Transportation 2035 Plan:

- Commits \$7 billion in discretionary funds to prevent further deterioration of local streets and roads. This is a break-even move that will help cities and counties keep pavement in the same “fair” condition as it is now, but will not make it easier to reduce maintenance backlogs or meet their improvement targets.
- Dedicates \$6.4 billion in discretionary funds for transit capital expenses around the Bay Area, covering the entire shortfall for bus, railcar and ferry replacement, but just one-quarter of the shortfall for other high-priority investments. To handle \$8 billion in anticipated operating shortfalls, transit agencies will have to increase revenues and improve the efficiency of their systems. A prime focus of regional advocacy efforts will be to generate additional revenues for transit operations.
- Leaves a \$13 billion shortfall for state highway maintenance. For financing highway upkeep, the Commission believes that responsibility rests with Caltrans, which owns and operates the state highway system.

## Keep Our System in a State of Good Repair

### Local Streets and Roads

The strength of the Bay Area’s transportation network lies in its local streets and roads — and the bridges, sidewalks, curbs and gutters, wheelchair ramps, bike paths, traffic signals and storm drains that go with them. But this intricate network of arterials, collectors and local roads is crumbling under the weight of decades of underinvestment. The 25-year pavement and nonpavement maintenance needs for the Bay Area total \$34.5 billion. Committed revenues over the same period of time are expected to cover \$16.3 billion, or less than 50 percent of the need, leaving more than \$18 billion in shortfalls. The Transportation 2035 Plan directs \$7 billion in discretionary funds to address, but not close, this funding gap.

Funding for local road maintenance typically comes from a range of sources, including state gasoline taxes, county sales taxes, and local sources such as city and county general funds, bonds and traffic-impact fees. But as the need for maintenance grows, the available funding is shrinking. The state gas tax loses an average 3 percent of its purchasing power each year due to inflation. General fund contributions are declining due to increased competition from

other pressing needs such as public safety and health care. County transportation sales taxes typically dedicate less than 25 percent of revenues to local street and road maintenance.

To help cities and counties wisely use scarce roadway maintenance dollars, MTC advocates preventive maintenance as the most cost-effective way to extend the serviceability of local streets. Experience shows that delayed maintenance leads to even costlier rehabilitation.



Indeed, a municipality that spends \$1 on timely maintenance to keep a section of roadway in good condition would have to spend \$5 to restore the same roadway if the pavement is allowed to deteriorate to the point where major rehabilitation is necessary (see graph at bottom right).

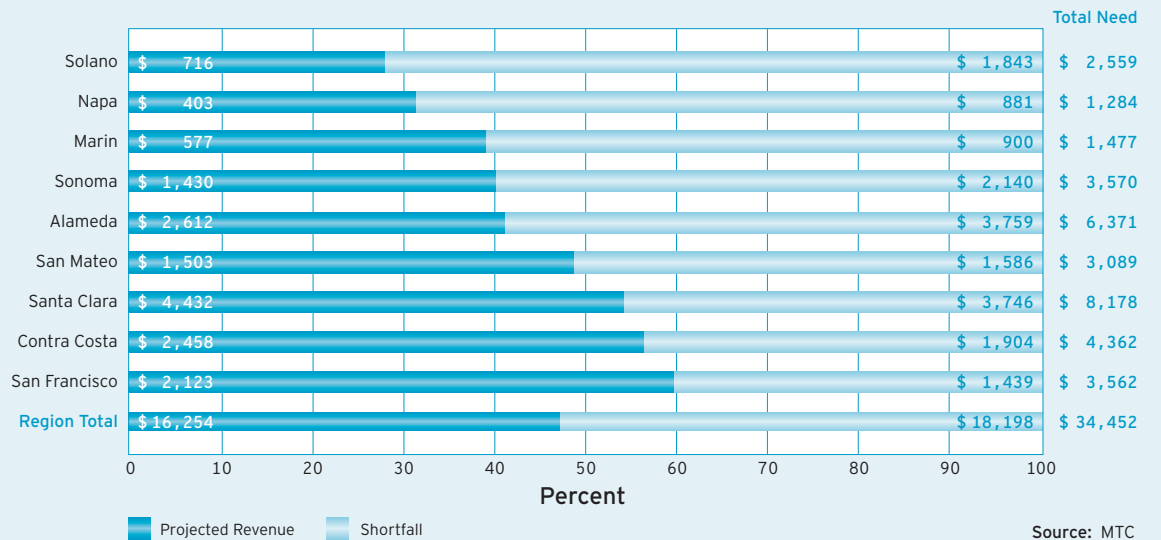
Despite MTC's emphasis on preventive maintenance, the region's backlog of needed repairs likely will more than triple over the next 25 years as roadways deteriorate faster than cities and counties are able to keep pace. Spending on street and road maintenance would have to increase by nearly 70 percent during this time just to maintain current conditions. The magnitude of the combined regional funding shortfall indicates many cities and counties will have to defer needed maintenance on some roadways, thus increasing overall costs.

## Transit

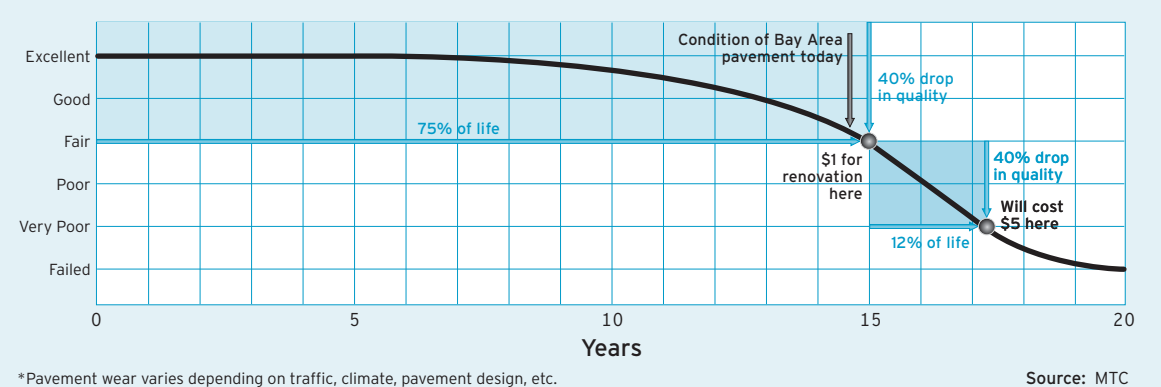
Buses, trains, ferries, light-rail vehicles, cable cars and streetcars not only provide mobility for people without cars — including those who are low-income, elderly, disabled or too young to drive — they also provide a viable alternative to driving for hundreds of thousands of area residents who do own cars. By reducing the number of vehicles on the roads, public transit helps to fight congestion and curb greenhouse gas emissions.

## Road Maintenance Expenditures by Bay Area County, 2009 - 2033 Ranked by Relative Size of Shortfall

Dollar amounts in millions; Projected Revenue does not include Transportation 2035 discretionary funds.



## Pavement Condition Over Time\*





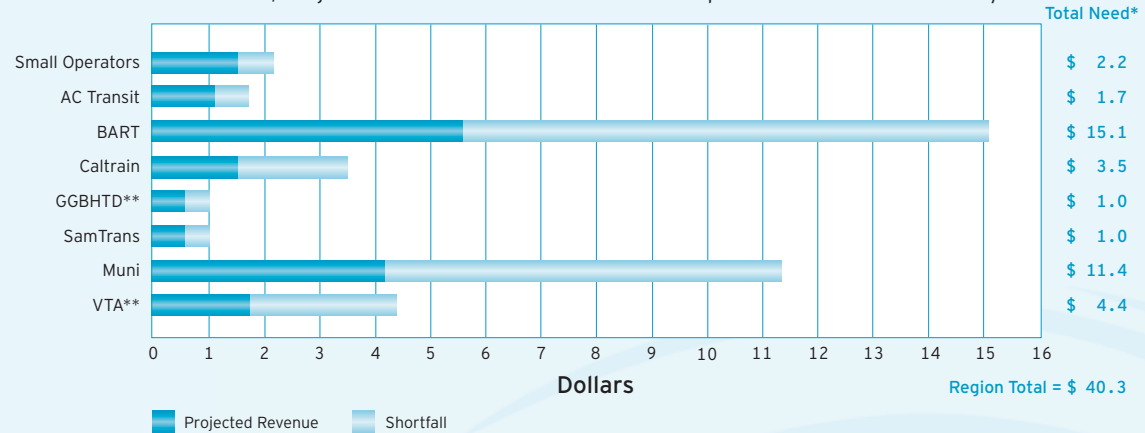
Yet despite the transit network's importance, maintaining and sustaining the network is an unending struggle. The cost of buying the fuel and paying the drivers, mechanics, dispatchers and others necessary to operate a transit system — and paying for the replacement of buses, train cars, tracks, fare machines and other capital equipment — far outpaces available funds. And just as with local streets and roads, delayed maintenance of the transit system leads to even costlier rehabilitation down the road. So the Commission has made funding for transit vehicles and fixed guideway replacement and rehabilitation a higher investment priority than proposed service expansion.

Over the next 25 years, operating and capital replacement costs for Bay Area transit providers are projected to total \$138 billion. This includes \$98 billion in operating costs plus \$40 billion for capital replacement. But dedicated revenues over the same period, which do not include discretionary funding directed by the Transportation 2035 Plan, are expected to total only \$107 billion (\$90 billion for operations and \$17 billion for capital). The result is \$31 billion in initial unfunded needs.

The Transportation 2035 Plan helps to address transit capital needs with an investment of \$6.4 billion in discretionary funds, leaving a remaining shortfall of \$25 billion (\$8 billion for operations, and \$17 billion for capital).

### Transit Capital Replacement Costs by Operator, 2009 - 2033

Dollar amounts in billions; Projected Revenue does not include Transportation 2035 discretionary funds.



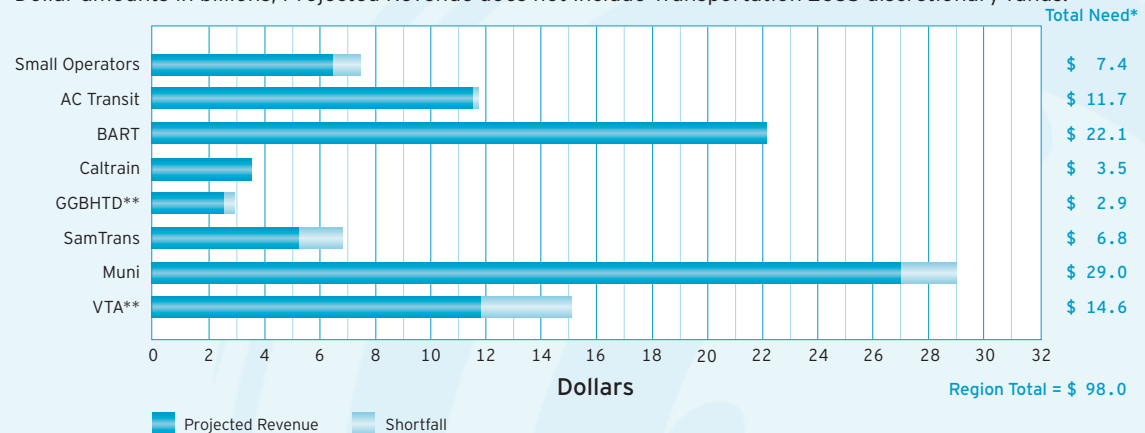
\* Total transit capital replacement needs are estimated based on data available from each operator at the time of the analysis. Commission policy that directs regional discretionary funding to cover the shortfall may take into account differences in 25-year projected shortfalls and needs identified in the near term.

\*\* VTA = Santa Clara Valley Transportation Authority; GGBHTD = Golden Gate Bridge, Highway and Transportation District

Source: MTC

### Transit Operating Costs by Operator, 2009 - 2033

Dollar amounts in billions; Projected Revenue does not include Transportation 2035 discretionary funds.



\* Total transit operating needs are estimated based on data available from each operator at the time of the analysis.

\*\* VTA = Santa Clara Valley Transportation Authority; GGBHTD = Golden Gate Bridge, Highway and Transportation District

Source: MTC

## Maintaining the System – Transportation 2035 Funding Levels

In billions of year-of-expenditure dollars

	Total Need	Committed Funds	Discretionary Funds	Shortfall
Local Streets and Roads	\$ 34.5	\$ 16.3	\$ 7.0	\$ 11.2
Transit Capital	\$ 40.3	\$ 16.7	\$ 6.4	\$ 17.2
Transit Operations	\$ 98.0	\$ 90.0	\$ -	\$ 8.0
State Highways	\$ 17.0	\$ 4.0	\$ -	\$ 13.0

The rising cost of transit operations is driven in large part by soaring fuel and health care expenses. On the capital side, two key points stand out:

- Muni and BART carry the largest number of Bay Area transit riders, and have by far the largest capital replacement needs. Together, these operators account for some \$27 billion, or nearly two-thirds of the region's 25-year transit capital needs. And the agencies' combined \$17 billion capital shortfall makes up almost 75 percent of the regional total (before taking into account Transportation 2035 discretionary funds).
- Many of the Bay Area's transit capital needs — and shortfalls — are for assets that receive high marks from the region's Transit Capital Priorities policy scoring system, which is used to rank transit projects that compete for federal transit money. These high-priority investments include revenue vehicles (buses,

rail cars and ferries), track, bridges, tunnels, train control and power systems, and communications systems. Total need for such investments comes to \$29 billion over the next 25 years. Yet even if all dedicated transit capital revenues were spent on these projects, the region would still face a \$13 billion shortfall for these high-priority projects.

### State Highways

California's 50,000 lane-mile state highway system is the foundation on which the vitality of California's economy is built, linking people and goods with intermodal transportation facilities, growing metropolitan centers, and major international airports and ports. Our state highway system is a transportation resource valued in excess of \$300 billion.

Much of this system was built in the 1950s, 1960s and early 1970s to serve the growing California population and economy. Today, some

of these infrastructure assets are aging beyond their useful life and in need of rehabilitation and reconstruction. Nearly 15,000 lane miles of the state highway system are distressed such that the pavement is of poor structural condition and poor ride quality. Increases in vehicle travel and goods movement have contributed to a faster rate of pavement deterioration, concentration of accidents and more hours of traffic congestion. Compounding the problem is the lack of maintenance funding and the rise of construction costs, which have led to project delays, deferred maintenance, accelerated deterioration, and ultimately higher project costs.

State law requires Caltrans to prepare a 10-year plan for the State Highway Operation and Protection Program (SHOPP). The SHOPP identifies the various needs for all state-owned highways and bridges. As illustrated in the table above, Bay Area highway maintenance needs over the 25-year life of this Transportation 2035 Plan total about \$17 billion. Projected revenues over the same period are expected to cover only \$4 billion, resulting in \$13 billion in unfunded needs. The Commission has not yet identified any new funding sources for the \$13 billion in unfunded SHOPP needs. The magnitude of the Bay Area's highway rehabilitation needs and lack of funding suggests that maintenance will have to be delayed or deferred on some highways, unless a new source of state funding can be identified.

## Change in Motion

To combat global warming and help clean Bay Area air, the Transportation 2035 Plan:

- Commits \$400 million to fund a multi-agency Transportation Climate Action Campaign to reduce our carbon footprint, complementing MTC's Transportation for Livable Communities Program, Regional Bicycle Program, Regional Rideshare Program, and other Transportation 2035 bicycle and pedestrian investments.
- Directs \$45 million to the Bay Area Air Quality Management District's Goods Movement Emission Reduction Program to curb diesel particulate matter emissions that pose serious health threats to Bay Area residents — particularly children and adults with respiratory ailments, and those residing near the Port of Oakland and along major goods movement corridors.

## Lead the Charge on Climate Protection

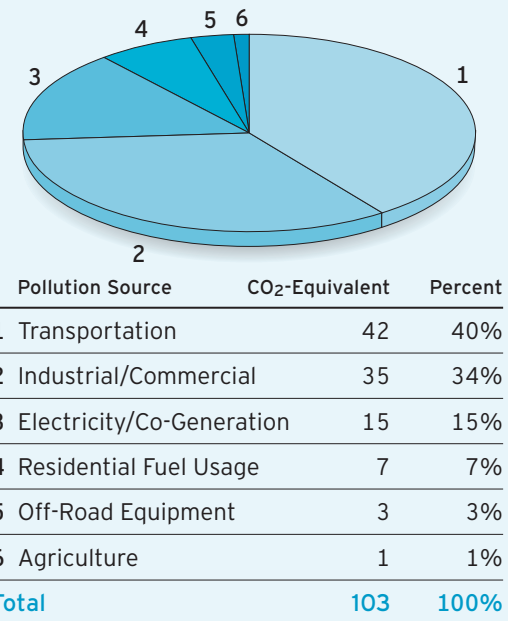
All but a few skeptics now acknowledge that climate change is real, that it is largely caused by human activity (particularly the burning of fossil fuels), and that it can have profound consequences for our planet. There is growing consensus, too, that climate change will have a dramatic local impact on California and the Bay Area.

The Bay Area emits greenhouse gases (GHGs), principally carbon dioxide, at three times the world average; and 40 percent of these emissions come from the transportation sector, mostly from cars, trucks, buses, trains and ferries (see graph to the right). GHGs linger for years, trapping heat in the earth's atmosphere and causing the global climate to change. Because the consequences of climate change are serious, the Bay Area needs to take aggressive action to reduce its transportation-related emissions, setting the example for the rest of California and for the national and international community. We will have to consider these consequences throughout our transportation and land-use planning; and we will need to ensure climate resilience in our infrastructure and development choices (see map on page 49).

## Regional Response to Climate Change

Time is of the essence for the Bay Area's response to climate change. The urgency of the situation requires immediate action. Some actions by their very nature will take longer to implement, due in part to the high amount of financial investment, political capital and time required. As a first step, the four regional

**CO<sub>2</sub>-Equivalent Emissions in the Bay Area, by Major Categories**



Source: BAAQMD, 2007 Source Inventory of Greenhouse Gas Emissions  
Emissions in million metric tons/year; data is for 2007



agencies — MTC, the Bay Area Air Quality Management District (BAAQMD), the Bay Conservation and Development Commission and the Association of Bay Area Governments — are sponsoring a Transportation Climate Action Campaign.

The Commission has earmarked \$400 million toward the Transportation Climate Action Campaign, which aims to enable individuals to develop climate-friendly behaviors, reduce the Bay Area's carbon footprint, and lay the groundwork for ongoing future climate change initiatives. The Transportation Climate Action Campaign focuses on public outreach and education efforts to alter driving and travel behaviors and to offer a suite of complementary grants, incentives and action-oriented programs. In addition to the public outreach, education and advocacy efforts, specific programs to be pursued include, but are not limited to, the following:

### **Climate Grants Program**

The Climate Grants Program will fund major demonstration projects to test the most innovative strategies to promote changes in driving and travel behaviors. Given that this is the first time that the region has focused its energies on a climate protection initiative, this program provides a great opportunity to learn what kinds of strategies can most effectively reduce GHG emissions. Potential projects may seek to



increase the use of low-GHG alternative fuels, expand car-sharing programs, or implement low-GHG tire incentive programs or pricing demonstration projects.

### **Safe Routes to Schools**

The Safe Routes to Schools Program aims to increase the number of children who walk or bicycle to school by funding projects that remove barriers to such activities. Barriers often include lack of infrastructure, unsafe facilities that result in uninviting walking and bicycling conditions, and lack of education and enforcement programs aimed at children, parents and

the community at large. Through the Safe Routes to School program, local champions work with parents, schools, and transportation, health and law enforcement providers to implement community solutions. This program would provide additional funding to expand existing Safe Routes to Schools programs that are being implemented successfully in Marin, Alameda and Contra Costa counties, and offer new funding to implement similar programs in other counties.



## California Out in Front

Whereas the federal government has yet to act on reducing GHG emissions, California legislators have responded to climate change with some of the strongest environmental laws ever passed. Three prominent laws that will shape our efforts to regulate GHGs include:

### Assembly Bill 1493 (Pavley)

Assembly Bill 1493, enacted in 2002, requires the California Air Resources Board (ARB) to develop and adopt regulations that achieve maximum feasible and cost-effective reduction of GHG emissions from passenger cars and light- and medium-duty trucks sold in California for 2009 and subsequent model years. Under ARB regulations adopted in 2004, automakers must meet increasingly stringent GHG emission standards that phase in between 2009 and 2016. And, California has committed to implement revised, more-stringent GHG emission limits by 2020 (the Pavley Phase 2 rules). While EPA had earlier refused to grant a waiver that would allow California to implement its tighter standards, President Obama recently ordered the EPA to reconsider its denial of California's request for a waiver.

### Assembly Bill 32: California Global Warming Solutions Act

The California Global Warming Solutions Act (Assembly Bill 32), a groundbreaking law signed by Governor Schwarzenegger in September



2006 (see photo above), requires reduction of statewide GHG emissions to 1990 levels by the year 2020. Reducing greenhouse gas emissions to 1990 levels means cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 15 percent from today's levels. In December 2008, the ARB approved the scoping plan that outlines strategies the state will use to reduce GHGs.






### Senate Bill 375 (Steinberg)

Senate Bill 375, signed into law in September 2008, establishes a process for ARB to implement AB 32 by requiring ARB to adopt by September 30, 2010, regional GHG targets for

emissions associated with the automobile and light truck sector. Metropolitan planning organizations such as MTC are required to develop a Sustainable Communities Strategy (SCS) element in their long-range plans to strive to reach the GHG reduction targets. The SCS adds three new elements to the plan: 1) a land-use component; 2) a resource and farmland protection component; and 3) a demonstration of how the development pattern and the transportation network can work together to reduce GHG emissions. In the Bay Area, the provisions of Senate Bill 375 will apply to the successor plan to Transportation 2035, scheduled for adoption in 2013.

According to a report being prepared by the Bay Conservation and Development Commission (*Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline*, available in 2009), the sea level in the Bay could rise a foot or more, inundating some communities and covering both the San Francisco and Oakland airports, state highways, and other key road and transit infrastructure.

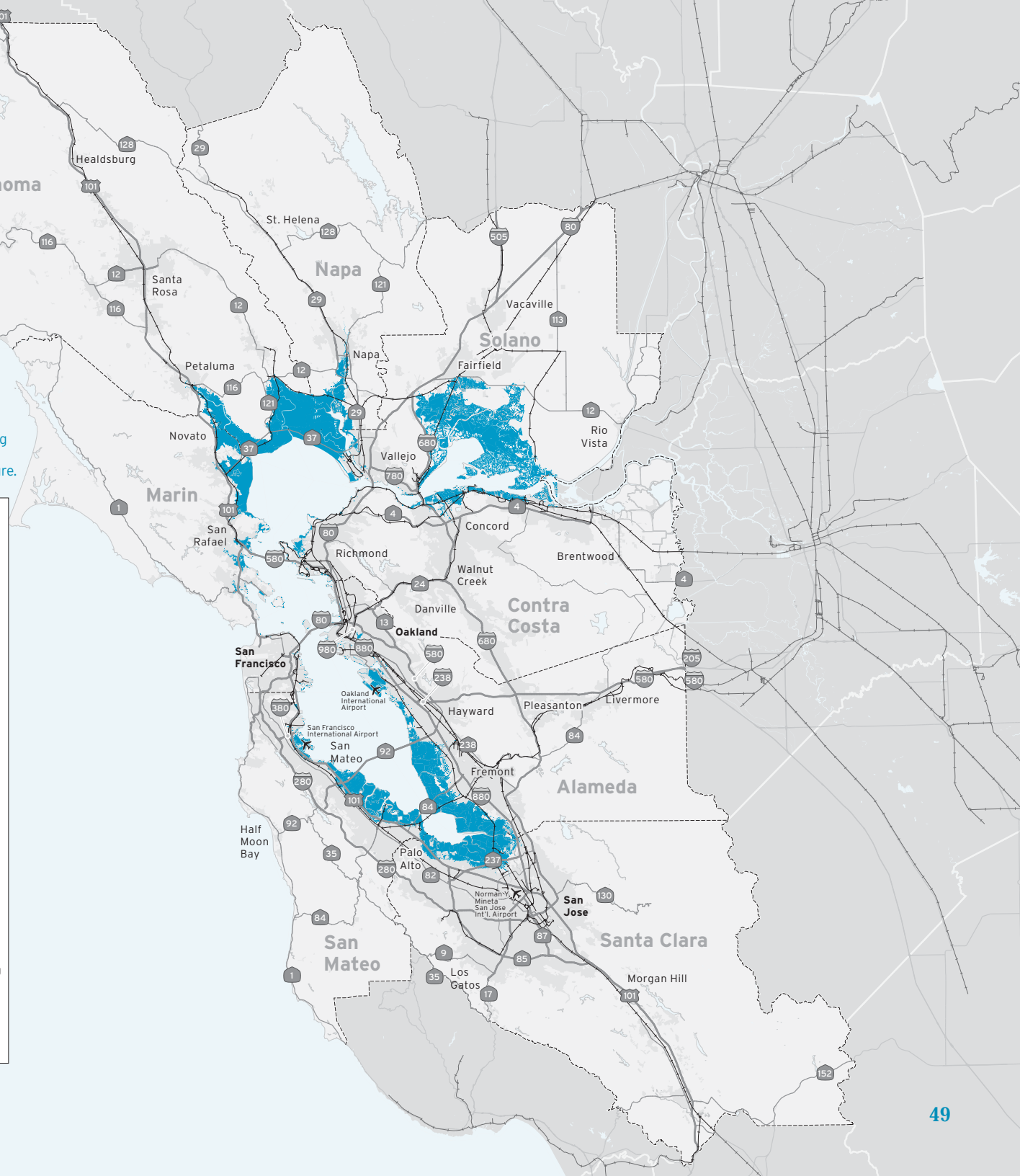
## Shoreline Areas Vulnerable to Sea Level Rise at Mid-Century (2040 - 2060) Due to Climate Change

-  Area Vulnerable to 16-inch Sea Level Rise
-  Railroad
-  Freeway
-  Highway
-  Local Road



0 10 20 30 Miles  
0 10 20 30 Kilometers

Map produced by MTC in collaboration with the San Francisco Bay Conservation and Development Commission. Inundation data provided by Dr. Noah Knowles, U.S. Geological Survey, with funding from the California Energy Commission's Public Interest Energy Research (PIER) Program through the California Climate Change Center at Scripps Institution of Oceanography, and from the CALFED Science Program CASCade Project. Additional salt pond data provided by Seigel and Bachand, 2002. Street base map © Thomas Bros. Maps. All rights reserved. MTC Graphics 4/2009



### Safe Routes to Transit

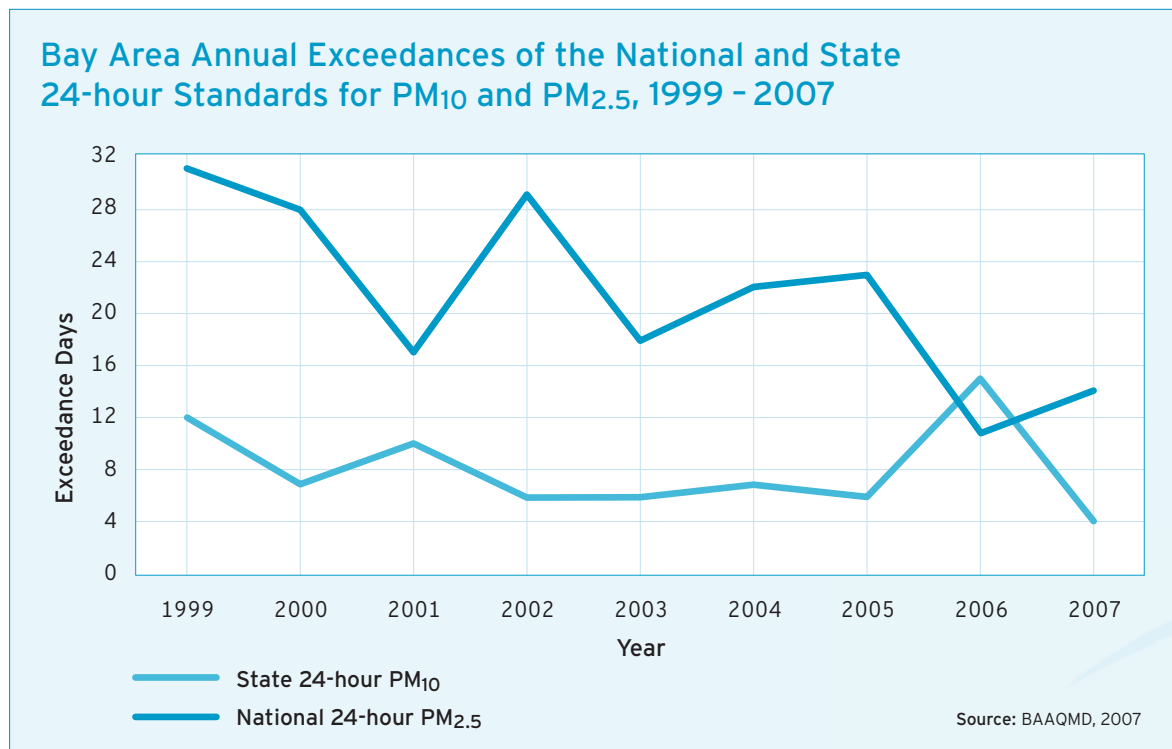
The Safe Routes to Transit Program encourages walking and biking to transit, and offers funding for infrastructure to remove barriers that impede access to transit. Because the current Regional Measure 2-funded Safe Routes to Transit program is inundated with demand that outstrips available funding and is due to sunset in 2013, this program would seek to provide additional funding for ongoing efforts.

### Transit Priority Program

The Transit Priority Program increases the attractiveness of bus transit by improving speed and on-time reliability through improvements such as dedicated bus lanes, bus bulbs, accessible transit shelters, wheelchair landing pads and bus signal priority. This transit priority program will be coordinated with MTC's regional signal timing program to ensure that air quality and travel time benefits are optimized.

### Curbing Diesel Pollution

Diesel pollution from current goods movement operations worsens the health of community residents near ports, rail yards, distribution centers and roads with high truck traffic. In 2006, the U.S. EPA released new standards for particulate matter (PM). A key change in the new standards is a stricter 24-hour PM<sub>2.5</sub> standard of 35 micrograms per cubic meter. In response, the Air Resources Board recommended in late 2007 that the San Francisco



Bay Area be designated as a nonattainment area for the PM<sub>2.5</sub> standard. EPA announced the new designation in December 2008. The Bay Area must demonstrate attainment of the PM<sub>2.5</sub> standard by 2014.

As part of the Transportation 2035 Plan, the Commission has committed \$45 million toward the BAAQMD's Goods Movement Emission Reduction Program. This program aims to quickly reduce particulate matter emissions and health risks by replacing and/or retrofitting up to 800 port and general goods movement

trucks currently operating along the Bay Area's priority trade corridors. Trucks would be either retrofitted with particulate matter and nitrogen oxide filters or engines that comply with the ARB's on-road emission standards, replaced with state-of-the-art vehicles, or scrapped. Programs like this Goods Movement Emission Reduction Program target diesel particulate matter and nitrogen oxides, but also produce co-benefits by reducing greenhouse gas emissions and black carbon emissions that contribute to climate change.







## Change in Motion

To drive operational improvements and increase the efficiency of the region's transportation system, the Transportation 2035 Plan:

- Commits \$1.6 billion to a new, comprehensive Freeway Performance Initiative to better manage freeway congestion throughout the Bay Area. To be aggressively deployed in a five- to seven-year time frame, this program also will establish a technological foundation for future intelligent transportation system innovations.
- Invests \$1.1 billion to fund a separate suite of regional operations programs, many of them technology-based, to improve travel in the region. Examples include the 511 traveler information service, the TransLink® universal transit-fare smart card, and the Freeway Service Patrol's roving tow trucks equipped with Automatic Vehicle Location (AVL) devices.

## Maximize System Performance Through Technology

The Bay Area is the second-most congested region in the nation, according to data compiled by the Texas Transportation Institute. The effects of this congestion on our daily lives — and on the overall regional economy — are significant and costly. Individuals pay with the time that is lost while stuck in traffic, and businesses lose productivity and revenues as their employees take longer and longer to travel to work.

Opportunities to relieve congestion to any meaningful degree are limited, owing to a number of key factors. Bay Area freeways are basically a mature system, with capacity increases possible at only a limited number of locations. Finances in today's economy are constrained, and adequate funding for large transportation projects is often not available due to competing needs and rising construction costs. The challenge before us is to maximize system performance through innovative, cost-effective strategies, and thereby reduce the need for new, large-scale capital investments.

## Freeway Performance Initiative

The Freeway Performance Initiative (FPI), which began in 2007, is an effort to improve the operations, safety and management of the Bay Area's freeway system. The FPI differs from traditional approaches because it addresses both recurrent daily traffic that comes from the onslaught of commuters using the freeways during rush hours and nonrecurrent congestion that results from unanticipated incidents and blockages of highway lanes. In fact, half of the total congestion experienced in the Bay Area is caused by vehicle breakdowns, vehicular accidents, material spills and other incidents.

The FPI aims to deploy current technology to better manage the congestion on our freeway system, and to establish a technological foundation from which new and innovative transportation management strategies may be implemented in the future. Through a series of corridor studies and a detailed inventory of intelligent transportation system (ITS) installations in all freeway corridors, MTC has developed a comprehensive picture of the region's current capability to manage the highway system, and has also identified the gaps that need to be filled (see map on next page).

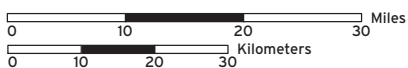
# Freeway Performance Initiative: Traffic Operations Systems and Ramp Metering

## Traffic Operations Systems (TOS)

- Adequate Existing
- ..... Infill (Some TOS equipment installed)
- ..... Buildout (No current TOS equipment)

## Ramp Metering

- Existing



Street base map © Thomas Bros. Maps. All rights reserved.  
MTC Graphics 4/2009

The most heavily traveled freeways in the Bay Area, such as Interstate 80, Interstate 680 and U.S. 101, have some elements of FPI infrastructure installed today. But roughly three-quarters of the 620 freeway centerline miles in the Bay Area are not FPI-equipped. And for those segments that do have some FPI elements, in virtually all cases existing deployments do not meet the level needed to properly manage the system. MTC has set an ambitious goal to fully deploy the Freeway Performance Initiative over the next five to seven years.

In this Transportation 2035 Plan, the Commission has made a first-time, \$1.6 billion investment over the next 25 years to implement the Freeway Performance Initiative. Following are key elements and operating principles of the FPI.

- **Traffic Operations System (TOS):** TOS infrastructure, such as closed-circuit television cameras and traffic monitoring stations, would be installed to help detect incidents. The information gathered would be fed to the Transportation Management Center (TMC) in downtown Oakland, which would then respond and clear those incidents to reduce delays and avoid the occurrence of secondary incidents. Further, the TMC would communicate these incidents to motorists through TOS elements, such as highway advisory radios,



changeable message signs and the Bay Area's 511 system. The information provided to motorists would help them make informed decisions on the best alternative routes to their destinations.

- **Ramp Metering:** [See page 55.]
- **Routine Maintenance:** The benefits of the FPI are predicated on a fully functioning system, which will require routine maintenance and periodic replacement of infrastructure. FPI includes funding for TOS maintenance and replacement. However, the cost of main-

taining the TOS technology is steep, and thus will require additional funding from Caltrans and local agencies.

- **Arterial Management:** Maximizing efficiency of the freeway system requires coordination with and optimization of major parallel arterials. FPI provides funding support for ongoing regional operation programs such as those that focus on signal timing coordination, and provides traffic engineering assistance to support efforts that improve safety and mobility along arterials.
- **Performance Monitoring:** FPI also invests in performance monitoring activities to maintain and grow data sets to monitor progress in freeway performance.

Looking beyond the Freeway Performance Initiative, the completion of the technology infrastructure on the freeway system prepares the Bay Area to implement new and innovative operational strategies in the future. And advancements will be needed to provide a truly seamless set of travel options for commuters by integrating the operation of freeways, local streets and transit. As well, innovations being developed by the private sector can more easily be enabled and made available to the public if the infrastructure enhancements proposed in the FPI are completed.

## Ramp Meters Work

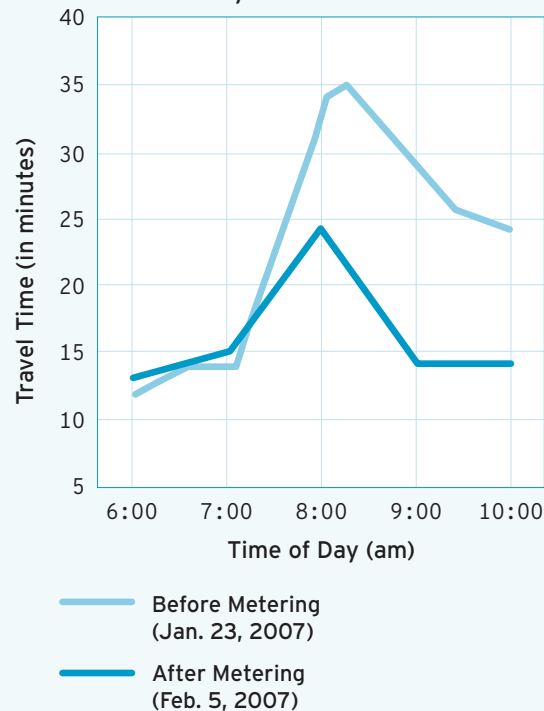
The metering of freeway on-ramps is not only highly effective in reducing congestion, but these types of projects can be deployed at a fraction of the cost of traditional freeway widening projects and in a fraction of the time. Currently fewer than a quarter of the Bay Area freeways are metered. Implementing this strategy will involve the installation of ramp meters at nearly 800 entrance ramps, essentially completing the ramp metering on Bay Area freeways. The capital cost is estimated at \$250 million in today's currency.

In early 2007, ramp meters were activated on U.S. 101 in San Mateo County, south of State Route 92. As shown in the graph to the right, peak-hour travel time has decreased by almost one-third, to 25 minutes from 35 minutes.

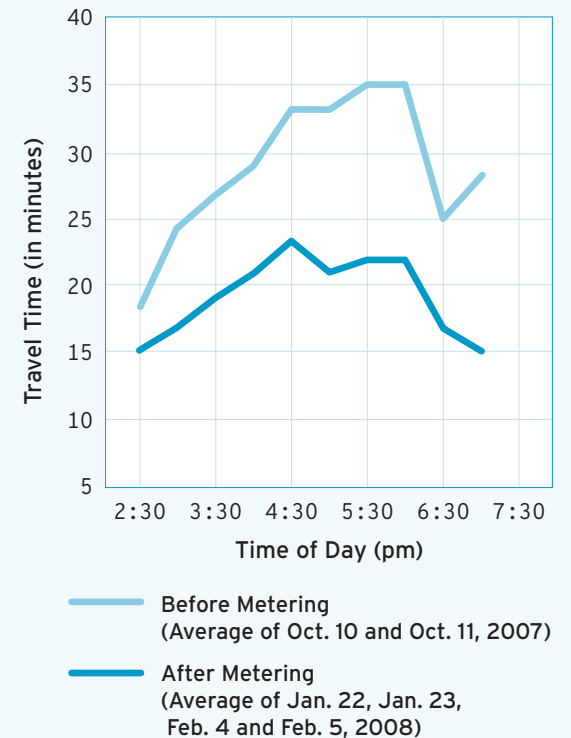
Deployment of ramp metering in early 2008 on sections of eastbound Interstate 580 in the cities of Dublin, Pleasanton and Livermore — where the afternoon commute has been ranked either the second- or third-most congested freeway segment in the entire Bay Area since 2002 — has significantly reduced travel delay in this East Bay location. Before the meters were turned on, a typical commute across the 15-mile corridor from Foothill Road to North Flynn Road took 35 minutes. After ramp metering, this time has been reduced by 37 percent during peak commute hours, with the same trip now averaging 22 minutes.

### Sample Travel Time Comparisons Before and After Metering

Southbound U.S. 101 from 3rd Ave. to just south of the San Mateo/Santa Clara County line



Eastbound I-580 from Foothill Road to North Flynn Road



Source: Caltrans



## Technology a Key Factor in Other Operational Improvements

In addition to the FPI, the Commission has earmarked \$1.1 billion to fund a suite of regional operations programs that use technology to improve travel in the region. Examples include the 511 traveler information service, TransLink®, MTC's Transit Connectivity Plan, and the incident management capabilities of the Freeway Service Patrol and call box network. Featured below are the 511 traveler information and TransLink® programs, which exemplify how technology can be applied to make travel easier and more convenient for users every day.

### 511 Traveler Information

The Bay Area's telephone- and Web-based 511 traveler information service provides up-to-the-minute, on-demand information for transit riders, drivers, carpoolers, vanpoolers and bicyclists. Part of a national rollout of 511 service, the Bay Area's system was launched in December 2002 through a partnership between MTC, the California Department of Transportation, the California Highway Patrol, and dozens of the region's transit and paratransit operators. Six years after its debut, the Bay Area system has received nearly 25 million calls, with a high of 145,000 calls logged during its busiest week. The widely used 511 Web site at [www.511.org](http://www.511.org) has supported more than 85 million user sessions

and continues to grow in popularity, especially as new features are added.

Key features of the 511 traveler information service include:

- real-time traffic conditions and incident reports, including point-to-point driving times on routes throughout the Bay Area
- a Web-based, state-of-the-art transit trip planner, with fare and schedule information for dozens of rail, bus and ferry services in the Bay Area and adjacent counties
- real-time transit information by phone for San Francisco Muni and BART
- a MY 511<sup>SM</sup> personalized phone and Web service ([www.my511.org](http://www.my511.org)), where users can build their own 511.org home page and bypass phone menu options to go directly to their trip details — and even receive a text or e-mail alert at a designated time or when conditions change
- an online ridematching tool for carpools and vanpools
- bicycling information, including an online bicycle map tool
- special phone menus and Web pages to provide quick access to critical information in emergencies, including alternate routes, closure details, park-and-ride locations, and modified or expanded transit schedules



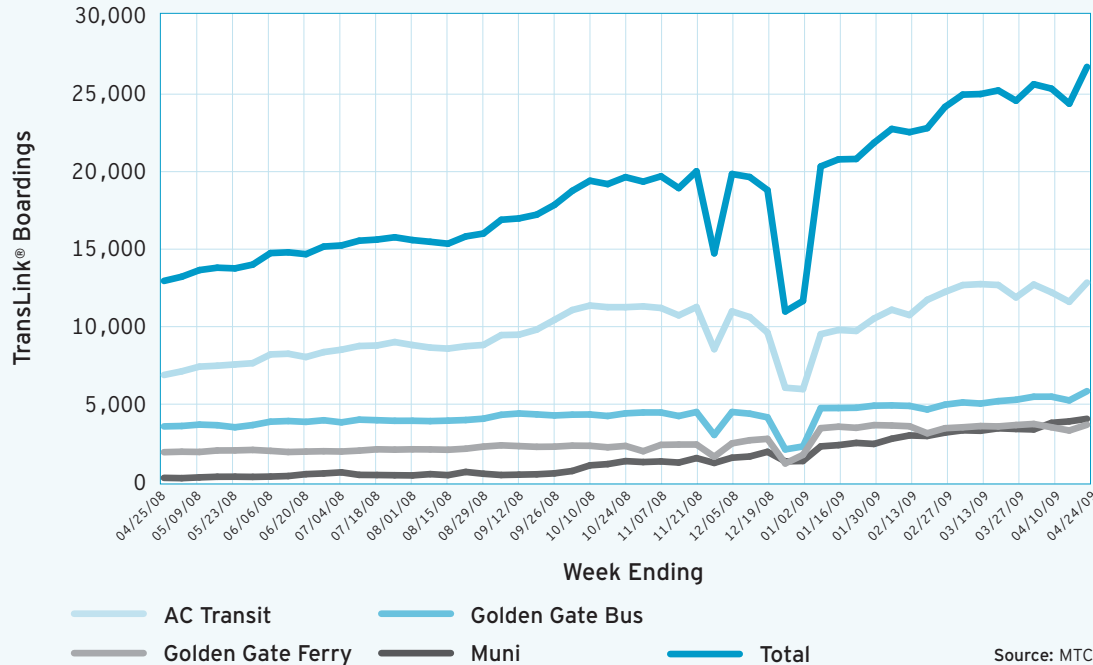
MTC is actively exploring other ways to disseminate to 511 users the information that is most current and appropriate to them.

### TransLink® — Transit Smart Card

TransLink® offers transit riders a convenient and secure way to pay their fares. The TransLink® system reduces the hassle associated with paying transit fares using exact change, multiple tickets and paper transfers. The reloadable TransLink® card stores value in the form of electronic cash (e-cash) and transit passes.

### Average Weekday TransLink® Ridership

April 2008 - April 2009



E-cash works just like cash on transit – it does not expire and is accepted by all participating transit agencies. Customers also can set up their cards for Autoload, a feature that reloads e-cash and transit passes on TransLink® cards automatically.

TransLink® has been available on all AC Transit and Dumbarton Express buses and on all Golden Gate Transit and Ferry routes since November

2006. It is now fully installed and in the early deployment phase on San Francisco Muni and Caltrain. TransLink® will be available for use on BART in the summer of 2009, and on Santa Clara Valley Transportation Authority and SamTrans in 2010.

When fully implemented, TransLink® will serve more than 500,000 transit riders every day and process 420 million transactions every year.



Eventually, TransLink® cards could be used for parking and retail purchases and may someday be integrated with other applications like credit cards or cell phones.

### TransLink® Supports TODs

In June 2007, MTC partnered with AC Transit for a pilot program that offers residents of 20 transit-oriented development (TOD) complexes around the East Bay unlimited free travel on AC Transit's local and transbay buses for a certain period of time. AC Transit also chose to use TransLink® cards as part of an agreement with the Peralta Community College District to provide year-long passes beginning in August 2008 to approximately 2,000 full-time students who attend the college district's four campuses.

## Emerging Transportation Technologies

Innovation in the transportation realm is always on the horizon, and many emerging technologies have the potential to meet our mobility needs and improve the environment. Some promising new approaches are being researched, developed, field-tested and even implemented right here in the Bay Area.

### Express Lanes Enforcement

Vehicle-occupancy requirements for the existing Bay Area carpool lane system are currently enforced through visual observation by the California Highway Patrol. However, as the region implements its Express Lane Network, the use of emerging technologies will be necessary to strengthen express lane enforcement. Violators not only reduce the travel time benefits for qualified carpoolers and toll-paying travelers, but they also erode public support and impact toll revenues. MTC and CHP are working to implement existing and new technologies that will automate enforcement of both toll violations and vehicle occupancy. License plate recognition, advanced electronic toll readers and transponders, and vehicle occupancy detection are systems already in place or being tested in other cities. These technologies have the potential to improve the operations, reliability and cost-effectiveness of the Bay Area Express Lane Network.



### IntelliDrive<sup>SM</sup>

MTC has been involved with the IntelliDrive<sup>SM</sup> program (and its precursor program, Vehicle Infrastructure Integration) at the national and state levels since 2005. The purpose of this effort is to achieve strategic goals for enhancing safety, mobility and convenience. At the core of the IntelliDrive<sup>SM</sup> program is the development of

a networked environment supporting high-speed communications among vehicles, between vehicles and infrastructure components, and between vehicles and hand-held devices.

Caltrans and MTC currently operate the California IntelliDrive<sup>SM</sup> testbed on the U.S. 101/Route 82 corridor in San Mateo and Santa Clara counties. This testbed, which is an official part of the U.S. Department of Transportation's (USDOT) National IntelliDrive<sup>SM</sup> testing program, has been used by several car manufacturers, MTC and Caltrans to test IntelliDrive<sup>SM</sup> technology and applications such as:

- **Traveler Information**, which processes traffic data collected from IntelliDrive<sup>SM</sup>-equipped vehicles and sends 511 information directly into the vehicles
- **In-vehicle Signage**, which is used to send messages and warnings to motorists
- **Intersection Signal Violation Warning**, which warns motorists if they are driving too fast as they approach a traffic signal that is red or about to turn red
- **Curve Overspeed Warning**, which warns motorists if they are driving too fast as they approach a sharp curve
- **Open Road Tolling** using IntelliDrive<sup>SM</sup> at the Dumbarton Bridge toll plaza



MTC also is currently managing an IntelliDrive<sup>SM</sup> research project for USDOT's Urban Partnership Program. This project is testing the potential of IntelliDrive<sup>SM</sup> technology for toll lane operations. In fact, IntelliDrive<sup>SM</sup> may serve as enabling technology to support the implementation of the Bay Area Express Lane Network (see page 60).

### Personal Rapid Transit

Though still somewhat futuristic in the popular mind, personal rapid transit (PRT) could one day provide speedy, on-demand access to select destinations along specially built guideways. In brief, PRT systems usually comprise a small network of stations connected by a track, over which travel small, automated electric vehicles that can carry as few as two or as many as six passengers. The concept will gain visibility later this year when the first large-scale PRT system will open at Heathrow International Airport in London. Locally, a pilot demonstration system is also being tested at the NASA Ames research facility in Mountain View.

### Alternative and Renewable Fuels and Vehicle Technologies

In 2000, the California Air Resources Board adopted the Zero Emission Bus Regulation — a groundbreaking emission control rule that lays out both regulatory and investment paths to encourage the operation and use of zero emission buses in urban fleets. As part of the initial



demonstration, AC Transit operated three hybrid fuel cell buses and Santa Clara VTA deployed three fuel-cell-only buses. After 40,000 hours of operations, the AC Transit demonstration found that hybrid fuel cell buses have twice the efficiency of diesel buses and improved reliability. Starting in 2009, five Bay Area transit operators will participate in the advanced demonstration to further test the reliability and durability of the zero emission bus technology.

The California Alternative and Renewable Fuel, Vehicle Technology, Clean Air and Carbon Reduction Act of 2007 was signed into law by Governor Schwarzenegger in October 2007. This measure provides \$200 million annually through 2015 for three new air quality improvement

programs via increases to the smog abatement, vehicle registration and vessel registration fees. The three programs are: (1) the **Air Quality Improvement Program** to fund clean vehicle and equipment projects, and air quality research; (2) the **Alternative and Renewable Fuel and Vehicle Technology Program** to reduce petroleum use, increase the use of alternative fuels and pioneer the development of in-state bioenergy sources; and (3) the **Enhanced Fleet Modernization Program** to augment the state's existing voluntary accelerated vehicle retirement program.

These programs could spur innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change goals.



## Change in Motion

To speed travel and reduce congestion on Bay Area highways, the Transportation 2035 Plan:

- Creates an 800-mile Bay Area Express Lane Network. The estimated \$7.6 billion construction cost to build, finance and operate the network would be paid for with toll revenues. MTC estimates that over the 25-year plan period, the Bay Area Express Lane Network will generate net revenues in excess of costs of approximately \$6 billion. These funds will be used to pay for additional mobility improvements in the express lane corridors. Net revenues would be reinvested in the corridors in which they are generated; pending legislation gives funding priority to cost-effective public transit improvements and projects that reduce emissions.

## Price Highway Travel Demand

Express lanes, also called high-occupancy toll (HOT) lanes, are carpool lanes with a twist: buses and carpools use the lanes free of charge, but non-carpoolers are allowed to use available capacity in the lanes, too — for a price. In this way, express lanes provide “congestion insurance,” by giving travelers the option of a delay-free trip when they most need it.

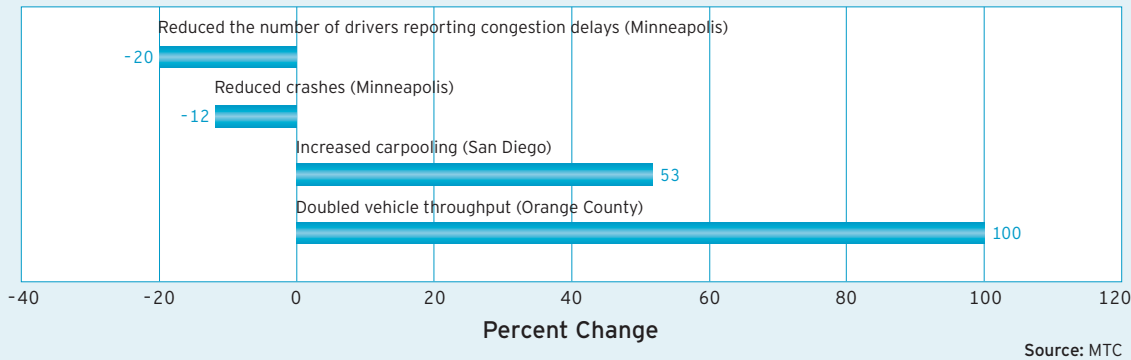
Cities throughout the country already are implementing express lanes to better manage their freeway systems, expand the choices available to travelers, and improve express bus service. Express lanes have been in operation for more than a decade in Southern California and in Houston, and in the past five years have opened in Seattle, Denver, Miami, Minneapolis and Salt Lake City. Surveys show most express lane travelers use the lanes just a few times a week, or even less. They use express lanes to bypass congestion when they are late to pick up a child at daycare, to squeeze more working hours out of a day, or to catch a plane. For this reason, and because revenue from express lanes often supports public transit service enhancements, express lanes are widely supported by travelers at all income levels.

An MTC poll taken in spring 2008 showed that 62 percent of Bay Area voters support the concept of an express lane network for the region.

The Transportation 2035 Plan creates a Bay Area Express Lane Network. As demonstrated by the “what if” analysis performed as part of the development of this plan (and described in Chapter 2), the pricing of freeway capacity can be an effective means of making progress toward performance objectives to reduce emissions, driving and delay. (For more information, see the supplemental *Performance Assessment Report*, listed in Appendix 2.) The Bay Area Express Lane Network, which is founded on the principle of choice, will demonstrate the benefits of congestion pricing, and could act as a stepping stone toward more comprehensive pricing strategies in the future.

The initial segments of the Bay Area Express Lane Network are scheduled to open in 2010 on a 14-mile stretch of Interstate 680 over the Sunol Grade, between Pleasanton and Fremont; on Interstate 580 through the Tri-Valley; and on the Interstate 880/Route 237 direct connectors. Plans also are under way to open express lanes on Route 85 and U.S. 101 in Santa Clara County. The Transportation 2035 Plan would extend the express lane concept to a connected

## Express Lanes – Demonstrated Success



network of express lanes spanning 800 miles, greatly improving travel options and freeway efficiency throughout the Bay Area.

### Bay Area Express Lane Network Completes the Priority System for Carpools and Buses

The Bay Area Express Lane Network is a strategy to accelerate completion of the region's carpool and public transit system — a key emission reduction strategy 30 years in the making (see the *2002 HOV Lane Master Plan Update*, listed in Appendix 3) but not yet complete due to a lack of funding. Finishing the system would mean the closing of gaps that inhibit seamless travel for carpools and buses, and the breaking of bottlenecks where existing carpool lanes end. MTC will convert to express lanes some 400 miles of carpool lanes that already

exist or are under construction, plus 100 new miles of fully funded lanes will be built in the next four years. The revenue generated will also be used to construct some 300 new miles of express lanes that close gaps and extend the system. In total, the 300 new miles amount to less than a 6 percent increase in total Bay Area freeway mileage, and more than half the added mileage is for gap closures that connect two existing carpool lanes.

### Efficiency Improvements Benefit All Travelers and Protect Carpool Time Savings

To keep express lane traffic flowing freely, toll rates will adjust dynamically to balance supply and demand based on data from roadway sensors used to monitor traffic conditions. Tolls during the most congested periods, when

carpool and bus traffic is heavy, will be comparatively high so only a small number of non-carpoolers — those who most need congestion insurance that day — will buy in. Tolls will be much lower during periods of lighter traffic. Non-carpoolers using the express lanes will pay their tolls through the FasTrak® system already in place on the region's eight toll bridges. With FasTrak® readers installed on overhead structures, tolls can be collected without forcing drivers to slow down or stop.

By balancing supply and demand in this way, express lanes make more efficient use of freeway capacity and thereby reduce congestion and emissions, while offering a new travel option. The express lanes on State Route 91 in Orange County carry twice as many vehicles per lane during the peak period as the regular mixed-flow lanes. Average travel speeds for travelers in all lanes along the Interstate 394 express lane corridor in Minneapolis have increased by 2 to 15 percent since the express lanes were introduced, and Seattle-area drivers save up to 10 minutes a trip by using the 9-mile express lane along State Route 167.

There is evidence that express lanes may actually increase carpooling by creating a monetary incentive to share the ride. Carpooling in San Diego County's Interstate 15 corridor has jumped 53 percent since the express lane opened (see chart above left), leaving travelers



to choose between paying a \$4 toll to drive alone or ridesharing for free. On Denver's Interstate 25, the number of carpools using the express lanes grew more in 2007 than the number of paying drivers.

Importantly, the Bay Area Express Lane Network will protect time savings for carpools and buses. State law requires that express lanes remain free-flowing. As space in an express lane becomes scarce, tolls rise. The higher tolls tend to reduce the number of paying vehicles, leaving more space for carpools and buses. Further,

## Benefits of Express Lane Network Compared to Carpool System, 2009 - 2050<sup>1</sup>

	Carpool Network	Express Lane Network	Cumulative Savings
Person hours of travel time (billions)	20.2	16.8	3.4
Carbon dioxide emissions (millions of metric tons)	335.3	325.0	10.3

<sup>1</sup> Figures are cumulative for the period between 2009 and 2050 and reflect differences in emissions for the Bay Area Express Lane Network and carpool system that could be built out based on funding available over this period. The travel and emissions forecasting methodology used in this preliminary analysis is documented in the *Bay Area HOT Network Study* (December 2008). Numbers are subject to revision based on future project-level environmental analysis to be performed for portions of the Express Lane Network.

tolls collected on the express lanes will fund a beefed-up enforcement effort, meaning additional California Highway Patrol officers will be available to cite drivers who attempt to use the lanes illegally.

The Express Lane Network also will ensure that the region has a priority system that functions well as the number of carpools and buses grow in the future. Even if we do not build express lanes, many Bay Area carpool lanes will eventually become too crowded during peak commute periods, and travel time advantages for buses and carpools will diminish. The fact is we will need to take action when this time comes.

The most likely solutions include: increasing the number of passengers required for a carpool during the most congested time periods (today, two people qualify as a carpool on most freeways while three persons are required on Interstate 80 and most toll bridges); or requiring


carpools to register to use the carpool lane. In a limited number of locations, where space is available, it may be possible to add an additional lane dedicated to carpooling. (However, the Bay Area Express Lane Network does not presently envision two-lane facilities.) While the Express Lane Network may not delay and will not avoid the need to increase carpool occupancy requirements, it does ensure that the lanes will not be underutilized when necessary changes are made.


## Revenue Stream Speeds Buildout, Reducing Congestion and Greenhouse Gas Emissions

One of the biggest benefits of express lanes is their capacity to generate revenues, which can be used to underwrite bonds and facilitate innovative project delivery strategies. With this revenue boost, the Bay Area could complete the planned carpool lane network 20 to 40 years




## Bay Area Express Lane Network

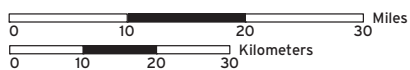
 Convert existing, under-construction and planned/already funded HOV (high-occupancy vehicle) lanes to express lanes

 Widen freeways to add future express lanes (to be built with Transportation 2035 funds)

 Freeway

 Highway

 Local Road



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faster than if we were to rely on traditional state and local funding sources. Preliminary analysis suggests that the faster buildout would deliver enormous reductions in travel delays and tailpipe emissions, including carbon dioxide.

By relieving congestion and increasing average travel speeds sooner than would be possible by building carpool lanes with traditional funding sources, the Express Lane Network is projected to reduce CO<sub>2</sub> emissions by more than 10 million metric tons over the next 40 years, and to save some 3.4 billion person hours of travel

over that period (see table on page 62). This travel time savings has an estimated value of \$18 billion.

MTC estimates a \$7.6 billion cost to build, finance and operate the Bay Area Express Lane Network over the next 25 years. With gross express lane toll revenues reaching \$13.7 billion over the same period, the remaining \$6.1 billion in net revenue would be available to finance additional improvements in the express lane corridors. Expenditure plans for use of net revenue will be developed through a bottom-up

process in each individual travel corridor, led by county congestion management agencies. The timing of these improvements will depend on how fast the Express Lane Network is built out and when net toll revenues begin to be generated; these topics are the subject of ongoing technical studies and discussions among partner agencies.

## Next Steps

As described above, work is already under way on three express lane corridors. In collaboration with its regional partners, the Commission adopted a legislative framework to guide implementation of the Bay Area Express Lane Network. These principles (see page 65) form the basis for pending legislation — Assembly Bill 744 (Torrico). Under AB 744, the Bay Area Toll Authority — MTC's affiliate agency that currently administers toll revenue from the region's seven state-owned toll bridges — is authorized to finance, construct and operate a complete, regionally managed Express Lane Network.

Other key steps to implement the network include project-level design and environmental review consistent with federal and state laws. This analysis will consider a full range of environmental impacts including water and air quality, greenhouse gas emissions, vehicle miles traveled, traffic congestion and social equity.

## Bay Area Express Lane Network Principles

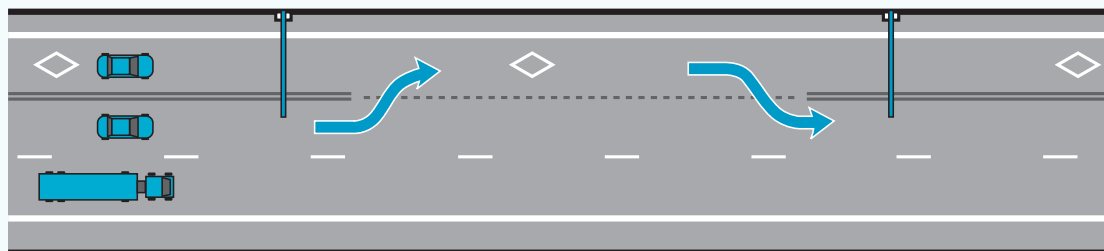
In April 2009, MTC adopted principles to guide development and implementation of a Bay Area Express Lane Network. The five primary objectives are listed below.

- More effectively manage the region's freeways in order to provide higher vehicle and passenger throughput and reduce delays for travelers in all corridors, especially those traveling by carpool, vanpool or bus
- Provide an efficient, effective, consistent and seamless system for customers of the network
- Provide benefits to travelers within each corridor commensurate with the revenues collected in that corridor, including expanded travel options and funding to support non-highway options that enhance effectiveness and throughput
- Expedite the implementation of the network using a rapid delivery approach that, to the greatest extent possible, and recognizing safety, operational and environmental constraints, relies upon existing highway right of way and minimizes the environmental impact
- Use express lane toll revenue to finance construction of the network and other corridor improvements, to operate and maintain the network, and to provide transit services and improvements in the network corridors



### How It Works

- Non-carpool drivers with a prepaid FasTrak® toll tag can choose to pay a toll and use the express lane.
- Transit vehicles, carpools, vanpools and motorcycles can use the express lane at no charge.



1. The express lane is separated by double yellow lines.
2. Electronic signs will display the current toll for solo drivers with FasTrak®. The toll will vary based on the level of congestion in the express lane and will be adjusted to maintain a minimum speed.
3. Signs and lane striping at access points will provide drivers safe entry and exit.
4. For non-carpool drivers who choose to use the express lane, an overhead antenna will read their FasTrak® toll tag and the correct toll will be automatically deducted from their prepaid FasTrak® account — no toll booths, no slowing. Express lane rules and use will be enforced by the California Highway Patrol using visual and electronic means.

## Change in Motion

Continuing MTC's commitment to provide mobility options for residents in low-income communities, the Transportation 2035 Plan:

- Boosts funding for the Lifeline Transportation Program by \$400 million in discretionary funds – more than doubling the size of the \$300 million program previously established by the Commission.

## Provide Equitable Access to Mobility

MTC's Lifeline Transportation Program supports projects that address mobility and accessibility needs in low-income communities throughout the region. In 2005, MTC reaffirmed its commitment to the program in the regional transportation plan by: (a) adopting an Access to Mobility goal, which calls on MTC to further advance the region's understanding and efforts to improve mobility for older adults, the disabled, low-income persons and schoolchildren; and (b) dedicating \$216 million of new funds to be available beginning in fiscal year 2009 for transportation projects that address the mobility needs of low-income communities.

To jump-start the program before funds become available in 2009, MTC approved an additional \$18 million interim Lifeline funding program in 2005. Guidelines were established with the goal of funding community-based transportation projects developed through a collaborative and inclusive process. Projects needed to address transportation gaps or barriers identified in locally based needs assessments, and they had to expand transportation choices with new or expanded services. In 2006, 39 projects were funded through the first interim funding cycle. A second funding cycle in 2009 funded an additional 60 projects. (See table above right.)

### Lifeline Projects Funded, by Project Type

First and Second Funding Cycles, 2006 and 2009

Project Type	Number of Projects
Transit Operations	31
Senior/Children's Transportation	7
Transit Capital	27
Community Shuttles	14
Pedestrian Infrastructure	6
Access to Autos	5
Information and Outreach	4
Fare Assistance	3
Bike Access	2
<b>Total</b>	<b>99</b>

Since the Commission's initial commitment in the previous long-range plan, the Lifeline Program received an influx of federal and state funding, bringing the program total to nearly \$300 million. As part of this plan, the Commission reaffirms its commitment to this program by adding \$400 million in discretionary funds, raising the amount dedicated to the Lifeline Transportation Program to nearly \$700 million over the 25-year term of the Transportation 2035 Plan. Possible new emphasis areas could include mobility management services (see next page) and means-based fare assistance programs.



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## Coordinated Plan/ Mobility Management

In December 2007, MTC adopted the Coordinated Public Transit Human Services Transportation Plan, which assessed the transportation needs of the elderly, disabled and low-income populations in the region. The plan focuses on ways to better coordinate service and programs among the three populations.

One strategy outlined in the plan is to develop and implement **mobility management** — a centralized system that provides information about transportation options, and coordinates responses to requests for transportation services. By serving as a clearinghouse for information about transportation options, mobility managers can facilitate the most cost-effective solution or service for the traveler. The main objectives of mobility management are to:



- **Improve transportation options** for the public, particularly low-income, elderly and disabled populations
- **Reduce confusion** about what transportation options are available by consolidating transportation information in one centralized location
- **Improve coordination** among all transportation service providers, enhancing commitments to delivering service that meets the needs of low-income, elderly and disabled populations
- Through coordination, **provide cost-effective delivery of service**, benefiting both customers and transportation providers

Mobility managers could be transit operators, congestion management agencies, human services agencies, or others that have the capacity to implement the activities listed below.

### Planning

- Creating and maintaining an inventory of transportation services
- Identifying opportunities for coordination of service delivery
- Monitoring and influencing land-use decisions so that social service and health facilities locate near transit

### Coordinating

- Facilitating relationships among service providers to reduce service duplication
- Serving as a clearinghouse for service and trip requests
- Serving as a resource for policy bodies that encourage coordination among transit and human services transportation providers
- Providing coordination services for employers and human services agencies such as travel training, trip planning or ride sharing
- Promoting access through marketing and outreach

### Operating

- Developing and operating call centers to coordinate information for all travel modes, which may include managing eligibility requirements for various services
- Assisting with technological tools to improve service delivery, such as GIS mapping programs, GPS technology for vehicles, dispatching and monitoring technologies, and those that track costs and billing
- Contracting with public, nonprofit or private transportation providers to deliver efficient service

The planning and establishment of mobility management services are eligible for funding under the Lifeline Transportation Program.



## Change in Motion

To promote walking and bicycling as viable, safe transportation choices for Bay Area residents, the Transportation 2035 Plan:

- Commits \$1 billion in discretionary funds to finance the Regional Bikeway Network. The top priority is to complete the on-street portion of the 2,100-mile network.

## Keep Walking and Rolling

Each day in the Bay Area, residents use their bikes and feet to take over 3 million trips that do not rely upon a car. Yet despite the already high number of cyclists and pedestrians going to work, school, shopping and elsewhere, much more can be done to encourage these trips — and to make them safer and more convenient.

### Bicycles

MTC in 2001 identified a 2,100-mile network of regionally significant bicycle routes that will cost an estimated \$1 billion to complete. (This estimate excludes the cost of providing bicycle access across the three toll bridges that do not already have bicycle paths in place or planned: the Richmond-San Rafael and San Mateo-Hayward bridges, and the west span of the San Francisco-Oakland Bay Bridge.) Selected from the nine Bay Area counties' own bicycle plans, routes included in the Regional Bikeway Network link neighborhoods to work, transit and major activity centers. Routes within Priority Development Areas (PDAs, see page 72) account for approximately 84 percent of the Regional Bikeway Network.

In the Transportation 2035 Plan, MTC has committed \$1 billion to finance this Regional Bikeway Network. The top priority is to complete the on-street portion of the 2,100-mile

network. While most of the Regional Bikeway Network consists of on-street bike lanes and bike routes, the network also includes the Bay Trail and other dedicated bicycle/pedestrian paths that connect on-street bicycle routes. A recent study by the city of San Jose found that 38 percent of the bicyclists on a city trail that is part of the Bay Trail network were using the path as a commute route to and from work.

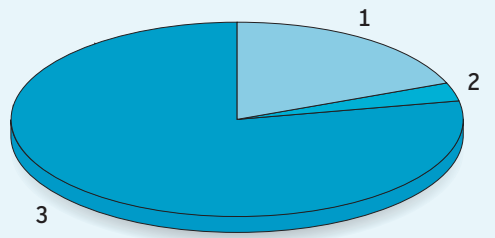






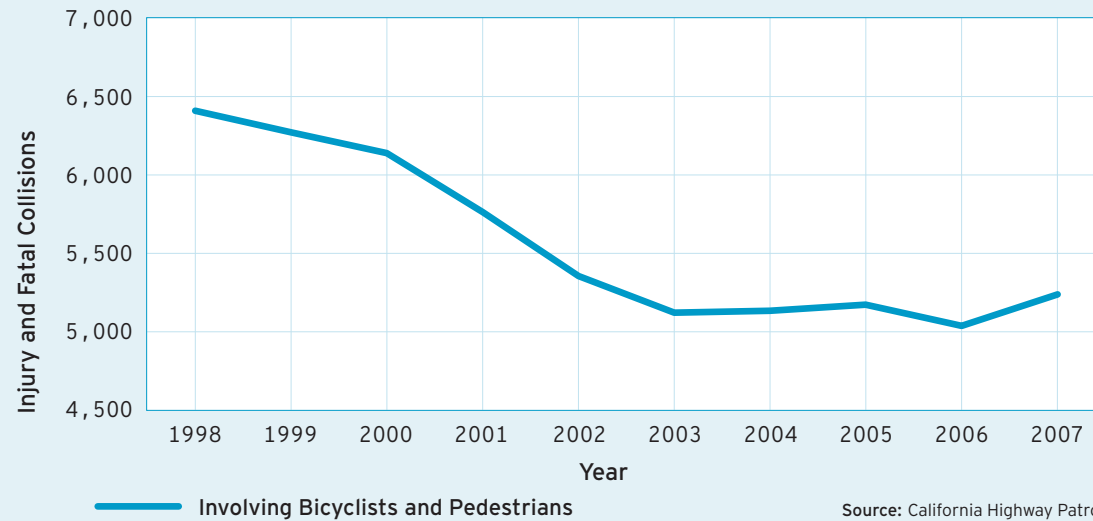
## Average Annual Fatal Vehicle Collisions

Bay Area Roadways, 1998 - 2007



	Number of Collisions	Percent of Total
1 Involving Pedestrians	110	19%
2 Involving Bicyclists	18	3%
3 All Other Fatal Collisions	442	78%
Annual Average	570	100%

## Injury and Fatal Vehicle Collisions Involving Bicyclists and Pedestrians on Bay Area Roadways, 1998 - 2007



## Pedestrians

Due to the varying costs and scopes for street improvements such as sidewalks, crosswalks and countdown signals, it is hard to accurately gauge the regional investment needed for pedestrian upgrades and safety countermeasures. As a result, the Transportation 2035 Plan contains no analog to the Regional Bikeway Network for pedestrians.

However, the Transportation 2035 Plan does double funding for MTC's Transportation for

Livable Communities (TLC) program to \$2.2 billion over the next 25 years. The TLC commitment will likely be used to finance projects that improve pedestrian access to housing and transit. In addition, the new multiagency Transportation Climate Action Campaign will be a funding source for much-needed pedestrian improvements. Safe Routes to Schools and Safe Routes to Transit projects will be eligible for funding under this innovative climate initiative (See page 47 for more information).

## Safety

Around the Bay Area, the number of crashes that result in injuries or fatalities has been gradually declining for the past 10 years. This includes both vehicle-to-vehicle collisions and motor vehicle collisions involving bicyclists or pedestrians (see chart above). But walkers and bicyclists are disproportionately involved in fatal collisions. Pedestrians are especially vulnerable, as 19 percent of all fatal collisions regionwide over the past decade have involved pedestrians (see pie chart above). Combined,





bicyclists and pedestrians were involved in 22 percent of fatal collisions in the Bay Area during that period.

Recognizing the need to make walking and biking safer in the Bay Area, the Transportation 2035 Plan establishes a performance objective to reduce the number of injury and fatality collisions involving bicycles and pedestrians by 25 percent (each) regionwide by 2035.

Interestingly, the likelihood that a given cyclist or pedestrian will be struck by a vehicle is inversely correlated with the amount of bicycling and walking in an area. With greater levels of cycling and walking, there is greater awareness among cyclists, pedestrians and drivers alike. So a continued increase in the number of people using their bicycles and feet to get around is likely to make conditions safer for cyclists and pedestrians in the years ahead.



## Change in Motion

To encourage a regional shift toward higher-density growth patterns, protect the environment, dampen the growth in vehicle miles traveled and make our investments in transportation — especially transit — more cost-effective, the Transportation 2035 Plan:

- Doubles funding for MTC's Transportation for Livable Communities (TLC) program to \$2.2 billion over the next 25 years.
- Leverages TLC investments to support compact, transit-oriented development in established urban districts identified as Priority Development Areas (PDAs) through the multiagency FOCUS initiative.
- Seeks to protect industrial land in the region's urban core that serves critical goods movement facilities such as the Port of Oakland and the Bay Area's major commercial airports.

## Take Bold Steps Toward Focused Growth

Capitalizing on the regionwide momentum generated through a decade of support for livable communities and tighter integration of transportation and land-use planning, the Transportation 2035 Plan intensifies the Commission's efforts to focus growth in established communities around the Bay Area. MTC has joined forces with the Association of Bay Area Governments, the Bay Area Air Quality Management District and the Bay Conservation and Development Commission to establish a joint regional planning initiative known as FOCUS, which is the regional blueprint plan for the San Francisco Bay Area.

The centerpiece of the FOCUS strategy is the creation of Priority Development Areas (PDAs) in which incentives for compact, transit-oriented development will be used to help bridge the gap between regional objectives and local land-use authority. FOCUS also calls for Priority Conservation Areas, or PCAs, in which cities and counties will have incentives to resist suburbanization and preserve open spaces.

Station Area Planning Grants and technical assistance are available through FOCUS to assist local jurisdictions with the transformation of



Priority Development Areas from potential areas that are served by transit to well-planned complete communities. An incentive-based approach to regional planning has already been embraced by more than 60 city and county governments that have volunteered to designate some 120 separate areas as PDAs. Local governments have estimated that these PDAs, which together account for only about 3 percent of the region's land area, will be able to accommodate as much as 56 percent of the Bay Area's population and employment growth through 2035 — all in locations accessible to transit. Many jurisdictions have indicated that with additional financial assistance their respective PDAs could accommodate more of the region's growth.



To help nurture PDAs, the Transportation 2035 Plan doubles funding to \$2.2 billion for MTC's Transportation for Livable Communities (TLC) program, which supports multimodal travel, more livable neighborhoods, and the development of jobs and housing in existing town centers and near transit.

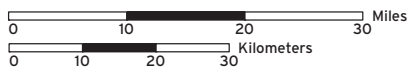
### Focused Growth Pays Mobility, Livability Dividends

Channeling much of the Bay Area's growth into PDAs will increase transit ridership, promote more bicycle and walking trips, and shorten the length of automobile trips, thus helping to reduce both vehicle miles traveled and emissions

## Priority Development Areas and Priority Conservation Areas

-  Priority Development Area
-  Priority Conservation Area

-  Freeway
-  Highway
-  Local Road



PDA and PCA map data courtesy of ABAG.  
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of carbon dioxide and other pollutants. People living in focused, compact neighborhoods of the type envisioned for PDAs travel 20 to 40 percent fewer vehicle miles each day than those who live in the sprawling suburban tracts that typify the Bay Area's post-World War II development pattern. This translates into a directly proportionate reduction in carbon dioxide emissions from personal travel. The form and location of homes in PDAs also makes them easier to heat and cool, and they require less water. This, in turn, will reduce CO<sub>2</sub> emissions associated with power generation for those utilities.

## Challenges Ahead

FOCUS seeks to work with local governments and others in the Bay Area to collaboratively find ways to support focused growth and to overcome the challenges that can hinder its implementation. Chief among these challenges are the following:

### Fiscal Imbalances

While offering significant regional benefits, PDAs can be costly for local governments. Infill projects generally are more difficult and expensive than “greenfield” development (built on

land that was previously agricultural or open space), and service deficiencies for existing residents frequently have to be remedied before new growth can even be contemplated. And the structure of local government finance may make it difficult or impossible to recover many of the public costs associated with community transformation. Capital budgets submitted with the first round of PDA applications total tens of billions of dollars. Cities and counties will require direct financial assistance to make focused growth a reality.

### Urgency

In recent decades, high housing costs have led to a “drive till you qualify” development pattern, with much of the region's growth being pushed outside of the region into the Central Valley and other adjacent regions. The redistribution of growth is a long-term solution to the Bay Area's transportation and climate issues. But we must start making substantial progress now if the FOCUS initiative is to be successful over the long haul. Absent a concerted response to the present intersection of local and regional priorities, local governments' interest in the FOCUS effort may wane and growth could once again follow the path of least resistance — with expensive and potentially dire consequences for the entire region. Bay Area cities and counties have identified and nominated PDAs because they are acutely aware of local and regional needs for transportation services, housing choice and climate protection.





## Moving Goods in Northern California

The goods movement transportation system is a complex network including airports and seaports, rail facilities and rail lines, and highway and roadway infrastructure. It is closely tied to state, national and international transportation systems, with California serving as the nation's primary gateway for goods manufactured in Asia.

### Land-Use Changes Impact Goods Movement

MTC's 2004 *Regional Goods Movement Study* found that goods movement industries and industrial businesses that rely on our transportation systems play an important role in the region's economy. However, while development and regional growth trends indicate increased demand for goods movement services, research indicates that affordable, close-in location options for goods movement businesses are becoming more difficult to find.

Under current land-use policies, the demand for well-located land for goods movement businesses will greatly exceed the industrial land supply in the future. If current trends continue, by 2035 only 60 percent of the goods movement industry demand for industrial land in the inner East Bay and north Peninsula will be accommodated. This will result in less industrial activity in the future compared to today, and over time,



large numbers of Bay Area goods movement businesses and jobs serving the central Bay Area will have to locate outside the region. About 65 percent of the industrial activities are anticipated to disperse outward to the inland San Joaquin Valley. Due to the region's geography and transportation system, the demand shifting outward will be heavily focused on industrial locations with access to the central Bay Area markets they service via Interstate 580.

Impacts to the Bay Area include increased truck trips, longer truck trips and a net increase in emissions as more goods movement businesses are pushed out of the inner Bay Area. Some specific impacts include:

- 87,000 good-paying, blue/green collar goods-movement-related jobs displaced
- 300,000 more truck miles traveled on regional routes

- 8,400 daily truck trips shifted to new, mostly longer routings, including 6,100 on Interstate 580
- 2 percent increase in particulate matter emissions
- \$400 million-per-day increase in transportation costs to businesses

MTC, in concert with the Joint Policy Committee, will consider specific strategies to address goods movement business displacement. Possible strategies include: coordinated planning to ensure that FOCUS PDAs do not adversely affect the economic potential of goods movement industries; educating cities and counties about the impacts of their local land-use decisions; and exploring best practices for making goods movement businesses a better “neighbor.”

### New Investments Planned for Trade Corridors

In Northern California, trade primarily occurs along two major trade corridors connecting the Bay Area, Sacramento and Central Valley regions: 1) the Central Corridor, which runs from the Port of Oakland roughly along Interstate 80 to Sacramento and across the Sierra Nevada mountains on to Chicago; and 2) the Altamont

Corridor, which runs from the Port of Oakland, along Interstates 880, 238 and 580 to the Central Valley, connects with Interstate 5 and State Route 99 at the north end of San Joaquin Valley and eventually with the southern transcontinental rail route at the south end of the Central Valley. Together these corridors connect the major regions with one another and with critical national and international trade routes. The focus of this trade activity is the Port of Oakland, the nation’s fourth-busiest container seaport and a critical export port for the state.

In November 2006, California voters approved Proposition 1B, a \$19.9 billion transportation infrastructure bond. Proposition 1B included a \$2 billion Trade Corridors Improvement Fund (TCIF) to improve goods movement infrastructure statewide. In 2008 the state augmented the program to nearly \$2.5 billion (and programmed just over \$3 billion, in anticipation of additional federal funding) for high-priority goods movement projects.

A coalition of regional agencies in Northern California, representing 23 counties and the three major ports, was able to secure \$825 million for 14 Northern California transportation projects that are to be in construction by 2013. Nearly \$550 million of this total will fund seven key Bay Area projects, shown on the map on the facing page.

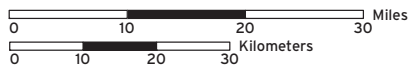


The investments are concentrated in the Central and Altamont corridors, focusing on the dual goods movement concerns of: 1) supporting the economic interconnections of the Sacramento, Central Valley and Bay Area regions through interregional goods distribution corridors; and 2) ensuring the future viability and growth of the Port of Oakland as a trade gateway for both imports and exports.

(See also MTC’s *Goods Movement Initiatives, 2009 Update* listed in Appendix 3, for more information.)

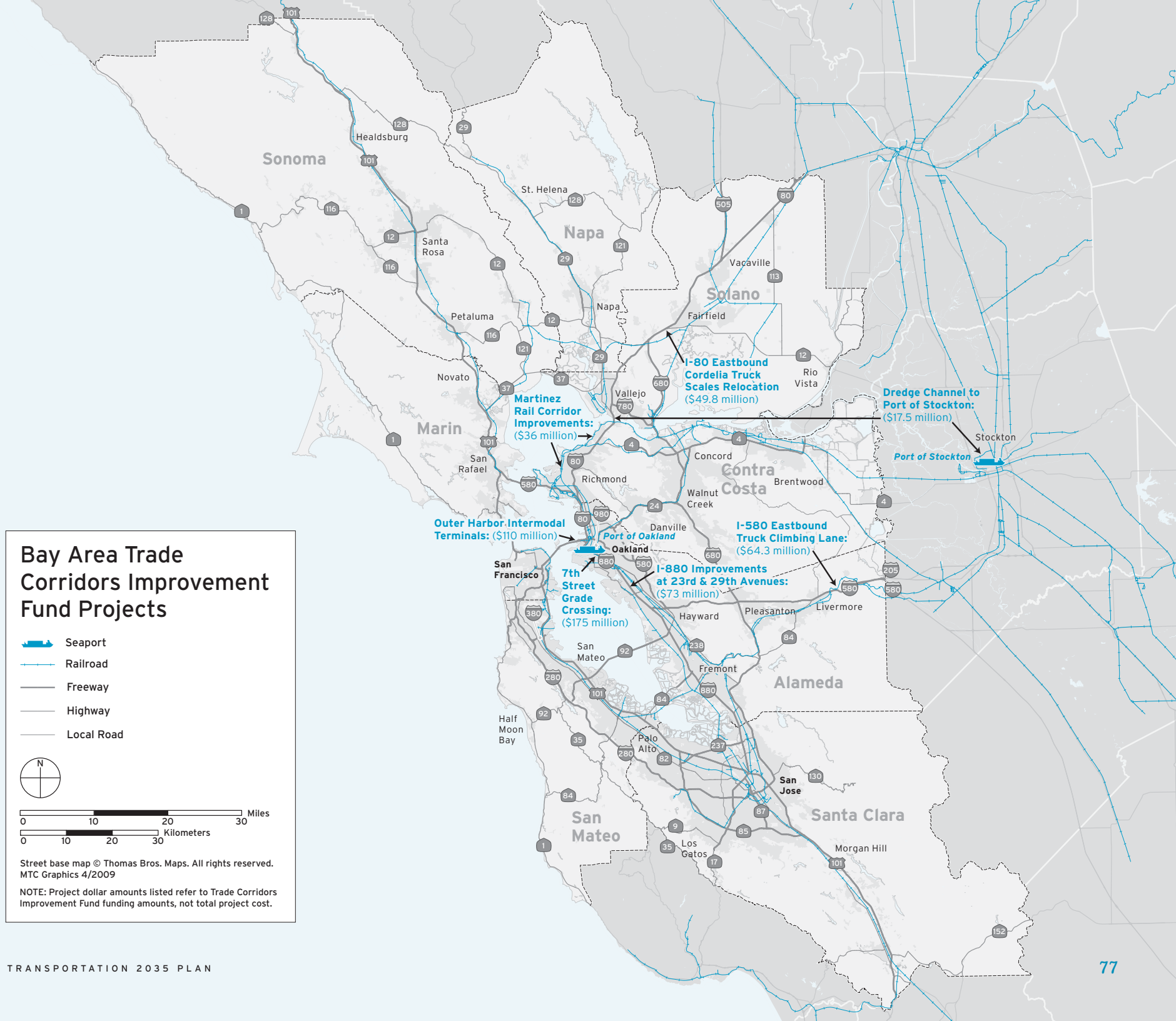
## Bay Area Trade Corridors Improvement Fund Projects

-  Seaport
-  Railroad
-  Freeway
-  Highway
-  Local Road



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NOTE: Project dollar amounts listed refer to Trade Corridors Improvement Fund funding amounts, not total project cost.





## Change in Motion

To expand the reach and utility of public transportation in the region, the Transportation 2035 Plan:

- Incorporates the MTC Resolution 3434 Strategic Plan, an updated framework to successfully deliver nearly \$18 billion in key transit projects as part of the Regional Transit Expansion Program.
- Facilitates integration of the California High-Speed Train system into the Bay Area rail network.

## Deliver the Next Generation of Transit

The 2001 adoption of MTC Resolution 3434, the Regional Transit Expansion Program, marked a major milestone in Bay Area transportation history. Resolution 3434 is a long-term, multifaceted funding strategy for directing local, regional, state and federal dollars to nearly two dozen high-priority bus, rail and ferry expansions. Because it signifies a firm consensus on this important issue, Resolution 3434 allows the region to effectively focus its

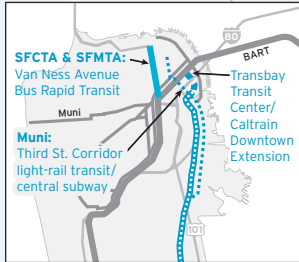
advocacy in both Sacramento and Washington, D.C., to deliver the next generation of transit expansion for the Bay Area.

When fully implemented, these transit expansions will:

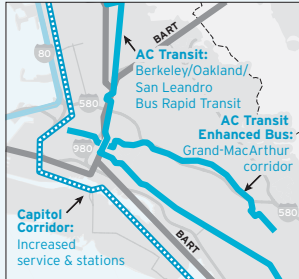
- provide 140 new route miles of rail
- provide expanded express bus service throughout the region and new bus rapid transit services in urban corridors
- institute several new ferry routes on San Francisco Bay
- build major new transit hubs in downtown San Francisco and San Jose



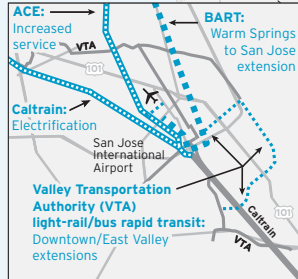
### San Francisco Detail



### Oakland Detail



### San Jose Detail



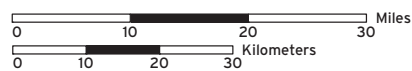
## Resolution 3434 Bus, Rail and Ferry Network

### Rail Projects

- Rail Service Upgrade
- Rail Extension
- Existing Rail

### Bus and Ferry Projects

- Express Bus Route
- Bus Rapid Transit Route
- Proposed Ferry Route



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## A Framework for Project Delivery

In fall 2008, the Commission adopted the Resolution 3434 Strategic Plan. The purpose of the Strategic Plan is to provide a framework for successful program and project delivery. It serves as a vehicle to address project delivery challenges; reassess project costs, scopes and funding; monitor project progress and milestones; provide advocacy support; and take specific funding actions to allow ready-to-go projects to move into implementation. The Strategic Plan establishes agreements between MTC, transit providers and funding partners to work together to expedite delivery of important transit improvements.

## Transit Expansion and Focused Growth Go Hand in Hand

Resolution 3434 includes a Transit-Oriented Development (TOD) policy, adopted by the Commission in 2005, that addresses multiple goals: improving the cost effectiveness of regional investments in new transit expansions; easing the Bay Area's chronic housing shortage by creating vibrant new communities; and helping preserve regional open space. The TOD policy will help stimulate the construction of at least 42,000 new housing units along the Bay Area's major new transit corridors, and help the region boost overall transit ridership by over 50 percent by 2035.

## High-Speed Rail on a Fast Track

The California High-Speed Rail Authority (CHSRA) plans to build an 800-mile High-Speed Train (HST) system for intercity travel in California between the major metropolitan centers of Sacramento and the San Francisco Bay Area in the north, through the Central Valley, to Los Angeles and San Diego in the south. The HST system would use electrically propelled steel-wheel-on-steel-rail trains capable of maximum operating speeds of 220 miles per hour on dedicated, fully grade-separated lines. The HST system is projected to carry as many as 93 million passengers annually by the year 2030.

High-speed trains would offer the Bay Area a new transportation option, providing a high-speed rail connection to Southern California from San Francisco (via San Jose), utilizing the Caltrain corridor along the Peninsula. After an exhaustive review of route options (including an MTC analysis completed as part of the Regional Rail Plan), a Pacheco Pass alignment was selected by the CHSRA as the fastest and most environmentally responsible route into the Bay Area, minimizing impacts on wetlands and eliminating the need for another San Francisco Bay crossing, bridge or tunnel. In addition, the CHSRA is committed to enhancing existing and pursuing new "regional rail" commuter and HST service via the Altamont Pass between Sacramento/Northern San Joaquin Valley and



Oakland/San Jose in partnership with local and regional agencies and transit providers.

The passage in November 2008 of Proposition 1A, a \$10 billion dollar bond measure, is a huge first step in the realization of the high-speed rail dream, raising \$9 billion for building the high-speed train system and \$950 million for improvements to other rail services that connect to the high-speed train service. The Bay Area is slated to receive \$408 million of the \$950 million for improvements to the Altamont Corridor Express, BART, Caltrain, San Francisco Muni, and Valley Transportation Authority light rail. In addition, the American Recovery and Reinvestment Act (2009) includes \$8 billion for high-speed trains in the United States – the most ever allocated for rail at one time.



# Building Momentum for Change

CHANGE IN MOTION

“Plans are nothing; planning is everything.”

DWIGHT D. EISENHOWER





# Building Momentum for Change

The changes called for in the Transportation 2035 Plan are significant, and they will have a positive impact on the region. Still, when we measure the extent of that progress, we find that it falls short of attaining the Transportation 2035 performance objectives set by the Commission — in some cases, well short. While the plan does make meaningful headway when it comes to reducing delay and keeping our system in a state of good repair, achieving appreciable reductions in greenhouse gas emissions and vehicle travel proves to be a more elusive goal. To continue making progress toward our performance objectives — to keep change in motion — the Bay Area must take additional bold steps beyond the Transportation 2035 Plan.

It will take all of us to build the momentum for change, and the overarching question posed by the Transportation 2035 Plan can be stated simply: Is the Bay Area ready for change?



## Are We Ready for Change?

What a difference two years can make! When we launched the Transportation 2035 planning effort in 2007, the U.S. economy appeared relatively stable, though gasoline prices were beginning a steep climb to over \$4 per gallon a year later. Now, in the spring of 2009, gas prices have plummeted — but so too has the housing



market, the financial sector, and the rest of the economy along with them. Many had expected an economic slowdown, but few had expected it to arrive with such sudden and destructive force. Our state and region have not been spared. The unemployment rate in California is in double digits, and the Bay Area is enduring a painful and prolonged recession. Anxiety is understandably high.

### Crisis Brings Opportunity

In tough times like these, it is tempting to abandon ambitious goals and just stick to the basics: food, shelter and a steady paycheck. But every crisis brings opportunity. And every missed opportunity makes the next crisis all the more likely. What opportunities for transportation reform does the current economic calamity contain?

- A federal stimulus package — the American Recovery and Reinvestment Act of 2009 — that not only creates near-term construction jobs but also moves us along the path toward a new energy economy
- A shift in America's over-reliance on two dominant modes of travel (auto and air) toward more sustainable alternatives such as passenger rail
- An acceleration of the local self-help movement in transportation finance as Sacramento budget raids continue

- A renewed interest in urban living as Baby Boomers become “empty nesters” and as the climate consequences of suburban sprawl hit home

To a large extent, the Bay Area already has begun to seize these opportunities, as reflected in the priorities of the Transportation 2035 Plan. The vast majority of the plan's revenue is generated right here in the region, and more than 80 percent of the plan's total budget is invested in repairing the roads, bridges and transit systems in the existing urbanized area. Funds devoted to system expansion are overwhelmingly focused on public transit, with less money dedicated to road widening on a percentage basis than in any other major U.S. metropolitan area.

As noted earlier, however, the Transportation 2035 Plan's progressive investment program isn't nearly enough to achieve on its own the Bay Area's aggressive goals to reduce traffic congestion, vehicle travel per person, and greenhouse gas emissions. Nor would a radical shift in the plan's spending blueprint appreciably affect the performance outcome.

This chapter began with a quotation from Dwight Eisenhower about the importance of planning. Our 34th president also was acutely aware of the predilection of military leaders “to fight the last war.” For some time now, the Bay Area's transportation policy debate has had

a similar feel: advocates focus all their energy on trying to advance or obstruct expansion projects even though repeated modeling analyses (including those conducted for this plan) have demonstrated the extremely limited impact of capital investment by itself on transportation system performance.

### The Promise of Pricing and Focused Growth

If the region is to close the vast gap between current conditions and our 2035 performance objectives, we need to stop arguing over projects and start forging a united strategy to advance the two policy initiatives that will really make a difference: road pricing and focused growth. It is no accident that conges-

tion pricing and greater densities are the respective “third rails” of transportation and land-use policy. There is something about each strategy to make just about everybody mad.

The Bay Area’s failure to make much headway in implementing these strategies isn’t for lack of trying. But our efforts to date have been disjointed and half-hearted, and often have tended to fizzle when the economy sours. As the Transportation 2035 Plan is adopted, we find ourselves in just such a moment again.

We will have some new tools at our disposal this time around. Senate Bill 375, authored by State Senate President Pro Tem Darrell Steinberg, will put the force of state law behind efforts to better link transportation investment and land-use decisions in the successor plan to

Transportation 2035. And the stage is set for potentially transformative change in federal policy on tolling when the 111th Congress and President Obama take up authorization of the surface transportation program (see “A New Beginning” on page 85). But the issue isn’t just whether our state and federal leaders give us the tools to tackle focused growth and road pricing. It is also whether Bay Area leaders will have the courage to pick up those tools and use them.

In the end, “change in motion” requires a change of mind-set. So we return to that lingering question posed by this performance-based transportation plan: Is the Bay Area ready for change? The answer is up to all of us.

The answer is up to you.





## Addressing Transit Sustainability

Over the past several decades, the Bay Area has made a huge investment in its public transit system. Indeed, our region has one of the most developed and diverse public transit systems in operation today — with historic cable cars climbing steep hills; local shuttles, paratransit vehicles and buses traveling along arterials; express buses zipping along in carpool lanes; light-rail, rapid-rail and commuter-rail services carrying riders to key regional nodes; and ferries criss-crossing the Bay. However, with regional transit operating shortfalls soaring to \$8 billion and capital replacement shortfalls at \$17 billion over the next 25 years, the Transportation 2035 Plan confirms that, for many operators, the current transit system is not sustainable. The arduous task of coping with these shortfalls ultimately falls to the Bay Area's 26 transit operators, each of whom must achieve a balanced budget on an annual basis. But the collective magnitude of these shortfalls is clearly a cause for regional concern — and regional action.

Our region needs to find alternative approaches to improve transit's core performance and financial stability. MTC believes that the most viable alternative is to undertake a fundamental reassessment of the region's public transit system, tackling tough questions such as:

- Can we continue to afford to serve the same travel markets with multiple services?



- Can we continue to afford to support over two dozen separate transit agencies when far fewer might suffice?
- Can we continue to afford to accommodate inconsistent service policies when simpler fare and schedule agreements among operators are possible?

The issue of transit sustainability has been examined already by some individual transit operators. Examples include Santa Clara Valley Transportation Authority's 2007 "Comprehensive Operations Analysis" and San Francisco Municipal Transportation Agency's 2008 "Transit Effectiveness Project." The common themes in these analyses include: identifying changes in market demand; developing cost-

effective changes in how service is delivered; improving service reliability and convenience to attract new riders; and creating an effective multiyear transition to move riders into more productive services.

Following suit, the Commission has committed in the Transportation 2035 Plan to proceed with a Regional Transit Sustainability Project to identify service productivity improvements that will yield more from the region's existing investment in transit services. In parallel with this analysis, the Commission will pursue strategies to secure new transit operating revenues. Based on results of this project, the Commission intends to adopt reforms prior to the allocation of any new regional revenues for transit operations.



## A New Beginning

A modern, smooth-functioning national surface transportation system is essential for economic success in a global economy, and is also a key determinant of the quality of life enjoyed by citizens throughout America. Yet for too long — since substantial completion of the Interstate Highway System in the late 1980s — this country has lacked a clear, comprehensive, well-articulated and widely understood strategic vision to guide transportation policymaking at the national level.

In 2005, Congress created the National Surface Transportation Policy and Revenue Study Commission to undertake a thorough review of the nation's transportation assets, policies, programs and revenue mechanisms, and to outline a coherent, long-term transportation vision that would serve the needs of the nation and its citizens. After an intensive 20-month study period, in

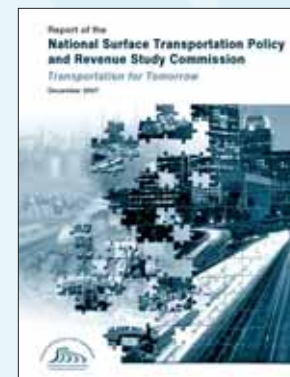


December 2007, the National Commission issued its *Transportation for Tomorrow* report urging the United States to “create and sustain the preeminent surface transportation system in the world.”

The principal recommendation of *Transportation for Tomorrow* is that the federal surface transportation program, scheduled to expire in September 2009, should not be reauthorized in its current form. Instead, Congress should make a new beginning and write the next transportation bill on a clean sheet of paper. The nation's future transportation policy is recommended to be organized along the 3 R's of **reform**, **restructuring** and **reinvestment**, as follows:

- We must **reform** how the nation upgrades and expands its transportation network, from how we pick the projects in the planning process to how we build them in the field. Federal investment should be guided by a national surface transportation strategic plan. The investment should be subject to benefit-cost analysis and performance-based outcomes, just as in the private sector. The time to complete environmental reviews must be shortened, in conjunction with other measures that speed the design and construction of new highway and transit capacity.

- We must **restructure** the federal transportation investment programs to concentrate on areas of genuine national interest. The 108 separate categorical surface transportation programs should be consolidated into 10 new initiatives, such as upgrading the nation's transportation infrastructure to a state of good repair; improving our global gateways and national goods movement system; and restoring mobility in congested metropolitan areas with populations of greater than 1 million.
- We must **reinvest** in our surface transportation and raise new revenue from the private sector as well as all levels of government (federal, state and local). The additional public funding should come primarily from users of the transportation system who will benefit the most from its improvement, whether in the form of higher fuel taxes and truck weight charges, a new fee on passenger rail tickets and container cargo, or tolling and congestion pricing to fund new capacity on the Interstate System. No one likes higher taxes or fees, but a better transportation system will require us to pay for it.





# Appendices

C H A N G E I N M O T I O N



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# Appendix 1 – Projects by County

## Bay Area Region/Multi-County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
21002	Implement Freeway Service Patrol, Call Box and Incident Management programs (includes incident detection equipment and incident management systems)	\$ 219.9	\$ 0.0	\$ 219.9	
21005	Fund and implement TransLink®	\$ 408.0	\$ 0.0	\$ 408.0	
21006	Fund and implement Regional Transportation Marketing Program	\$ 27.5	\$ 0.0	\$ 27.5	
21008	Fund and implement 511 Traveler Information	\$ 453.7	\$ 0.0	\$ 453.7	
21011	Transportation for Livable Communities (TLC): provide planning and capital funds to improve pedestrian, bicycle and transit access; and support station development areas and FOCUS Priority Development Areas (PDAs)	\$ 2,200.0	\$ 0.0	\$ 2,200.0	
21012	Golden Gate Bridge seismic retrofit (completes Phase 3)	\$ 699.6	\$ 523.4	\$ 176.2	Phases 1 and 2 complete
21013	Rehabilitate state-owned toll bridges in the Bay Area	\$ 309.5	\$ 309.5	\$ 0.0	
21015	Fund Toll Bridge Seismic Retrofit Program	\$ 8,685.0	\$ 8,685.0	\$ 0.0	
21017	Small transit operators in Alameda, Contra Costa, Marin, Napa, Solano and Sonoma counties — transit operating and capital improvement program (including replacement, rehabilitation and minor enhancements for rolling stock, equipment, fixed facilities and other capital assets; does not include system expansion)	\$ 5,769.2	\$ 4,608.9	\$ 187.7	Shortfall remains
21154	Procure buses for AC Transit transbay, express and local services	\$ 22.0	\$ 0.0	\$ 22.0	
21320	Construct Golden Gate Bridge moveable median barrier	\$ 26.9	\$ 26.9	\$ 0.0	
21342	Extend Caltrain to Transbay Terminal and replace Transbay Terminal, including the construction of the new Transbay Transit Center building and rail foundation (Phase 1)	\$ 1,189.0	\$ 1,189.0	\$ 0.0	Resolution 3434 Regional Transit Expansion Program and Regional Measure 2 Toll Bridge Program; for phases 2a and 2b, see Bay Area Region/Multi-County projects #22008 and #230290
21618	Implement commuter rail service on the Dumbarton Bridge (environmental, design and right-of-way phases)	\$ 301.0	\$ 301.0	\$ 0.0	Resolution 3434 Regional Transit Expansion Program; shortfall remains for construction phase

<sup>1</sup> Committed Funds have been reserved by law for specific uses, or allocated by MTC action prior to the development of the Transportation 2035 Plan.

<sup>2</sup> Discretionary Funds are flexible funds available to MTC (and not already programmed in Committed Funds) for assignment to projects via the Transportation 2035 Plan planning process.

## Bay Area Region/Multi-County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
21619	Expand Caltrain Express service: design and implement safety elements related to signal communication and positive train control (Phase 2a)	\$ 69.0	\$ 69.0	\$ 0.0	Resolution 3434 Regional Transit Expansion Program Phase 1 completed in 2004; shortfall remains for Phase 2b: implement systemwide level boarding program and terminal improvements
21627	Electrify Caltrain from Tamien to San Francisco (includes installation of power substations and other infrastructure)	\$ 626.0	\$ 464.0	\$ 162.0	Resolution 3434 Regional Transit Expansion Program
22001	Implement Sonoma Marin Area Rail Transit District (SMART) commuter rail project (includes environmental, engineering, right-of-way, construction, vehicle procurement and operations)	\$ 1,058.0	\$ 1,058.0	\$ 0.0	Resolution 3434 Regional Transit Expansion Program and Regional Measure 2 Toll Bridge Program
22003	Capitol Corridor: Phase 2 enhancements (includes grade separations at High Street, Davis Street and Hesperian Street)	\$ 88.7	\$ 88.7	\$ 0.0	Resolution 3434 Regional Transit Expansion Program
22006	Improve ferry facilities/equipment including the Downtown Ferry Terminal and procuring additional spare ferry vessels	\$ 192.8	\$ 192.8	\$ 0.0	Resolution 3434 Regional Transit Expansion Program, Regional Measure 2 Toll Bridge Program, and Proposition 1B project
22008	Extend Caltrain to Transbay Terminal and replace Transbay Terminal, including preliminary engineering; environmental; plans, specifications and estimate (PS&E); and right-of-way phases of downtown extension (Phase 2a)	\$ 292.3	\$ 292.3	\$ 0.0	Resolution 3434 Regional Transit Expansion Program, Regional Measure 2 Toll Bridge Program and 2003 Proposition K sales tax project; for phases 1 and 2b, see Bay Area Region/Multi-County projects #21342 and #230290
22009	Implement Capitol Corridor intercity rail service (includes increased track capacity, rolling stock and frequency improvements)	\$ 108.0	\$ 108.0	\$ 0.0	Resolution 3434 Regional Transit Expansion Program
22240	Fund Regional Measure 2 Express Bus South improvements (includes park-and-ride lots, HOV access improvements and rolling stock)	\$ 22.0	\$ 22.0	\$ 0.0	Regional Measure 2 Toll Bridge Program
22241	Fund Regional Measure 2 studies (Water Emergency Transportation Authority environmental studies, I-680/Pleasant Hill BART Connector Study)	\$ 6.7	\$ 6.7	\$ 0.0	Regional Measure 2 Toll Bridge Program
22243	Fund Regional Measure 2 Express Bus North improvements (includes park-and-ride lots and rolling stock)	\$ 31.1	\$ 31.1	\$ 0.0	Regional Measure 2 Toll Bridge Program
22244	Fund City CarShare	\$ 4.6	\$ 4.6	\$ 0.0	Regional Measure 2 Toll Bridge Program
22245	Fund Safe Routes to Transit	\$ 22.5	\$ 22.5	\$ 0.0	Regional Measure 2 Toll Bridge Program
22247	Regional Bicycle Program: provide capital funds to fully build out the Regional Bikeway Network as defined in MTC's <i>Regional Bicycle Plan for the San Francisco Bay Area, 2009 Update</i>	\$ 1,000.0	\$ 0.0	\$ 1,000.0	

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<sup>2</sup> Discretionary Funds are flexible funds available to MTC (and not already programmed in Committed Funds) for assignment to projects via the Transportation 2035 Plan planning process.



## Bay Area Region/Multi-County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
22423	Lifeline Transportation Program: fund programs and services that address transportation gaps specific to low-income communities	\$ 400.0	\$ 0.0	\$ 400.0	
22425	Planning funds for the Metropolitan Transportation Commission, Association of Bay Area Governments, Bay Conservation and Development Commission, and nine county congestion management agencies	\$ 300.0	\$ 0.0	\$ 300.0	
22481	Caltrain — transit operating and capital improvement program (including replacement, rehabilitation and system enhancements for rolling stock, equipment, fixed facilities and other capital assets); station improvements (e.g., platforms) are included	\$ 6,922.9	\$ 4,947.8	\$ 481.7	Shortfall remains
22520	Implement BART earthquake safety program	\$ 714.4	\$ 714.4	\$ 0.0	Excludes Phase 1 of transbay tube earthquake safety project which is a separate project, Bay Area Region/Multi-County project #22636
22636	Implement BART transbay tube earthquake safety improvements (Phase 1)	\$ 592.6	\$ 592.6	\$ 0.0	Regional Measure 2 Toll Bridge Program
22676	Improve passenger capacity at 43 BART stations, including platform modifications and fare gate, stair, elevator and escalator additions	\$ 32.5	\$ 0.0	\$ 32.5	
22765	Improve the connection between I-580 and I-680 via HOV direct connectors	\$ 15.0	\$ 0.0	\$ 15.0	Coordinates with Alameda County project #21116
22991	Widen I-680 southbound in Santa Clara and Alameda counties from Route 237 to Route 84 including an express lane, ramp metering, auxiliary lanes and pavement rehabilitations	\$ 230.9	\$ 230.9	\$ 0.0	2000 Traffic Congestion Relief Program (TCRP) and 2000 Measure B sales tax project
94089	Reconstruct south access to the Golden Gate Bridge, from Doyle Drive to Broderick Street (design and construction phases)	\$ 1,019.4	\$ 605.4	\$ 414.0	For environmental study phase, see Bay Area Region/Multi-County project #98102
94152	Widen Route 12 (Jamieson Canyon) from 2 lanes to 4 lanes from I-80 in Solano County to Route 29 in Napa County (Phase 1)	\$ 145.7	\$ 145.7	\$ 0.0	For Phase 2, see Napa project #230599
94525	BART — transit operating and capital improvement program (including replacement, rehabilitation and minor enhancements, equipment, fixed facilities and other capital assets)	\$37,195.5	\$27,665.1	\$ 2,699.4	Shortfall remains
94526	AC Transit — transit operating and capital improvement program (including replacement, rehabilitation and minor enhancements for rolling stock, equipment, fixed facilities and other capital assets; does not include system expansion)	\$ 13,490.3	\$ 12,511.6	\$ 235.0	Shortfall remains
94527	Livermore Amador Valley Transit Authority (LAVTA) — transit operating and capital improvement program (including replacement, rehabilitation and minor enhancements for rolling stock, equipment, fixed facilities and other capital assets; does not include system expansion)	\$ 783.4	\$ 712.2	\$ 0.0	Shortfall remains

## Bay Area Region/Multi-County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
94541	Reconstruct existing Benicia-Martinez Bridge for southbound traffic	\$ 1,272.5	\$ 1,272.5	\$ 0.0	Regional Measure 1 & 2 Toll Bridge Program
94558	Central Contra Costa Transit Authority (CCCTA) — transit operating and capital improvement program (including replacement, rehabilitation and minor enhancements for rolling stock, equipment, fixed facilities and other capital assets; does not include system expansion)	\$ 1,396.8	\$ 1,396.8	\$ 0.0	
94572	Golden Gate Transit — transit operating and capital improvement program (including replacement, rehabilitation and minor enhancements for rolling stock, equipment, fixed facilities and other capital assets; does not include system expansion)	\$ 3,987.7	\$ 3,102.0	\$ 156.6	Shortfall remains
94610	Valley Transportation Authority (VTA) — transit operating and capital improvement program (including replacement, rehabilitation and minor enhancements for rolling stock, equipment, fixed facilities and other capital assets; does not include system expansion)	\$ 18,968.8	\$ 13,551.9	\$ 591.8	Shortfall remains
94636	San Francisco Municipal Transportation Agency (SFMTA) — transit operating and capital improvement program (including replacement, rehabilitation and other minor enhancements for rolling stock, equipment, fixed facilities and other capital assets, does not include system expansion)	\$ 40,309.3	\$ 31,212.5	\$ 1,950.7	Shortfall remains
94666	SamTrans — transit operating and capital improvement program (including replacement, rehabilitation and minor enhancements for rolling stock, equipment, fixed facilities and other capital assets; does not include system expansion)	\$ 7,812.9	\$ 5,710.5	\$ 92.2	Shortfall remains
94683	Vallejo Transit — transit operating and capital improvement program (including replacement, rehabilitation and minor enhancements for rolling stock, equipment, fixed facilities and other capital assets; does not include system expansion)	\$ 1,560.0	\$ 1,207.6	\$ 0.0	Shortfall remains
98102	Reconstruct the South Access to the Golden Gate Bridge: Doyle Drive (environmental study)	\$ 25.6	\$ 25.6	\$ 0.0	2003 Proposition K sales tax project; for design and construction phases, see Bay Area Region/Multi-County project #94089
230221	Implement I-80 Integrated Corridor Mobility (ICM) project operations and management	\$ 187.8	\$ 187.8	\$ 0.0	
230222	Implement San Pablo Avenue SMART Corridors operations and management	\$ 37.6	\$ 37.6	\$ 0.0	
230287	Implement the Goods Movement Emission Reduction Program (includes replacement or retrofitting of up to 800 port and general goods movement trucks)	\$ 45.0	\$ 0.0	\$ 45.0	

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## Bay Area Region/Multi-County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230290	Extend Caltrain to Transbay Terminal and replace Transbay Terminal, including construction phase (Phase 2b)	\$ 2,047.0	\$ 656.7	\$ 0.0	Resolution 3434 Regional Transit Expansion Program and Regional Measure 2 Toll Bridge Program; for phases 1 and 2a, see Bay Area Region/Multi-County projects #21342 and #22008; shortfall remains
230336	Implement recommendations from MTC's Transit Connectivity Plan	\$ 32.8	\$ 0.0	\$ 32.8	
230419	Freeway Performance Initiative (FPI): maximize performance and reliability using technology and limited expansions at essential locations; includes Traffic Operations System (TOS) infrastructure, TOS maintenance and replacement, arterial coordination and management, and performance monitoring	\$ 1,600.0	\$ 0.0	\$ 1,600.0	
230550	Transportation Climate Action Campaign: implement a campaign to reduce greenhouse gas emissions; includes funding for a comprehensive outreach and education campaign, Safe Routes to School, Safe Routes to Transit, and Transit Priority Measures (TPM)	\$ 400.0	\$ 0.0	\$ 400.0	
230649	High-Speed Rail: fund infrastructure for ACE, BART, Caltrain, MUNI and VTA	\$ 408.0	\$ 408.0	\$ 0.0	
230701	Widen U.S. 101 (adding an HOV lane in each direction) from Route 37 to Marin/Sonoma County line (Marin County portion) and from Marin/Sonoma County line to Old Redwood Highway in Petaluma	\$ 745.4	\$ 569.4	\$ 176.0	
230710	Funding reserve to implement High-Speed Rail and related corridor improvements	\$ 2,130.0	\$ 2,130.0	\$ 0.0	
230712	Install suicide barrier on Golden Gate Bridge	\$ 50.0	\$ 50.0	\$ 0.0	
	<b>Bay Area Express Lane Network</b>	<b>\$ 7,600.0</b>	<b>\$ 7,600.0</b>	<b>\$ 0.0</b>	Total Project Cost is cost to construct, finance, operate and maintain regionwide network. Committed Funds represent estimated toll revenues needed to implement the Express Lane Network. Total capital cost to construct the network is \$3.7 billion. Individual corridors and capital costs are listed below.
	<b>Route 4 Corridor</b>	<b>\$ 37.2</b>	<b>\$ 37.2</b>	<b>\$ 0.0</b>	
230654	Route 4 in Contra Costa County from Route 160 to Port Chicago Highway – convert HOV lanes to express lanes				
	<b>I-80 Corridor</b>	<b>\$ 768.1</b>	<b>\$ 768.1</b>	<b>\$ 0.0</b>	
230656	I-80 in Alameda County from Alameda-Contra Costa County line to Bay Bridge – convert HOV lanes to express lanes				

## Bay Area Region/Multi-County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds	Discretionary Funds	Project Notes
	<b>Bay Area Express Lane Network (continued)</b>				
	<b>I-80 Corridor (continued)</b>				
230657	I-80 in Contra Costa County from Carquinez Bridge to Alameda-Contra Costa County line — convert HOV lanes to express lanes				
230658	I-80 in Solano County from Route 37 to Carquinez Bridge — widen to add an express lane in each direction				
230659	I-80 in Solano County from Yolo County line to Route 37 — widen to add an express lane in each direction from Yolo County line to Air Base Parkway and from Red Top Road to Route 37				
230660	I-80 in Solano County from Red Top Road to Air Base Parkway — convert HOV lanes to express lanes				
	<b>Route 87 Corridor</b>	\$ 22.2	\$ 22.2	\$ 0.0	
230675	Route 87 in Santa Clara County from Route 85 to U.S. 101 — convert HOV lanes to express lanes				
	<b>U.S. 101 North Corridor</b>	\$ 212.2	\$ 212.2	\$ 0.0	
230688	U.S. 101 in Marin County from Corte Madera to Route 37 — convert HOV lanes to express lanes				
230689	U.S. 101 in Sonoma County from Windsor River Road to Old Redwood Highway — widen to add an express lane in each direction and convert HOV lanes to express lanes				
230702	U.S. 101 in Marin and Sonoma counties from Route 37 to Old Redwood Highway — convert HOV lanes to express lanes				
	<b>U.S. 101 South/Route 85 Corridor</b>	\$ 669.0	\$ 669.0	\$ 0.0	
230661	U.S. 101 in Santa Clara County from Cochrane Road to Route 25 — widen to add an express lane in each direction				
230662	U.S. 101 in Santa Clara County from San Mateo/Santa Clara County line to Cochrane Road — convert HOV lanes to express lanes				
230663	U.S. 101 in San Mateo County from San Mateo/Santa Clara County line to Whipple Avenue — convert HOV lanes to express lanes				
230664	U.S. 101 in San Mateo County from Whipple Avenue to Millbrae — widen to add an express lane in each direction				



## Bay Area Region/Multi-County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds	Discretionary Funds	Project Notes
	<b>Bay Area Express Lane Network (continued)</b>				
	<b>U.S. 101 South/Route 85 Corridor (continued)</b>	<b>\$ 768.1</b>	<b>\$ 768.1</b>	<b>\$ 0.0</b>	
230674	Route 85 in Santa Clara County from U.S. 101 in Mountain View to U.S. 101 in South San Jose — convert HOV lanes to express lanes				
	<b>Route 237 Corridor</b>	<b>\$ 75.0</b>	<b>\$ 75.0</b>	<b>\$ 0.0</b>	
230257	Convert HOV direct connectors between I-880 and Route 237 to express lane direct connectors				
230676	Route 237 in Santa Clara County from I-880 to Mathilda Avenue — convert HOV lanes to express lanes				
230677	Route 237 in Santa Clara County from Mathilda Avenue to Route 85 — widen to add an express lane in each direction				
	<b>I-280 Corridor</b>	<b>\$ 97.0</b>	<b>\$ 97.0</b>	<b>\$ 0.0</b>	
230678	I-280 in Santa Clara County from Magdalena Avenue to Leland Avenue — convert HOV lanes to express lanes				
230679	I-280 in Santa Clara County from Leland Avenue to U.S. 101 — widen to add an express lane in each direction				
	<b>I-580 Corridor</b>	<b>\$ 578.6</b>	<b>\$ 578.6</b>	<b>\$ 0.0</b>	
230665	I-580 westbound in Alameda County from Foothill Road to San Joaquin County line — widen to add an express lane and convert HOV lane to express lane				
230666	I-580 eastbound in Alameda County from Foothill Road to San Joaquin County line — widen to add an express lane				
230667	I-580 eastbound in Alameda County from Foothill Road to Greenville Road — convert HOV lane to express lane				
230684	I-680/I-580 interchange in Alameda County — widen to add an express lane direct connector and an eastbound express lane on I-580 to Tassajara Road				
	<b>I-680 Corridor</b>	<b>\$ 1,077.2</b>	<b>\$ 1,077.2</b>	<b>\$ 0.0</b>	
230680	I-680 in Santa Clara County from Calaveras Road to U.S. 101 — widen to add an express lane in each direction				
230681	I-680 northbound in Santa Clara County from Calaveras Boulevard to Alameda County line — widen to add an express lane				
230682	I-680 northbound in Alameda County from Santa Clara County line to Route 84 — widen to add an express lane				

## Bay Area Region/Multi-County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds	Discretionary Funds	Project Notes
	<b>Bay Area Express Lane Network (continued)</b>				
	<b>I-680 Corridor (continued)</b>				
230683	I-680 in Alameda County from Route 84 to Alcosta Boulevard — widen to add an express lane in each direction				
230685	I-680 in Contra Costa County from Alcosta Road to Benicia-Martinez Bridge — widen to add an express lane in each direction through Walnut Creek and convert HOV lanes to express lanes on the remaining segment				
230686	I-680 in Solano County from Benicia-Martinez Bridge to I-80 — widen to add an express lane in each direction				
230687	I-680/I-80 interchange in Solano County — widen to add an express lane direct connector				
230690	I-680/Route 4 interchange in Contra Costa County — widen to add express lane direct connectors at interchange				
	<b>I-880/Route 92/Route 84 Corridor</b>	<b>\$ 91.9</b>	<b>\$ 91.9</b>	<b>\$ 0.0</b>	
230668	I-880 in Santa Clara County from Alameda-Santa Clara County line to U.S. 101 — convert HOV lanes to express lanes				
230669	I-880 in Alameda County from Alameda-Santa Clara County line to Marina Boulevard/Lewelling Boulevard — convert HOV lanes to express lanes				
230670	I-880 in Alameda County from Marina Boulevard/Lewelling Boulevard to Hegenberger Road — convert HOV lanes to express lanes				
230671	I-880 northbound in Alameda County from 16th Avenue to Bay Bridge toll plaza — convert HOV lane to express lane				
230672	Route 92 westbound in Alameda County from Clawiter Road through San Mateo-Hayward Bridge toll plaza — convert HOV lane to express lane				
230673	Route 84 westbound in Alameda County from I-880 through Dumbarton Bridge toll plaza — convert HOV lane to express lane				
230703	With net toll revenue, fund corridor improvements including transit operating and capital needs, freeway operations, interchanges, roadway maintenance and local access	\$ 6,100.0	\$ 0.0	\$ 6,100.0	An additional \$6.1 billion in net revenues are estimated to be generated by the Bay Area Express Lane Network, and these are included in the \$32 billion of Discretionary Funds projected for the plan. Of the \$6.1 billion, \$2.0 billion has been directed to Santa Clara County's Measure A transit program.

# Alameda County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
21093	Upgrade Route 92/Clawiter Road interchange, add ramps and overcrossing for Whitesell Street extension, and signalize ramp intersections	\$ 58.3	\$ 58.3	\$ 0.0	2000 Measure B sales tax project; coordinates with Alameda County project #22106
21100	Construct auxiliary lanes on I-580 between Vasco Road and First Street and modify I-580/Vasco Road interchange	\$ 55.0	\$ 51.0	\$ 4.0	
21101	Reconstruct Stargell Avenue from Webster Street to 5th Avenue	\$ 19.0	\$ 19.0	\$ 0.0	
21103	Construct grade separation structure on Central Avenue at Union Pacific Railroad crossing	\$ 18.3	\$ 5.7	\$ 12.6	
21105	Construct interchange at the extension of Isabel Avenue (Route 84) to I-580	\$ 155.9	\$ 155.9	\$ 0.0	Funding includes 2000 Measure B sales tax and Proposition 1B Corridor Mobility Improvement Account
21112	Improve Crow Canyon Road by widening shoulders, realigning curves and constructing retaining walls	\$ 14.5	\$ 3.5	\$ 11.0	
21114	Construct grade separations on Washington Boulevard/Paseo Padre Parkway at the Union Pacific railroad tracks and proposed BART extension	\$ 108.6	\$ 108.6	\$ 0.0	Regional Measure 2 Toll Bridge Program
21116	Widen I-580 from Foothill Road to Greenville Road in both directions for HOV lanes (includes auxiliary lanes)	\$ 299.3	\$ 299.3	\$ 0.0	Regional Measure 2 Toll Bridge Program; coordinates with Bay Area Region/Multi-County project #22765
21123	Expand Union City BART station to create intermodal rail station	\$ 21.0	\$ 7.0	\$ 14.0	
21125	Extend HOV lane westbound on Route 84 between Newark Avenue undercrossing and west of the I-880 interchange	\$ 11.4	\$ 11.4	\$ 0.0	Regional Measure 2 Toll Bridge Program
21126	Construct westbound Route 84 HOV on-ramp at Newark Boulevard	\$ 12.5	\$ 12.5	\$ 0.0	Regional Measure 2 Toll Bridge Program
21131	Build a BART Oakland Airport Connector between Coliseum BART station and Oakland International Airport	\$ 459.0	\$ 459.0	\$ 0.0	Resolution 3434 Regional Transit Expansion Program and Regional Measure 2 Toll Bridge Program
21132	Extend BART from Fremont to Warm Springs	\$ 890.0	\$ 746.0	\$ 144.0	Resolution 3434 Regional Transit Expansion Program and Regional Measure 2 Bridge Program
21133	Construct new West Dublin/Pleasanton BART station along the I-580 median	\$ 80.0	\$ 80.0	\$ 0.0	
21139	Improve Vasco Road with safety features including realignment, widening and installation of median barriers	\$ 13.2	\$ 3.2	\$ 10.0	2000 Measure B sales tax project

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# Alameda County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
21144	Reconstruct I-80/Gilman Avenue interchange into a roundabout	\$ 7.0	\$ 1.5	\$ 5.5	
21151	Construct initial phase of a new satellite operations and maintenance facility for operations, dispatch, maintenance, fueling, bus wash and parking for LAVTA fixed-route services	\$ 7.8	\$ 7.8	\$ 0.0	Funding for subsequent project phases is being pursued
21159	Expand/enhance AC Transit facilities in northern Alameda County, including new operating facility	\$ 16.1	\$ 0.0	\$ 16.1	Coordinates with Contra Costa County project #230090
21451	Construct additional turn- and bus-loading lanes on Hesperian Boulevard and East 14th Street	\$ 3.4	\$ 1.4	\$ 2.0	2000 Measure B sales tax project
21455	Widen I-238 to 6 lanes between I-580 and I-880, including auxiliary lanes on I-880 between I-238 and A Street	\$ 122.6	\$ 122.6	\$ 0.0	2000 Measure B sales tax project
21456	Construct auxiliary lanes on I-580 between Santa Rita Road/Tassajara Road and Airway Boulevard	\$ 5.5	\$ 5.5	\$ 0.0	2000 Measure B sales tax project
21460	Construct bicycle/pedestrian roadway in existing Alameda County and Southern Pacific right-of-way between the Dublin/Pleasanton BART station and Dougherty Road; construct bus lane on Dougherty Road	\$ 11.4	\$ 11.4	\$ 0.0	2000 Measure B sales tax project
21464	Provide paratransit service for AC Transit, BART and non-mandated city programs to coordinate and close paratransit service gaps	\$ 154.6	\$ 154.6	\$ 0.0	2000 Measure B sales tax project
21465	Enhance transit throughout the county using transit center development funds	\$ 4.8	\$ 4.8	\$ 0.0	2000 Measure B sales tax project
21466	Improve Washington Avenue/Beatrice Street interchange at I-880 through reconstruction and widening of on- and off-ramps	\$ 2.5	\$ 2.5	\$ 0.0	2000 Measure B sales tax project
21472	Improve I-680/Bernal Avenue interchange	\$ 17.0	\$ 17.0	\$ 0.0	
21473	Construct a 4-lane arterial connecting Dublin Boulevard and North Canyons Parkway in Livermore	\$ 11.1	\$ 11.1	\$ 0.0	
21475	Improve I-580/First Street interchange in Livermore	\$ 37.0	\$ 33.0	\$ 4.0	
21477	Reconstruct I-580/Greenville Road interchange in Livermore	\$ 43.0	\$ 39.0	\$ 4.0	
21482	Extend Fremont Boulevard to connect with Dixon Landing Road in Milpitas	\$ 8.9	\$ 8.9	\$ 0.0	
21484	Widen Kato Road from Warren Avenue to Milmont Drive and include bicycle lanes	\$ 5.4	\$ 5.4	\$ 0.0	
21489	Improve I-580/San Ramon Road/Foothill Road interchange	\$ 2.1	\$ 2.1	\$ 0.0	

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# Alameda County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
21992	Implement AC Transit transit priority measures (TPM) and corridor improvements (Element 1)	\$ 14.8	\$ 0.0	\$ 14.8	
22002	Extend I-880 northbound HOV lane from Maritime Street to the Bay Bridge toll plaza	\$ 19.0	\$ 19.0	\$ 0.0	Regional Measure 2 Toll Bridge Program
22007	Implement bicycle and pedestrian projects/programs in Alameda County	\$ 305.5	\$ 305.5	\$ 0.0	Partially funded by 2000 Measure B sales tax
22013	Construct I-580 eastbound truck climbing lane at the Altamont Summit	\$ 64.2	\$ 64.2	\$ 0.0	Proposition 1B Trade Corridor Improvement Fund (TCIF) and State Highway Operations and Protection Program (SHOPP) project
22021	Expand AC Transit transfer centers and park-and-ride facilities in central Alameda County	\$ 2.0	\$ 0.0	\$ 2.0	
22056	Improve Ashby BART station to support Ed Roberts Campus and future transit-oriented development	\$ 43.5	\$ 43.5	\$ 0.0	
22062	Construct infrastructure to support future Irvington BART station	\$ 2.6	\$ 2.6	\$ 0.0	
22063	Improve Route 238 corridor near Foothill Boulevard/I-580 by removing parking during peak periods and spot widening	\$ 116.0	\$ 116.0	\$ 0.0	
22082	Correct grade separation at 7th Street/Union Pacific Railroad entry at Port of Oakland intermodal yards and improve connecting roadways through former Oakland Army Base	\$ 427.0	\$ 427.0	\$ 0.0	Proposition 1B Trade Corridors Improvement Fund (TCIF) project
22084	Improve access to Oakland International Airport's North Field, connecting Route 61 (Doolittle Drive) with Earhart Road and extending infield area at North Field	\$ 10.0	\$ 5.0	\$ 5.0	
22087	Reconstruct I-880/Oak Street on-ramp	\$ 26.7	\$ 26.7	\$ 0.0	
22089	Improve Martinez Subdivision for freight and passenger rail	\$ 100.0	\$ 100.0	\$ 0.0	Proposition 1B Trade Corridor Improvement Fund (TCIF) project
22100	Replace overcrossing structure at I-880/Davis Street interchange and add additional travel lanes on Davis Street (includes ramp, intersection and signal improvements)	\$ 24.4	\$ 24.4	\$ 0.0	Coordinates with Alameda County project #22670
22106	Construct street extensions in Hayward near Clawiter and Whitesell streets	\$ 26.9	\$ 26.9	\$ 0.0	2000 Measure B sales tax project; coordinates with Alameda County project #21093
22455	Implement Bus Rapid Transit service on the Telegraph Avenue/International Boulevard/E. 14th Street corridor	\$ 250.0	\$ 176.0	\$ 74.0	Resolution 3434 Regional Transit Expansion Program and Regional Measure 2 Toll Bridge Program

# Alameda County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
22509	Provide ferry service between Alameda/Oakland and San Francisco, and between Harbor Bay and San Francisco	\$ 21.5	\$ 12.0	\$ 9.5	Resolution 3434 Regional Transit Expansion Program and Regional Measure 2 Toll Bridge Program
22511	Provide ferry service between Berkeley/Albany and San Francisco	\$ 56.6	\$ 56.6	\$ 0.0	Resolution 3434 Regional Transit Expansion Program and Regional Measure 2 Toll Bridge Program
22670	Construct HOV lane for southbound I-880 from Hegenberger Road to Marina Boulevard (includes reconstructing bridges at Davis Street and Marina Boulevard)	\$ 119.4	\$ 119.4	\$ 0.0	Partially funded with Proposition 1B Corridor Mobility Improvement Account funds; coordinates with Alameda County project #22100
22760	Relocate the Outer Harbor Intermodal Terminal (OHIT) to the former Oakland Army Base (includes rail yard, storage tracks, lead tracks, truck gates, and administrative/operations and maintenance buildings)	\$ 220.0	\$ 220.0	\$ 0.0	Proposition 1B Trade Corridors Improvement Fund (TCIF) project
22766	Assess Fruitvale Avenue rail bridge for seismic retrofit	\$ 2.6	\$ 1.6	\$ 1.0	
22768	Retrofit and repair three Oakland-Alameda Estuary bridges for seismic safety	\$ 4.0	\$ 3.0	\$ 1.0	
22769	Improve northbound I-880 ramp geometries at 23rd and 29th avenues (includes modifications to local streets, landscaping and soundwall construction)	\$ 163.4	\$ 96.9	\$ 66.5	Proposition 1B Trade Corridors Improvement Fund (TCIF) project and Regional Measure 2 Toll Bridge Program
22770	Install traffic signal on Grand Avenue at Rose Avenue/Arroyo Avenue in Piedmont	\$ 0.3	\$ 0.3	\$ 0.0	
22776	Widen Route 84 from 2 to 4 lanes from north of Pigeon Pass to Stanley Boulevard, and from 2 to 6 lanes from Stanley Boulevard to Jack London Boulevard	\$ 129.6	\$ 114.6	\$ 15.0	
22777	Reconstruct on- and off-ramps on I-580 in Castro Valley	\$ 34.9	\$ 34.9	\$ 0.0	2000 Measure B sales tax project
22779	Reconstruct Route 262/I-880 interchange and widen I-880, including grade separation at Warren Avenue and the Union Pacific Railroad tracks (Phase 2)	\$ 56.0	\$ 56.0	\$ 0.0	For Phase 1, see Alameda County project #94030
22780	Implement Bus Rapid Transit on the Grand-MacArthur corridor	\$ 41.0	\$ 11.0	\$ 30.0	Resolution 3434 Regional Transit Expansion Program and Regional Measure 2 Toll Bridge Program
22783	Assess Fruitvale Avenue roadway bridge for seismic retrofit	\$ 8.0	\$ 3.0	\$ 5.0	

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# Alameda County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
94012	Implement the Union City BART station transit-oriented development project, including construction of pedestrian grade separations under the BART and Union Pacific Railroad tracks and reconfiguring existing station to provide multimodal loop road (Phase 1)	\$ 40.0	\$ 40.0	\$ 0.0	
94030	Reconstruct I-880/Route 262 interchange and widen I-880 from 8 lanes to 10 lanes (8 mixed-flow and 2 HOV lanes) from Route 262 (Mission Boulevard) to the Santa Clara County line (Phase 1)	\$ 186.8	\$ 186.8	\$ 0.0	For Phase 2, see Alameda County project #22779
94506	Construct an improved east-west connection between I-880 and Route 238 (Mission Boulevard) from North Fremont to Union City	\$ 160.2	\$ 150.6	\$ 9.6	1986 Measure B sales tax project
94514	Reconstruct I-880/Route 92 interchange with direct connectors	\$ 245.0	\$ 245.0	\$ 0.0	Regional Measure 1 Toll Bridge Program
98139	Acquire right-of-way for ACE rail service between Stockton and Niles Junction, complete track improvements between San Joaquin County and Alameda County, and expand Alameda County station platforms	\$ 150.0	\$ 75.0	\$ 75.0	Resolution 3434 Regional Transit Expansion Program
98207	Improve I-880/Broadway-Jackson interchange in Oakland (includes new on- and off-ramps and new signals)	\$ 26.0	\$ 8.8	\$ 17.2	
98208	Construct soundwalls in various locations in Alameda County	\$ 10.0	\$ 0.0	\$ 10.0	
230047	Reconstruct I-880/West A Street interchange in Hayward (includes new sidewalks)	\$ 27.0	\$ 0.0	\$ 27.0	
230052	Construct auxiliary lanes on I-880 near Winton in Hayward	\$ 36.5	\$ 36.5	\$ 0.0	
230053	Reconstruct I-880 Industrial Parkway interchange (Phase 1)	\$ 14.7	\$ 0.0	\$ 14.7	For Phase 2, see Alameda County project #230057
230054	Construct auxiliary lanes on I-880 at Industrial Parkway	\$ 21.9	\$ 21.9	\$ 0.0	
230057	Reconstruct I-880/Industrial Parkway interchange, including construction of new northbound I-880 on-ramp and modifications to southbound on-ramp to include an HOV lane (Phase 2)	\$ 29.2	\$ 29.2	\$ 0.0	For Phase 1, see Alameda County project #230053
230066	Improve I-880/Marina Boulevard interchange (includes on- and off-ramp improvements, overcrossing modification and street improvements)	\$ 36.1	\$ 36.1	\$ 0.0	
230083	Tri-Valley Transit Access: acquire right-of-way along I-580 from Hacienda Drive to the Greenville Road interchange to accommodate rail transit	\$ 123.5	\$ 123.5	\$ 0.0	Resolution 3434 Regional Transit Expansion Program
230086	Reconstruct I-580/Fallon Road interchange and I-580/Hacienda Drive interchange in Dublin	\$ 37.6	\$ 21.6	\$ 16.0	

# Alameda County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230088	Extend existing northbound I-880 HOV lane from north of Hacienda Avenue to Hegenberger Road	\$ 167.5	\$ 167.5	\$ 0.0	
230091	Install traffic monitoring systems, signal priority and coordination, ramp metering, and HOV bypass lanes in the I-880, I-238 and I-580 corridors	\$ 33.5	\$ 33.5	\$ 0.0	
230094	Construct soundwalls in central Alameda County	\$ 10.3	\$ 10.3	\$ 0.0	
230099	Construct northbound I-680 to westbound I-580 connector	\$ 572.0	\$ 0.0	\$ 572.0	Interregional Transportation Improvement Program
230108	Widen I-80 eastbound Powell Street off-ramp in Emeryville	\$ 1.8	\$ 0.3	\$ 1.5	
230110	Construct a grade separation at Route 262/Warm Springs Drive/Mission Boulevard	\$ 10.0	\$ 0.0	\$ 10.0	
230114	Widen Auto Mall Parkway from 4 to 6 lanes between I-680 and I-880, including intersection improvements	\$ 42.0	\$ 33.0	\$ 9.0	
230116	Improve rail crossings in Berkeley, including grade separation at Gilman Street, road closures and at-grade crossing improvements (Phase 1)	\$ 2.0	\$ 0.0	\$ 2.0	
230120	Construct truck parking facilities in northern Alameda County (Phase 1)	\$ 5.0	\$ 0.0	\$ 5.0	
230122	Implement a Value-Pricing Parking and Transportation Demand Management program in Berkeley	\$ 5.0	\$ 2.0	\$ 3.0	
230125	Improve Ashby/I-80 interchange/Aquatic Park access, including streetscaping, bicycle/pedestrian improvements and minor interchange improvements	\$ 2.0	\$ 0.0	\$ 2.0	
230132	Improve I-580/Isabel Avenue interchange, including streetscaping and bicycle/pedestrian improvements	\$ 28.0	\$ 24.0	\$ 4.0	
230156	Extend West Jack London Boulevard from west of Isabel/Route 84 to El Charro Road	\$ 18.7	\$ 18.7	\$ 0.0	
230157	Construct a 2-lane gap closure on Las Positas Road from Arroyo Vista to west of Vasco Road	\$ 7.3	\$ 7.3	\$ 0.0	
230160	Tri-Valley Transit Access: implement enhanced rapid bus service in Livermore, Dublin and Pleasanton (includes higher frequencies, new stops and improved stop amenities)	\$ 14.1	\$ 14.1	\$ 0.0	Resolution 3434 Regional Transit Expansion Program

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## Alameda County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230169	Provide Intelligent Transportation System (ITS) elements for arterial management in Oakland (includes new controllers, signal coordination, transit priority, automatic vehicle locators, speed and level of service monitoring through radar detection, and real time arrival information)	\$ 22.0	\$ 0.0	\$ 22.0	
230170	Improve access to I-880 from 42nd Avenue and High Street	\$ 24.9	\$ 5.9	\$ 19.0	
230171	Improve Route 24/Caldecott Tunnel including bicycle and transit access and soundwall improvements	\$ 8.0	\$ 2.0	\$ 6.0	
230198	Upgrade traffic signal systems with Intelligent Transportation System (ITS) elements (includes new controllers, improved system communication, facilities upgrades and relocations, emergency vehicle pre-emption, and improved speed and level of service monitoring)	\$ 2.0	\$ 0.0	\$ 2.0	
230244	Prepare supplemental project study report for Route 84 widening from Pigeon Pass to I-680	\$ 2.3	\$ 0.0	\$ 2.3	
230396	Implement recommendations from the Community-Based Transportation Plan to improve the mobility of low-income residents	\$ 29.3	\$ 4.4	\$ 24.9	
230412	Additional AC Transit and BART transit capital replacement	\$ 233.0	\$ 0.0	\$ 233.0	
230608	Construct a westbound auxiliary lane on I-580 between First Avenue and Isabel Avenue in the Tri-Valley area	\$ 10.0	\$ 0.0	\$ 10.0	
230630	Tri-Valley Transit Access: construct westbound off-ramp to connect I-580 to Dublin/Pleasanton BART station, or make other transit access improvements at the BART station	\$ 30.0	\$ 30.0	\$ 0.0	Resolution 3434 Regional Transit Expansion Program
230692	Local streets and roads maintenance	\$ 6,372.0	\$ 2,613.0	\$ 1,253.0	Shortfall remains

## Contra Costa County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
21205	Improve the I-680/Route 4 interchange with direct connectors and widen Route 4 from 2 lanes to 3 lanes in each direction between Route 242 and Morello Avenue	\$ 229.0	\$ 40.9	\$ 188.1	2004 Measure J sales tax project
21206	Construct a fourth bore at the Caldecott Tunnel complex north of the three existing bores	\$ 445.9	\$ 445.9	\$ 0.0	Partially funded with Proposition 1B Corridor Mobility Improvement Account funds; 2004 Measure J sales tax project
21207	Construct Martinez Intermodal Station, including site acquisition, demolition and construction of 200 interim parking spaces (Phase 3 initial segment)	\$ 12.0	\$ 12.0	\$ 0.0	2004 Measure J sales tax project; for additional elements of Phase 3, see Contra Costa County project #22614
21208	Construct Richmond Parkway Transit Center, including signal timing and reconfiguration, parking facility and security improvements	\$ 30.5	\$ 30.5	\$ 0.0	Regional Measure 2 Toll Bridge Program
21209	Relocate and expand Hercules Transit Center, including relocation of park-and-ride facility and construction of express bus facilities	\$ 13.0	\$ 13.0	\$ 0.0	1988 Measure C sales tax project
21210	Construct Capitol Corridor train station in Hercules	\$ 39.8	\$ 39.8	\$ 0.0	2000 Traffic Congestion Relief Program (TCRP) and 2004 Measure J sales tax project
21211	Extend BART/East Contra Costa Rail (eBART) eastward from the Pittsburg/Bay Point BART station into eastern Contra Costa County	\$ 525.0	\$ 525.0	\$ 0.0	Resolution 3434 Regional Transit Expansion Program, Regional Measure 2 Toll Bridge Program, and 2004 Measure J sales tax project
21214	Widen Wilbur Avenue over Burlington Northern Santa Fe Railroad from 2 to 4 lanes	\$ 15.7	\$ 15.7	\$ 0.0	
21225	Improve regional and local pedestrian and bicycle system, including construction overcrossings, and expanding sidewalks and facilities	\$ 50.0	\$ 50.0	\$ 0.0	
22122	Implement ferry service from Richmond to San Francisco	\$ 62.6	\$ 16.4	\$ 46.2	Resolution 3434 Regional Transit Expansion Program, Regional Measure 2 Toll Bridge Program, and 2004 Measure J sales tax project
22352	Improve I-680/Norris Canyon Road, including reconstruction of overcrossing, widening of median, construction of new HOV ramps and modifications to the local street network in San Ramon	\$ 101.6	\$ 58.7	\$ 42.9	2004 Measure J sales tax project
22353	Construct HOV lane on I-680 southbound between North Main Street and Livorna Road	\$ 105.0	\$ 105.0	\$ 0.0	Regional Measure 2 Toll Bridge Program and 2004 Measure J sales tax project
22354	Relocate the western half of the Marina Vista interchange off southbound I-680	\$ 7.9	\$ 1.6	\$ 6.3	2004 Measure J sales tax project

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## Contra Costa County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
22355	Modify I-80/Central Avenue interchange	\$ 32.0	\$ 27.0	\$ 5.0	2004 Measure J sales tax project
22360	Reconstruct I-80/San Pablo Dam Road interchange and modify adjacent interchanges	\$ 118.0	\$ 47.0	\$ 71.0	2004 Measure J sales tax project
22365	Improve Martinez Ferry landside facilities	\$ 5.3	\$ 5.3	\$ 0.0	2004 Measure J sales tax project
22388	Construct Route 242 on-ramp and off-ramp at Clayton Road	\$ 42.6	\$ 12.3	\$ 30.3	2004 Measure J sales tax project
22390	Reconstruct Route 4/Willow Pass Road ramps in Concord to support new infill development at the Concord Naval Weapons Station	\$ 45.1	\$ 35.1	\$ 10.0	2004 Measure J sales tax project
22402	Implement the San Ramon School Bus Program, and continue the Lamorinda School Bus Program	\$ 168.2	\$ 168.2	\$ 0.0	2004 Measure J sales tax project
22600	Widen Somersville Road Bridge in Antioch from 2 lanes to 4 lanes	\$ 2.2	\$ 2.2	\$ 0.0	
22602	Construct I-680 auxiliary lanes in both directions from Sycamore Valley Road to Crow Canyon Road	\$ 47.0	\$ 20.0	\$ 27.0	1988 Measure C sales tax project
22603	Construct 6-level, roughly 785-space parking garage at Richmond Intermodal Transfer Station	\$ 34.3	\$ 34.3	\$ 0.0	1988 Measure C sales tax project
22607	Widen and extend major streets, and improve interchanges in east Contra Costa County	\$ 90.0	\$ 90.0	\$ 0.0	2004 Measure J sales tax project
22609	Widen and extend major streets, and improve interchanges in central Contra Costa County	\$ 30.0	\$ 30.0	\$ 0.0	2004 Measure J sales tax project
22610	Widen and extend major streets, and improve interchanges in west Contra Costa County	\$ 30.0	\$ 30.0	\$ 0.0	
22611	Implement a low-income student bus pass program in west Contra Costa County	\$ 36.9	\$ 36.9	\$ 0.0	2004 Measure J sales tax project
22613	Widen and extend major streets, and improve interchanges in southwest Contra Costa County (includes widening Camino Tassajara to 4 lanes between Danville and Windemere Parkway, and to 6 lanes from Windemere Parkway to Alameda County line)	\$ 30.0	\$ 30.0	\$ 0.0	2004 Measure J sales tax project
22614	Construct Martinez Intermodal Station, including an additional 425 parking spaces and vehicle and pedestrian bridges (Phase 3)	\$ 14.2	\$ 2.8	\$ 11.4	2004 Measure J sales tax project; for Phase 3 initial segment, see Contra Costa County project #21207
22637	Construct BART crossover at Pleasant Hill BART station	\$ 25.0	\$ 25.0	\$ 0.0	Regional Measure 2 Toll Bridge Program

# Contra Costa County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
94045	Purchase new express buses for I-80 express service to be provided by AC Transit, Vallejo Transit and WestCAT (capital costs)	\$ 17.5	\$ 17.5	\$ 0.0	
94046	Improve interchanges and parallel arterials to Route 4	\$ 21.5	\$ 21.5	\$ 0.0	
94048	Improve interchanges and parallel arterials to I-80	\$ 21.5	\$ 21.5	\$ 0.0	
94532	Implement the Gateway Lamorinda Traffic Program (includes carpool lot in Lafayette, structural and safety improvements on Moraga Road, intersection realignments, turn lanes, pedestrian accommodation and signal coordination)	\$ 15.9	\$ 15.9	\$ 0.0	1988 Measure C sales tax project
94538	Implement the Route 4 transportation management system	\$ 1.1	\$ 1.1	\$ 0.0	
98115	Widen Ygnacio Valley/Kirker Pass roads from 4 lanes to 6 lanes from Michigan Boulevard to Cowell Road	\$ 8.2	\$ 8.2	\$ 0.0	
98126	Improve interchanges and arterials parallel to I-680 and Route 24	\$ 21.5	\$ 21.5	\$ 0.0	
98132	Widen and extend Bollinger Canyon Road to 6 lanes from Alcosta Boulevard to Dougherty Road	\$ 4.7	\$ 4.7	\$ 0.0	
98133	Widen Pacheco Boulevard from 2 to 4 lanes from Blum Road to Arthur Road	\$ 50.3	\$ 28.3	\$ 22.0	2004 Measure J sales tax project
98134	Widen Dougherty Road to 6 lanes from Red Willow to Contra Costa County line	\$ 47.8	\$ 47.8	\$ 0.0	
98142	Widen Route 4 from 4 lanes to 8 lanes, with HOV lanes, from Loveridge Road to Somersville Road	\$ 170.0	\$ 170.0	\$ 0.0	1988 Measure C sales tax, Regional Measure 2 Toll Bridge Program, and Traffic Congestion Relief Program (TCRP) project
98157	Enhance AC Transit bus service in San Pablo corridor	\$ 12.9	\$ 12.9	\$ 0.0	
98193	Extend Panoramic Drive from North Concord BART station to Willow Pass Road	\$ 12.9	\$ 12.9	\$ 0.0	
98194	Extend Commerce Avenue to Waterworld Parkway, including construction of vehicular bridge over Pine Creek, installation of trails and a pedestrian bridge connecting Willow Pass Road to Concord Avenue/Route 242 interchange	\$ 7.7	\$ 7.7	\$ 0.0	1988 Measure C sales tax project
98196	Construct auxiliary lanes on Route 24 from Gateway Boulevard to Brookwood Road/Moraga Way	\$ 7.3	\$ 7.3	\$ 0.0	
98198	Improve safety and operations on Vasco Road in Contra Costa County	\$ 45.2	\$ 10.7	\$ 34.5	
98211	Extend I-80 eastbound HOV lanes from Route 4 to the Crockett interchange	\$ 55.5	\$ 55.5	\$ 0.0	Regional Measure 2 Toll Bridge Program

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## Contra Costa County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
98222	Construct freeway-to-freeway direct connectors between Route 4 Bypass and Route 160	\$ 60.0	\$ 24.0	\$ 36.0	2004 Measure J sales tax project
98999	Widen Route 4 from Somersville Road to Route 160 and improve interchanges	\$ 530.0	\$ 530.0	\$ 0.0	Proposition 1B Corridor Mobility Improvement Account, Regional Measure 2 Toll Bridge Program, 1988 Measure C sales tax, and 2004 Measure J sales tax project
230084	Construct a railroad grade separation at the Richmond Waterfront on the Marina Bay Parkway	\$ 45.5	\$ 20.0	\$ 25.5	2004 Measure J sales tax project
230090	Expand and enhance AC Transit facilities in western Contra Costa County, including environmental sustainability projects, zero emission improvements and a new operating facility	\$ 25.0	\$ 0.0	\$ 25.0	Coordinates with Alameda County project #21159
230123	Expand existing WestCAT maintenance facility (includes land purchase)	\$ 6.1	\$ 0.0	\$ 6.1	
230127	Construct new satellite WestCAT maintenance facility (includes land purchase)	\$ 8.2	\$ 8.2	\$ 0.0	
230129	Expand WestCAT service, including purchase of vehicles	\$ 8.8	\$ 8.8	\$ 0.0	
230185	Establish express bus service and eBART support network (includes park-and-ride lots and rolling stock)	\$ 21.7	\$ 0.0	\$ 21.7	
230188	Purchase land in Oakley for use as a park-and-ride lot	\$ 1.2	\$ 1.2	\$ 0.0	
230193	Enhance AC Transit Zero Emission Bus (ZEB) program, including fueling stations and new maintenance bays	\$ 8.1	\$ 8.1	\$ 0.0	
230194	Implement AC Transit Environmental Sustainability Program	\$ 6.6	\$ 6.6	\$ 0.0	
230195	Improve safety and security on AC Transit vehicles and in facilities, including installing surveillance systems and emergency operations improvements	\$ 4.5	\$ 4.5	\$ 0.0	
230196	Implement AC Transit San Pablo Dam Road Transit Priority Measures (TPM), including passenger safety improvements and road improvements	\$ 12.2	\$ 12.2	\$ 0.0	
230202	Widen Route 4 Bypass to 4 lanes from Laurel Road to Sand Creek Road	\$ 42.4	\$ 42.4	\$ 0.0	2004 Measure J sales tax project
230203	Construct Route 4 Bypass interchange at Sand Creek Road	\$ 40.4	\$ 40.4	\$ 0.0	2004 Measure J sales tax project
230205	Widen Route 4 Bypass to 4 lanes from Sand Creek Road to Balfour Road	\$ 23.6	\$ 23.6	\$ 0.0	
230206	Construct Route 4 Bypass interchange at Balfour Road (Phase 1)	\$ 46.1	\$ 46.1	\$ 0.0	2004 Measure J sales tax project
230212	Improve Clayton Road/Treat Boulevard intersection and increase capacity (includes upgrading traffic signal and geometric improvements)	\$ 2.1	\$ 2.1	\$ 0.0	2004 Measure J sales tax project

# Contra Costa County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230216	Construct 2-lane bridge connecting Waterworld Parkway with Meridian Park Boulevard	\$ 16.9	\$ 11.3	\$ 5.6	2004 Measure J sales tax project
230225	Improve and expand arterial streets in central Hercules for express bus and rail transit facilities to support transit-oriented development at I-80/Route 4 intersection	\$ 7.7	\$ 7.7	\$ 0.0	
230227	Conduct engineering, environmental and financial feasibility assessment of rail mass transit to western Contra Costa County (includes future station site acquisition)	\$ 2.9	\$ 2.9	\$ 0.0	
230229	Widen Pinole Valley Road ramps at I-80 to provide a dedicated right-turn lane on eastbound on-ramp and bus turnout/shelter on westbound on-ramp	\$ 0.8	\$ 0.0	\$ 0.8	
230232	Construct new interchange at Route 4/Phillips Lane	\$ 50.1	\$ 30.1	\$ 20.0	
230233	Extend James Donlon Boulevard to Kirker Pass Road by constructing a new two-lane expressway	\$ 35.0	\$ 35.0	\$ 0.0	
230236	Widen Pittsburg-Antioch Highway from 2 lanes to 4 lanes	\$ 19.9	\$ 19.9	\$ 0.0	
230237	Extend West Leland Road from San Marco Boulevard to Willow Pass Road (includes a raised median, bicycle lanes and sidewalks)	\$ 45.0	\$ 37.0	\$ 8.0	
230238	Widen California Avenue from 2 lanes to 4 lanes with 2 left-turn lanes	\$ 16.0	\$ 16.0	\$ 0.0	
230239	Widen and improve Buskirk Avenue between Monument Boulevard and Hookston Road to provide 2 through lanes in each direction (includes road realignment, new traffic signals and bicycle/pedestrian streetscape improvements)	\$ 10.6	\$ 10.6	\$ 0.0	
230240	Add additional left- or right-turn lanes at various intersections along Contra Costa Boulevard (between Monument Boulevard and 2nd Avenue)	\$ 11.3	\$ 2.0	\$ 9.3	
230247	Widen Lone Tree Way to 6 lanes from O'Hara Avenue to Brentwood Boulevard	\$ 27.0	\$ 10.4	\$ 16.6	
230249	Construct a 6-lane grade separation undercrossing along the Union Pacific Railroad line at Lone Tree Way	\$ 26.6	\$ 26.6	\$ 0.0	
230250	Widen Brentwood Boulevard from 2 lanes to 4 lanes between Marsh Creek and Delta Road	\$ 23.5	\$ 23.5	\$ 0.0	
230253	Replace the old 2-lane Fitzuren Road with a new, 4-lane divided arterial (includes shoulders, bicycle lanes, a park-and-ride lot and sidewalks)	\$ 10.0	\$ 10.0	\$ 0.0	

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## Contra Costa County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230274	Widen Main Street to 6 lanes from Route 160 to Big Break Road	\$ 12.6	\$ 12.6	\$ 0.0	
230279	Extend John Muir Parkway in Hercules with 4 traffic lanes, a bridge, bicycle path and landscaping	\$ 8.7	\$ 0.4	\$ 8.3	
230288	Widen Empire Avenue from 2 to 4 lanes between Lone Tree Way and Union Pacific Railroad right-of-way/Antioch city limits	\$ 2.1	\$ 2.1	\$ 0.0	
230289	Construct Main Street Downtown Bypass road between Vintage Parkway and 2nd Street	\$ 27.1	\$ 12.4	\$ 14.7	
230291	Add northbound truck climbing lane and a bicycle lane on Kirker Pass Road from Clearbrook Drive in Concord to just beyond the crest of Kirker Pass	\$ 10.2	\$ 8.2	\$ 2.0	
230293	Add transit stops, sidewalks, and bicycle and pedestrian amenities on San Pablo Dam Road in El Sobrante	\$ 7.3	\$ 7.3	\$ 0.0	
230306	Add a second southbound lane on Alhambra Avenue from Walnut Avenue to the south side of Highway 4 (includes signal modifications)	\$ 2.1	\$ 0.3	\$ 1.8	
230307	Widen Camino Tassajara Road from 2 lanes to 4 lanes from Windemere Parkway to the Alameda/Contra Costa County line	\$ 13.0	\$ 4.9	\$ 8.1	
230308	Straighten curves to improve safety and operation of Alhambra Valley Road	\$ 7.5	\$ 3.0	\$ 4.5	
230309	Provide rolling stock, infrastructure and information technology for Bus Rapid Transit service in the Pacheco/Contra Costa Boulevard/North Main corridor	\$ 13.3	\$ 0.0	\$ 13.3	
230318	Extend North Richmond truck route along Soto Street from Market Avenue to Parr Boulevard	\$ 28.1	\$ 5.6	\$ 22.5	
230320	Extend the I-680 southbound HOV lane northward from Livorna Road to north of Rudgear Road	\$ 3.1	\$ 3.1	\$ 0.0	2004 Measure J sales tax project
230321	Construct Phase 2 of Hercules Intermodal Station (includes station building and approximately 350 parking spaces)	\$ 14.0	\$ 0.0	\$ 14.0	
230397	Construct and develop infrastructure enhancements to improve operations of transit service within the WestCAT service area, including park-and-ride lots, signal prioritization, bus-only lanes and freeway drop ramps	\$ 12.4	\$ 12.4	\$ 0.0	
230401	Construct bicycle- and pedestrian-friendly improvements along San Pablo Avenue from El Cerrito to Crockett to support transit-oriented development	\$ 6.8	\$ 6.8	\$ 0.0	

## Contra Costa County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230402	Install new or upgraded corridor management and traveler information elements along the I-80 corridor from the Carquinez Bridge to the San Francisco-Oakland Bay Bridge Toll Plaza (Phase 1)	\$ 67.0	\$ 67.0	\$ 0.0	2004 Measure J sales tax project; for Phase 2, see Contra Costa County project #230597
230505	Provide transportation improvements on the east side of the Richmond BART station to accommodate redevelopment for a transit village	\$ 16.1	\$ 16.1	\$ 0.0	
230535	Realign curves along Marsh Creek Road to improve safety and operations	\$ 4.6	\$ 4.6	\$ 0.0	
230538	Widen Bailey Road lanes and shoulders	\$ 5.7	\$ 5.7	\$ 0.0	
230542	Close a bicycle/pedestrian gap at San Pablo Avenue bridge in Pinole by upgrading the existing bridge or constructing a new dedicated bicycle/pedestrian bridge	\$ 0.9	\$ 0.9	\$ 0.0	
230596	Construct Pacheco Boulevard Transit Hub on Blum Road at the I-680/Route 4 interchange (includes 6 bus bays and a 110-space park-and-ride lot)	\$ 2.7	\$ 2.7	\$ 0.0	1988 Measure C sales tax project
230597	Install new or upgraded corridor management and real-time traveler information improvements in I-80 corridor between the Carquinez Bridge and the San Francisco-Oakland Bay Bridge Toll Plaza (Phase 2)	\$ 26.5	\$ 26.5	\$ 0.0	2004 Measure J sales tax project; for Phase 1, see Contra Costa County project #230402
230613	Implement ferry service between Hercules and San Francisco	\$ 59.3	\$ 16.0	\$ 43.3	Resolution 3434 Regional Transit Expansion Program
230631	Double the existing rail track between Oakley and Port Chicago	\$ 28.1	\$ 28.1	\$ 0.0	
230693	Local streets and roads maintenance	\$ 4,362.0	\$ 2,458.0	\$ 1,001.0	Shortfall remains

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# Marin County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
21030	Improve U.S. 101/I-580 interchange and construct a freeway-to-freeway direct connector from northbound U.S. 101 to eastbound I-580 (project approval and environmental document phases only)	\$ 8.0	\$ 0.0	\$ 8.0	
21302	Implement Marin County's bicycle and pedestrian program	\$ 19.9	\$ 19.9	\$ 0.0	
21315	Signalize ramp intersections at U.S. 101/Miller Creek Road interchange	\$ 1.4	\$ 0.0	\$ 1.4	
21325	Improve local access to U.S. 101 from Tamalpais Drive to just north of Sir Francis Drake Boulevard	\$ 120.7	\$ 55.2	\$ 65.5	Regional Measure 2 Toll Bridge Program
22437	Construct auxiliary lanes at various locations along U.S. 101 and provide bus-on-shoulder options where feasible	\$ 5.0	\$ 0.0	\$ 5.0	
22753	Construct park-and-ride lots to support regional express bus service	\$ 5.0	\$ 0.0	\$ 5.0	
94563	Widen U.S. 101 for HOV lanes (one in each direction) from Lucky Drive in Corte Madera to North San Pedro Road in San Rafael	\$ 189.8	\$ 189.8	\$ 0.0	2002 Traffic Congestion Relief Program (TCRP) project
98179	Improve U.S. 101/Tiburon Boulevard interchange, including circulation and signal improvements to nearby intersections	\$ 21.8	\$ 10.3	\$ 11.5	
230060	Implement Transit Priority Measures (TPM) on major transit corridors (includes signal priority, queue-jump lanes, real-time information and enhanced passenger board areas)	\$ 30.0	\$ 0.0	\$ 30.0	
230095	Widen Route 1 at Pacific Way to provide a Muir Beach bus stop	\$ 0.2	\$ 0.2	\$ 0.0	
230105	Replace Pacific Way Bridge with new 2-lane bridge with a separate bicycle and pedestrian path	\$ 4.6	\$ 0.0	\$ 4.6	
230252	Expand Marin County local bus service	\$ 10.0	\$ 0.0	\$ 10.0	
230400	Improve access to Southern Marin parklands	\$ 22.5	\$ 22.5	\$ 0.0	
230406	Implement initial set of transportation improvements identified in the Canal Neighborhood Community-Based Transportation Plan	\$ 1.2	\$ 1.2	\$ 0.0	Funding for subsequent project phases is being pursued
230418	Rehabilitate major roads of countywide significance	\$ 92.8	\$ 62.8	\$ 30.0	
230422	Signalize Anderson Drive/East Sir Francis Drake Boulevard intersection	\$ 3.0	\$ 0.0	\$ 3.0	
230431	Construct intermodal transit hub in Southern Marin Priority Development Area and/or in the city of Novato	\$ 11.0	\$ 0.0	\$ 11.0	
230502	Construct westbound I-580 to northbound U.S. 101 connector	\$ 20.8	\$ 20.8	\$ 0.0	

# Marin County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230516	Implement Marin County's Safe Routes to Schools Program	\$ 43.0	\$ 43.0	\$ 0.0	
230549	Implement local arterial improvements parallel to U.S. 101 and I-580 (includes signalization, signal controller upgrades, signal coordination and geometric improvements)	\$ 10.0	\$ 0.0	\$ 10.0	
230694	Local streets and roads maintenance	\$ 1,477.0	\$ 577.0	\$ 328.0	Shortfall remains
230709	Implement routine maintenance of bicycle and pedestrian Class I facilities	\$ 1.0	\$ 1.0	\$ 0.0	2004 Measure A sales tax project
230711	Implement parking improvements at Larkspur Ferry Terminal	\$ 0.5	\$ 0.5	\$ 0.0	

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# Napa County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
22746	Widen Route 29/First Street overcrossing to 4 lanes	\$ 12.0	\$ 0.0	\$ 12.0	
94073	Construct a flyover connecting southbound Route 221 to southbound routes 12 and 29 (environmental and design phases)	\$ 6.3	\$ 6.3	\$ 0.0	Funding for subsequent project phases is being pursued
94075	Construct grade separation improvements at Route 12/Route 29 intersection (environmental phase)	\$ 1.5	\$ 1.5	\$ 0.0	Funding for subsequent project phases is being pursued
94076	Construct the Trancas intermodal facility adjacent to the Route 29 and Redwood Road/Trancas Street interchange	\$ 6.3	\$ 0.0	\$ 6.3	
230371	Construct ADA-compliant pedestrian and bicycle path from Presidents Circle to railroad track in Yountville	\$ 0.3	\$ 0.0	\$ 0.3	
230373	Construct pedestrian and bicycle pathway from Madison Street to Solano Avenue	\$ 0.6	\$ 0.0	\$ 0.6	
230374	Construct pedestrian crosswalk at Charter Oak and Main Streets in St. Helena	\$ 0.1	\$ 0.0	\$ 0.1	
230376	Construct pedestrian and bicycle crossing at Tunnel of Elms in St. Helena	\$ 0.5	\$ 0.0	\$ 0.5	
230377	Construct pedestrian and bicycle crossing over Sulphur Creek at Oak Avenue in St. Helena	\$ 0.6	\$ 0.0	\$ 0.6	
230378	Implement accessibility improvement projects in downtown St. Helena, including curb cuts	\$ 1.2	\$ 0.0	\$ 1.2	
230379	Improve the truck route between Adams Street and Main Street	\$ 1.3	\$ 0.0	\$ 1.3	
230381	Improve signalization along Main Street in St. Helena	\$ 1.3	\$ 0.0	\$ 1.3	
230387	Construct a roundabout or improve traffic signals to improve safety at the Deer Park/Silverado Trail intersection	\$ 2.2	\$ 0.0	\$ 2.2	
230388	Improve the safety of the Oak Knoll/Silverado Trail intersection	\$ 0.4	\$ 0.0	\$ 0.4	
230389	Improve the safety of the Yountville Cross/Silverado Trail intersection	\$ 0.5	\$ 0.0	\$ 0.5	
230390	Improve the safety of the Oakville Crossroad/Route 29 intersection	\$ 0.4	\$ 0.0	\$ 0.4	
230392	Extend Devlin Road from Fagan Creek to Green Island Road	\$ 20.4	\$ 0.0	\$ 20.4	
230393	Construct middle-turn lane on Route 29 from Galleron Lane to St. Helena	\$ 20.4	\$ 0.0	\$ 20.4	
230394	Improve the traffic signals at Solano and Wine Country avenues (includes road widening, drainage and rail crossing improvements)	\$ 0.7	\$ 0.0	\$ 0.7	

## Napa County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230483	Prepare Project Study Report (PSR) to improve Silverado Trail/Third/Coombsville/East intersection and improve Silverado Trail south of First Street	\$ 2.2	\$ 0.0	\$ 2.2	
230484	Install traffic signals on Imola Avenue at Route 29 ramps in Napa	\$ 0.9	\$ 0.0	\$ 0.9	
230486	Extend Devlin Road from Tower Road to Airpark Road in American Canyon	\$ 4.6	\$ 0.0	\$ 4.6	
230498	Construct Class I bicycle trail from Route 29 to Silverado Trail	\$ 1.1	\$ 0.0	\$ 1.1	
230499	Construct bicycle/pedestrian path from Oak Circle to south Yountville town limit	\$ 0.2	\$ 0.0	\$ 0.2	
230508	Elevate Solano Avenue from Yountville to Dry Creek	\$ 2.2	\$ 1.1	\$ 1.1	
230518	Construct a roundabout at Forest Road/Route 128	\$ 4.4	\$ 0.0	\$ 4.4	
230519	Improve the safety of the Route 29/Route 128 (Rutherford Crossroad) intersection by constructing a roundabout or improving signal operations	\$ 6.2	\$ 0.0	\$ 6.2	
230599	Implement Phase 2 improvements to Route 12 (Jamieson Canyon), including grade realignment and full safety barrier	\$ 21.5	\$ 0.0	\$ 21.5	For Phase 1, see Bay Area Region/Multi-County project #94152
230622	Construct new bicycle/pedestrian trail through American Canyon	\$ 5.6	\$ 0.0	\$ 5.6	
230695	Local streets and roads maintenance	\$ 1,284.0	\$ 403.0	\$ 221.0	Shortfall remains

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## San Francisco County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
21502	Implement pedestrian projects, including sidewalk repair, crossing signal, signage improvements and an education campaign	\$ 120.4	\$ 116.4	\$ 4.0	2003 Proposition K sales tax project
21503	Implement a traffic calming program aimed at reducing auto traffic speeds and improving pedestrian and bicyclist safety throughout San Francisco	\$ 100.3	\$ 95.3	\$ 5.0	2003 Proposition K sales tax project
21504	Improve roadways throughout San Francisco by installing new traffic signs and signals, providing new transit lane markings, installing new parking meters and relocating a traffic maintenance shop	\$ 176.8	\$ 171.8	\$ 5.0	2003 Proposition K sales tax project
21505	Repair and retrofit local bridge structures and pedestrian overcrossings	\$ 72.3	\$ 67.3	\$ 5.0	
21510	Extend the Third Street Light Rail line from north of King Street to Clay Street in Chinatown via a new Central Subway, including the purchase of light-rail vehicles	\$ 1,570.0	\$ 1,570.0	\$ 0.0	Resolution 3434 Regional Transit Expansion Program and 2003 Proposition K sales tax project
21533	Plant trees and maintain new and existing trees in public rights-of-way throughout San Francisco	\$ 55.1	\$ 50.1	\$ 5.0	2003 Proposition K sales tax project
21535	Implement Travel Demand Management (TDM) program, including transit route planning, bicycle and pedestrian planning and transit-oriented development studies and planning	\$ 106.0	\$ 104.0	\$ 2.0	2003 Proposition K sales tax project
21549	Implement direct access route from Hunters Point Shipyard to U.S. 101, including repaving existing roadway and adding new curbs and curb ramps, sidewalks, street lighting, trees and route signage	\$ 225.0	\$ 215.0	\$ 10.0	
22249	Upgrade and extend streets and other vehicular facilities throughout San Francisco	\$ 34.0	\$ 24.0	\$ 10.0	2003 Proposition K sales tax project
22412	Purchase light-rail vehicles to expand Muni rail service	\$ 44.5	\$ 1.2	\$ 43.3	2003 Proposition K sales tax project
22415	Provide new historic streetcar service along the Embarcadero between the Caltrain Station and Fisherman's Wharf; extend streetcar service from Fisherman's Wharf to Fort Mason	\$ 16.4	\$ 3.8	\$ 12.6	Regional Measure 2 Toll Bridge Program and 2003 Proposition K sales tax project
22420	Implement Bus Rapid Transit (BRT) and Transit Preferential Streets (TPS) programs throughout San Francisco	\$ 54.0	\$ 39.6	\$ 14.4	2003 Proposition K sales tax project
22462	Implement bicycling programs, including construction and rehabilitation of bicycle lanes and paths; improve signage and crossings; and implement a public awareness campaign	\$ 63.6	\$ 61.6	\$ 2.0	2003 Proposition K sales tax project

# San Francisco County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
22512	Provide capital improvements to support ferry service between Treasure Island and San Francisco	\$ 57.1	\$ 45.0	\$ 12.1	Resolution 3434 Regional Transit Expansion Program
22982	Enhance transit programs in San Francisco that promote system connectivity and accessibility, close service gaps and expand transit service	\$ 196.1	\$ 191.1	\$ 5.0	2003 Proposition K sales tax project
22984	Construct new/reconstruct existing wheelchair curb ramps	\$ 41.1	\$ 36.1	\$ 5.0	2003 Proposition K sales tax project
94632	Extend Third Street Light Rail from Fourth and King streets to Bayshore Caltrain Station	\$ 649.0	\$ 649.0	\$ 0.0	2003 Proposition K sales tax and Regional Measure 2 Toll Bridge Program project
98593	Fund the Integrated Transportation Management System (SFgo)	\$ 138.4	\$ 133.4	\$ 5.0	2003 Proposition K sales tax project
230161	Implement a Bus Rapid Transit (BRT) project on Van Ness Avenue (includes dedicated transit lanes, signal priority and pedestrian and urban design upgrades)	\$ 87.6	\$ 87.6	\$ 0.0	Resolution 3434 Regional Transit Expansion Program
230164	Implement a Bus Rapid Transit (BRT) project on Geary Boulevard (includes dedicated transit lanes, signal priority and pedestrian and urban design upgrades)	\$ 219.8	\$ 127.3	\$ 92.5	
230168	Improve the Great Highway between Lincoln Way and 48th Avenue (includes resurfacing roadway, installing drainage systems and constructing medians)	\$ 19.4	\$ 1.5	\$ 17.9	
230207	Implement a Bus Rapid Transit (BRT) project on the Geneva Avenue/Harney Way corridor (includes new infrastructure and rolling stock)	\$ 265.0	\$ 225.0	\$ 40.0	
230211	Extend trolley coach infrastructure into Mission Bay along 16th Street and Third Street, and implement transit signal priority along 16th Street and Fillmore Street	\$ 13.9	\$ 4.1	\$ 9.8	
230215	Extend existing trolley coach lines throughout San Francisco	\$ 5.6	\$ 1.3	\$ 4.3	2003 Proposition K sales tax project
230364	Improve water access to San Francisco parks	\$ 4.0	\$ 4.0	\$ 0.0	
230490	Reconstruct and widen Harney Way to 8 lanes (6 mixed flow, 2 bus-only for Bus Rapid Transit service) and improve bicycle lanes and sidewalks	\$ 54.3	\$ 51.3	\$ 3.0	
230517	Improve transit and roadway connectivity between San Francisco and San Mateo counties	\$ 280.0	\$ 275.0	\$ 5.0	
230555	Reconstruct ramps on the east side of the San Francisco-Oakland Bay Bridge's Yerba Buena Island tunnel	\$ 183.0	\$ 183.0	\$ 0.0	

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## San Francisco County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230581	Improve San Francisco ferry infrastructure, including terminals, intermodal connections, ferry berths, emergency response systems and landside improvements	\$ 30.8	\$ 25.8	\$ 5.0	2003 Proposition K sales tax project
230585	Improve the functionality, safety and attractiveness of local streets and arterials in San Francisco	\$ 28.8	\$ 23.8	\$ 5.0	
230594	Improve San Francisco BART stations to enhance passenger safety, accessibility and capacity, improve signage and provide real time transit information	\$ 188.2	\$ 183.2	\$ 5.0	2003 Proposition K sales tax project
230696	Local streets and roads maintenance	\$ 3,562.0	\$ 2,123.0	\$ 681.0	Shortfall remains

# San Mateo County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
21602	Reconstruct U.S. 101/Broadway interchange	\$ 59.5	\$ 28.0	\$ 31.5	
21603	Modify U.S. 101/Woodside Road interchange	\$ 50.3	\$ 30.3	\$ 20.0	
21604	Construct auxiliary lanes (one in each direction) on U.S. 101 from Sierra Point to San Francisco County line	\$ 6.7	\$ 3.2	\$ 3.5	
21606	Reconstruct U.S. 101/Willow Road interchange	\$ 53.8	\$ 53.8	\$ 0.0	
21607	Modify University Avenue overcrossing of U.S. 101 to improve operational efficiency and safety (includes widening of overcrossing, constructing new southbound off-ramp and auxiliary lane, and adding bicycle lanes)	\$ 6.4	\$ 2.1	\$ 4.3	
21608	Construct auxiliary lanes (one in each direction) on U.S. 101 from Marsh Road to Embarcadero Road	\$ 119.9	\$ 119.9	\$ 0.0	Partially funded with Proposition 1B Corridor Mobility Improvement Account funds
21609	Improve local access from Sneath Lane and San Bruno Avenue to I-280/I-380 interchange (study phase only)	\$ 2.0	\$ 2.0	\$ 0.0	
21610	Construct auxiliary lanes (one in each direction) on U.S. 101 from San Bruno Avenue to Grand Avenue	\$ 57.5	\$ 26.6	\$ 30.9	
21612	Improve access to/from west side of Dumbarton Bridge on Route 84 connecting to U.S. 101 (includes flyovers, interchange improvements and conversion of Willow Road between Route 84 and U.S. 101 to expressway)	\$ 92.4	\$ 80.4	\$ 12.0	2004 Measure A sales tax project
21613	Improve Route 92 from San Mateo-Hayward Bridge to I-280 (includes widening and uphill passing lane from U.S. 101 to I-280)	\$ 85.6	\$ 50.6	\$ 35.0	2004 Measure A sales tax project
21615	Reconstruct I-280/Route 1 interchange, including ramps	\$ 70.0	\$ 53.0	\$ 17.0	1988 and 2004 Measure A sales tax project
21623	Improve Caltrain stations (includes upgrades/relocation of platforms, new platforms, pedestrian tunnels, pedestrian crossings and parking improvements)	\$ 139.0	\$ 119.1	\$ 19.9	1988 Measure A sales tax project
21624	Implement an incentive program to support transit-oriented developments within 1/2-mile of Caltrain stations that have a minimum density of 40 units per acre	\$ 19.6	\$ 3.3	\$ 16.3	
21626	Implement Caltrain grade separation program in San Mateo County	\$ 714.2	\$ 629.2	\$ 85.0	1988 and 2004 Measure A sales tax project
21892	Widen Woodside Road from 4 to 6 lanes from El Camino Real to Broadway	\$ 16.6	\$ 7.7	\$ 8.9	
21893	Widen Route 92 from Half Moon Bay city limits and Pilarcitos Creek (includes widening shoulders and travel lanes to standard widths and straightening curves)	\$ 40.1	\$ 24.5	\$ 15.6	

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## San Mateo County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
22120	Construct ferry terminal at Redwood City	\$ 15.0	\$ 15.0	\$ 0.0	
22226	Construct Bayshore Intermodal Facility for Caltrain, Muni light rail, and Muni and SamTrans buses (includes cross-platform transit transfers between Muni Third Street light-rail station and Caltrain Bayshore station)	\$ 36.5	\$ 27.3	\$ 9.2	
22227	Extend Geneva Avenue to the U.S. 101/Candlestick Point interchange (includes Caltrain grade separation at Tunnel Avenue and other local street improvements)	\$ 44.2	\$ 22.1	\$ 22.1	
22229	Reconstruct U.S. 101/Sierra Point Parkway interchange (includes extension of Lagoon Way to U.S. 101)	\$ 30.7	\$ 26.3	\$ 4.4	
22230	Construct auxiliary lanes (one in each direction) on I-280 from I-380 to Hickey Boulevard	\$ 87.7	\$ 53.6	\$ 34.1	2004 Measure A sales tax project
22232	Construct streetscape improvements on Mission Street (Route 82) from John Daly Boulevard to San Pedro Road	\$ 3.4	\$ 3.4	\$ 0.0	
22239	Widen Manor Drive overcrossing at Route 1 (includes new traffic signals at intersection)	\$ 22.0	\$ 10.1	\$ 11.9	2004 Measure A sales tax project
22261	Replace San Pedro Creek Bridge over Route 1	\$ 6.8	\$ 3.7	\$ 3.1	
22268	Provide countywide shuttle service between Caltrain stations and major activity centers (includes purchase of vehicles)	\$ 175.0	\$ 154.1	\$ 20.9	2004 Measure A sales tax project
22271	Widen Skyline Boulevard (Route 35) from 2 to 4 lanes between I-280 and Sneath Lane	\$ 6.4	\$ 3.9	\$ 2.5	
22274	Install an Intelligent Transportation System (ITS) and a Traffic Operation System (TOS) countywide	\$ 73.7	\$ 39.8	\$ 33.9	2004 Measure A sales tax project
22279	Construct new U.S. 101/Produce Avenue interchange (includes replacement of Produce Avenue on- and off-ramps and South Airport Boulevard ramps to U.S. 101 at Wondercolor Lane)	\$ 16.4	\$ 8.2	\$ 8.2	
22282	Improve U.S. 101 operations near Route 92	\$ 49.8	\$ 23.0	\$ 26.8	2004 Measure A sales tax project
22615	Improve station facilities and other rail improvements in Redwood City, Menlo Park and East Palo Alto in conjunction with the Dumbarton Rail Corridor	\$ 39.3	\$ 39.3	\$ 0.0	2004 Measure A sales tax project
22726	Implement ferry service between South San Francisco and Alameda/Oakland	\$ 51.2	\$ 51.2	\$ 0.0	Resolution 3434 Regional Transit Expansion Program

# San Mateo County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
22751	Improve operations and safety of Route 1 in Half Moon Bay (includes extending Route 1 to Half Moon Bay city limits and channelization at local intersections)	\$ 40.8	\$ 23.9	\$ 16.9	2004 Measure A sales tax project
22756	Reconstruct U.S. 101/Candlestick Point interchange	\$ 73.7	\$ 51.2	\$ 22.5	
94643	Widen Route 92 from Half Moon Bay city limits to Route 1 (includes adding left-turn lanes, signal modifications, shoulders and bicycle lanes)	\$ 29.9	\$ 29.9	\$ 0.0	
94644	Construct westbound slow-vehicle lane on Route 92 from Route 35 to I-280	\$ 57.6	\$ 45.6	\$ 12.0	
94656	Construct Devil's Slide Bypass between Montara and Pacifica	\$ 362.6	\$ 362.6	\$ 0.0	
94667	Provide SamTrans Americans with Disabilities Act (ADA) paratransit services (includes operating support and purchase of new paratransit vehicles)	\$ 491.8	\$ 491.8	\$ 0.0	1998 and 2004 Measure A sales tax project
98176	Construct auxiliary lanes on U.S. 101 from 3rd Avenue to Millbrae and reconstruct U.S. 101/Peninsula interchange	\$ 188.2	\$ 188.2	\$ 0.0	
98204	Add travel lane (one in each direction) on Route 1 (Calera Parkway) between Fassler Avenue and Westport Drive in Pacifica (includes traffic signal coordination on Fassler Avenue and Reina Del Mar Avenue)	\$ 44.4	\$ 18.0	\$ 26.4	
230192	Improve SamTrans bus services (includes enhanced service levels, transit priority measures, signal timing and dedicated bus lanes)	\$ 2.5	\$ 2.5	\$ 0.0	
230349	Improve local access to National Park Service (NPS) lands in San Mateo	\$ 151.1	\$ 151.1	\$ 0.0	
230417	Modify U.S. 101/Holly Street interchange (includes widening eastbound to northbound loop to 2 lanes and eliminating northbound to westbound loop)	\$ 3.2	\$ 3.2	\$ 0.0	
230424	Modify Route 92/El Camino Real interchange	\$ 3.0	\$ 3.0	\$ 0.0	
230428	Extend Blomquist Street over Redwood Creek to East Bayshore and Bair Island Road	\$ 5.2	\$ 5.2	\$ 0.0	
230430	Implement San Mateo's bicycle and pedestrian program	\$ 45.0	\$ 45.0	\$ 0.0	2004 Measure A sales tax project
230434	Implement local circulation improvements and the local streets traffic management program	\$ 20.0	\$ 20.0	\$ 0.0	
230592	Improve streetscape and traffic calming along Bay Road, and construct new northern access connection between Demeter Street and University Avenue	\$ 14.8	\$ 14.8	\$ 0.0	
230697	Local streets and roads maintenance	\$ 3,089.0	\$ 1,503.0	\$ 729.0	Shortfall remains
230704	Make Route 92 operational improvements to Chess Drive on-ramps	\$ 2.5	\$ 2.5	\$ 0.0	

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## Santa Clara County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
21702	Construct interchange at U.S. 101 and Buena Vista Avenue	\$ 27.0	\$ 0.0	\$ 27.0	
21714	Widen U.S. 101 between Monterey Highway and Route 25 and construct an interchange at U.S. 101/Route 25 (includes an extension to Santa Teresa Boulevard)	\$ 243.0	\$ 0.0	\$ 243.0	Environmental document includes widening U.S. 101 from Route 25 to Route 129
21719	Improve I-880/I-280/Stevens Creek Boulevard interchange (includes eliminating eastbound off-ramp loop and reconfiguring the off-ramp to eastbound Stevens Creek Boulevard, and improving Winchester Boulevard at I-280)	\$ 150.0	\$ 0.0	\$ 150.0	
21720	Improve U.S. 101/Tennant Avenue interchange, including constructing a new bridge parallel to existing bridge over U.S. 101, widening Tennant Avenue from 2 lanes to 4 lanes with bicycle lanes and sidewalks, and adding a new northbound loop on-ramp	\$ 18.2	\$ 9.1	\$ 9.1	
21722	Improve U.S. 101 southbound Trimble Road/De La Cruz Boulevard/Central Expressway interchange	\$ 43.0	\$ 21.5	\$ 21.5	
21749	Extend Butterfield Boulevard from Tennant Avenue to Watsonville Road (includes new roadway segment, railroad overpass bridge, drainage channel, traffic signal upgrade, median, landscaping, bicycle lanes and sidewalks)	\$ 20.6	\$ 9.9	\$ 10.7	
21760	Double-track segments of the Caltrain line between San Jose and Gilroy	\$ 86.0	\$ 86.0	\$ 0.0	2000 Measure A sales tax project and 2000 Traffic Congestion Relief Program (TCRP) project
21785	Reconfigure local roadway and interchange at U.S. 101/Blossom Hill Road in San Jose (includes widening Blossom Hill Road over U.S. 101)	\$ 22.0	\$ 12.0	\$ 10.0	
21787	Expand the Palo Alto Caltrain Station and Bus Transit Center	\$ 230.0	\$ 230.0	\$ 0.0	
21790	Provide VTA's share of funds for additional train sets, passenger facilities and service upgrades for the ACE service from San Joaquin and Alameda counties	\$ 26.9	\$ 26.9	\$ 0.0	
21797	Implement Route 17 bus service improvements between downtown San Jose and downtown Santa Cruz	\$ 3.0	\$ 3.0	\$ 0.0	2000 Measure A sales tax project
21921	Extend BART from Fremont (Warm Springs) to San Jose/Santa Clara (includes environmental, preliminary engineering, property acquisition and construction phases)	\$ 7,587.0	\$ 7,587.0	\$ 0.0	Resolution 3434 Regional Transit Expansion Program and 2000 Measure A sales tax project
21922	Implement the Mineta San Jose International Airport automated people-mover service	\$ 508.0	\$ 508.0	\$ 0.0	2000 Measure A sales tax project
21923	Implement Bus Rapid Transit (BRT) in the Alameda and El Camino Real corridors	\$ 233.4	\$ 233.4	\$ 0.0	2000 Measure A sales tax project

# Santa Clara County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
22014	Implement Bus Rapid Transit (BRT) in the Santa Clara-Alum Rock corridor with the potential to convert to light-rail in the future (Santa Clara-Alum Rock Phase 1)	\$ 132.0	\$ 132.0	\$ 0.0	Resolution 3434 Regional Transit Expansion Program and 2000 Measure A sales tax project; for Phase 2, see Santa Clara project #22019
22019	Convert Bus Rapid Transit (BRT) to light-rail transit in the Santa Clara-Alum Rock corridor (Santa Clara-Alum Rock Phase 2)	\$ 326.7	\$ 326.7	\$ 0.0	2000 Measure A sales tax project; for Phase 1, see Santa Clara project #22014
22118	Extend Hill Road from East Main Avenue to Peet Avenue	\$ 11.5	\$ 2.1	\$ 9.4	
22134	Construct a lane on southbound U.S. 101 using the existing median from south of Story Road to Yerba Buena Road; modify the U.S. 101/Tully road interchange to a partial cloverleaf	\$ 69.8	\$ 69.8	\$ 0.0	Partially funded with Proposition 1B Corridor Mobility Improvement Account funds
22142	Improve U.S. 101/Capitol Expressway interchange (includes new northbound on-ramp from Yerba Buena Road)	\$ 50.1	\$ 0.0	\$ 50.1	
22145	Widen westbound Route 237 on-ramp from Route 237 to northbound U.S. 101 to 2 lanes and add auxiliary lane on northbound U.S. 101 from Route 237 on-ramp to Ellis Street interchange (includes Traffic Operation System/TOS elements)	\$ 17.9	\$ 0.0	\$ 17.9	
22153	Extend Mary Avenue north across Route 237 (includes reconfiguring the Mathilda Avenue/U.S. 101 interchange)	\$ 74.1	\$ 34.0	\$ 40.1	
22156	Improve Route 85 northbound to Route 237 eastbound connector ramp and construct auxiliary lane on eastbound Route 237 between Route 85 and Middlefield Road	\$ 32.0	\$ 0.0	\$ 32.0	
22162	Improve Route 237 westbound to Route 85 southbound connector ramp (includes widening off-ramp to Route 85 to 2 lanes and adding a southbound auxiliary lane between Route 237 and El Camino Real interchange on Route 85)	\$ 94.7	\$ 0.0	\$ 94.7	
22175	Widen Almaden Expressway to 8 lanes between Coleman Road and Blossom Hill Road	\$ 12.8	\$ 0.0	\$ 12.8	
22179	Widen Central Expressway from 4 to 6 lanes between Lawrence Expressway and San Tomas Expressway	\$ 23.4	\$ 0.0	\$ 23.4	
22180	Widen Central Expressway between Lawrence Expressway and Mary Avenue to provide auxiliary lanes	\$ 22.7	\$ 0.6	\$ 22.1	
22186	Widen San Tomas Expressway to 8 lanes between El Camino Real (Route 82) and Williams Road	\$ 69.9	\$ 0.0	\$ 69.9	

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# Santa Clara County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
22246	Implement bicycle and pedestrian improvements on Blossom Hill Road	\$ 13.0	\$ 13.0	\$ 0.0	
22808	Implement Caltrain grade separation program in Santa Clara County	\$ 0.5	\$ 0.5	\$ 0.0	
22809	Realign DeWitt Avenue/Sunnyside Avenue intersection	\$ 8.7	\$ 1.6	\$ 7.1	
22814	Extend Foothill Expressway westbound deceleration lane at San Antonio Road	\$ 0.9	\$ 0.0	\$ 0.9	
22815	Upgrade Miramonte Avenue bikeway to Class II between Mountain View and Foothill Expressway	\$ 1.6	\$ 0.3	\$ 1.3	
22822	Provide real-time expressway traffic information in Santa Clara County	\$ 6.1	\$ 0.0	\$ 6.1	
22839	Convert the HOV lane on Central Expressway between San Tomas and De La Cruz to a general purpose lane	\$ 0.1	\$ 0.1	\$ 0.0	
22842	Improve Route 152/Ferguson Road intersection; includes lighting and widening	\$ 2.0	\$ 0.0	\$ 2.0	
22843	Widen Lawrence Expressway from 6 to 8 lanes between Moorpark Avenue/Bollinger Road and south of Calvert Court	\$ 8.9	\$ 0.0	\$ 8.9	
22854	Improve bicycle/pedestrian safety at I-280/Oregon-Page Mill interchange	\$ 9.5	\$ 0.0	\$ 9.5	
22873	Widen Loyola Bridge over Foothill Expressway to add a third lane for left turns and improve bicycle/pedestrian access	\$ 9.1	\$ 0.0	\$ 9.1	
22878	Realign Wildwood Avenue to connect with Lawrence Expressway (includes new traffic signal)	\$ 5.3	\$ 1.0	\$ 4.3	
22883	Modify medians on Lawrence Expressway (including those at Lochinvar Avenue, De Sota Avenue, Golden State Drive, Granada Avenue, Buckley Street and St. Lawrence Drive/Lawrence Station Road) for limited access	\$ 1.8	\$ 0.0	\$ 1.8	
22895	Improve the operations of San Tomas Expressway/Route 17 interchange (includes restriping the eastbound through lane on White Oaks Road and adding a second right-turn lane on the southbound off-ramp)	\$ 3.2	\$ 0.0	\$ 3.2	
22909	Fund the operating and capital needs of Measure A transit services	\$ 1,954.0	\$ 1,954.0	\$ 0.0	
22910	Add Traffic Operations System (TOS) infrastructure on Santa Teresa Boulevard between Day Road and Mesa Road	\$ 8.5	\$ 0.0	\$ 8.5	
22925	Realign existing curve on DeWitt Avenue between Edmundson Avenue and Spring Avenue	\$ 3.1	\$ 0.6	\$ 2.5	
22944	Widen I-880 for HOV lanes in both directions from Route 237 in Milpitas to U.S. 101 in San Jose	\$ 105.0	\$ 105.0	\$ 0.0	Partially funded with Proposition 1B Corridor Mobility Improvement Account funds

# Santa Clara County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
22956	Extend the Capitol Avenue light-rail line from the Alum Rock Transit Center to a rebuilt Eastridge Transit Center	\$ 334.0	\$ 334.0	\$ 0.0	Resolution 3434 Regional Transit Expansion Program
22965	Construct U.S. 101/Mabury Road/Taylor Street interchange	\$ 59.1	\$ 30.0	\$ 29.1	
22978	Extend the Capitol Expressway light-rail transit (LRT) from Eastridge Transit Center to Nieman Boulevard	\$ 137.0	\$ 137.0	\$ 0.0	2000 Measure A sales tax project
22979	Construct local roadway improvements over-crossing U.S. 101 (includes local circulation improvements to Zanker Road, Old Bayshore Highway, N. 4th Street and Skyport Drive)	\$ 120.0	\$ 120.0	\$ 0.0	
98119	Extend light-rail transit from Winchester Station to Route 85 (Vasona Junction)	\$ 146.0	\$ 146.0	\$ 0.0	1996 Measure B sales tax project
230174	Construct a 4-lane bridge across Uvas Creek connecting the east and west sides of Tenth Street, including 4 travel lanes, bicycle lanes, sidewalks and a new traffic signal at the intersection of Tenth Street and Uvas Park Drive)	\$ 15.4	\$ 0.0	\$ 15.4	
230175	Construct a new 2-lane overcrossing on Las Animas Avenue at U.S. 101 (includes shoulders, bicycle lanes and sidewalks)	\$ 11.1	\$ 0.0	\$ 11.1	
230200	Extend Autumn Street from Union Pacific Railroad crossing to Park Avenue	\$ 33.5	\$ 0.0	\$ 33.5	
230201	Widen Coleman Avenue from 4 to 6 lanes from I-880 to Taylor Street	\$ 13.9	\$ 2.7	\$ 11.2	
230210	Rebuild box culvert under San Tomas Expressway	\$ 15.9	\$ 0.5	\$ 15.4	
230242	Add Capitol Expressway Traffic Operations System (TOS) between U.S. 101 and Almaden Expressway	\$ 4.3	\$ 0.0	\$ 4.3	
230246	Improve intersection at Lawrence Expressway and Prospect Road by adding a second left-turn lane and modifying the existing traffic signals	\$ 3.2	\$ 0.0	\$ 3.2	
230251	Improve expressway traffic operations system (TOS) in Santa Clara county (includes automated traffic count collection system, wireless controller communication system, wireless vehicular detection system, and signal and video infrastructure upgrades)	\$ 12.2	\$ 0.0	\$ 12.2	
230262	Construct a new interchange at U.S. 101 and Montague Expressway	\$ 17.0	\$ 3.0	\$ 14.0	
230265	Improve the operations of the intersection of Montague Expressway and Mission College Boulevard	\$ 4.9	\$ 0.0	\$ 4.9	

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## Santa Clara County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230267	Widen Montague Expressway to 8 lanes for HOV lanes between Lick Mill and Trade Zone boulevards and on Guadalupe River Bridge and Penitencia Creek Bridge	\$ 13.5	\$ 13.5	\$ 0.0	
230269	Construct a new interchange at Trimble Road and Montague Expressway	\$ 36.1	\$ 36.1	\$ 0.0	
230273	Widen Montague Expressway to 8 lanes between Trade Zone Boulevard and I-680 and to 6 lanes between I-680 and Park Victoria Drive for HOV lanes	\$ 24.5	\$ 14.8	\$ 9.7	
230292	Implement signal coordination between expressway and major cross-street signals in Santa Clara county	\$ 6.1	\$ 0.0	\$ 6.1	
230294	Conduct environmental and design studies to widen and create new alignment for Route 152 (from Route 156 to U.S. 101)	\$ 80.0	\$ 80.0	\$ 0.0	
230298	Replace Calaveras Boulevard 4-lane bridge over the Union Pacific Railroad tracks with new 6-lane structure with bicycle and pedestrian facilities and circulation improvements	\$ 82.7	\$ 22.0	\$ 60.7	
230302	Improve the intersection of Dixon Landing Road and North Milpitas Boulevard	\$ 3.7	\$ 0.0	\$ 3.7	
230304	Widen Dixon Landing Road from 4 to 6 lanes between North Milpitas Boulevard and I-880	\$ 80.0	\$ 80.0	\$ 0.0	
230339	Convert HOV queue-jump lanes along Central Expressway at Bowers Avenue to general purpose lanes	\$ 0.1	\$ 0.1	\$ 0.0	
230347	Improve U.S. 101 southbound ramps at 10th Street	\$ 3.6	\$ 0.0	\$ 3.6	
230350	Widen southbound U.S. 101 off-ramp at Cochrane Road from 2 to 3 lanes	\$ 1.1	\$ 0.0	\$ 1.1	
230356	Construct interchange at Lawrence Expressway and Arques Avenue	\$ 49.2	\$ 49.2	\$ 0.0	
230363	Construct interchange at I-880 and Montague Expressway (includes improvements to Montague Expressway)	\$ 13.0	\$ 13.0	\$ 0.0	
230385	Purchase and install emergency vehicle pre-emption detectors and video detection cameras at signalized intersections in downtown Palo Alto	\$ 1.5	\$ 0.2	\$ 1.3	
230407	Widen Route 17 off-ramp southbound at Hamilton Avenue	\$ 1.4	\$ 0.0	\$ 1.4	
230445	Improve Great America Parkway and Mission College Boulevard intersection (includes adding triple left-turn lanes in two directions and traffic signal upgrades)	\$ 9.2	\$ 0.0	\$ 9.2	
230449	Extend Charcot Avenue over I-880 as a new 2-lane roadway with bicycle and pedestrian improvements to connect to North San Jose employment center	\$ 38.0	\$ 19.0	\$ 19.0	

# Santa Clara County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230451	Rehabilitate Fatjo Place, Thompson Place, Arguello Place, Bray Avenue and Graham Lane	\$ 4.1	\$ 0.8	\$ 3.3	
230452	Convert downtown one-way couplets to two-way streets along 10th/11th Streets, Almaden Boulevard/Vine Street and 2nd/3rd Streets	\$ 24.0	\$ 12.0	\$ 12.0	
230456	Widen Zanker Road from 4 to 6 lanes	\$ 57.0	\$ 57.0	\$ 0.0	
230457	Improve Oakland Road from U.S. 101 to Montague Expressway by providing landscaping and operational improvements	\$ 12.1	\$ 6.0	\$ 6.1	
230458	Widen Berryessa Road from U.S. 101 to I-680 to provide access to planned Berryessa BART station	\$ 31.0	\$ 14.2	\$ 16.8	
230459	Extend Chynoweth Avenue from Almaden Expressway to Winfield Road	\$ 23.0	\$ 0.0	\$ 23.0	
230460	Widen Snell Avenue from Branham Lane to Chynoweth Avenue	\$ 5.9	\$ 1.1	\$ 4.8	
230461	Widen Branham Lane from Vista Park Drive to Snell Avenue (includes bicycle and pedestrian facilities)	\$ 11.6	\$ 2.3	\$ 9.3	
230469	Make local circulation improvements on Santa Teresa Boulevard (includes medians, landscaping, sidewalks and bicycle lanes)	\$ 13.2	\$ 13.2	\$ 0.0	
230471	Widen intersections and improve sidewalks throughout the city of Sunnyvale	\$ 17.8	\$ 17.8	\$ 0.0	
230492	Implement local roadway improvements to Old Oakland Road over U.S. 101	\$ 28.0	\$ 28.0	\$ 0.0	
230531	Construct auxiliary lanes on U.S. 101 in Mountain View and Palo Alto, from Route 85 to Embarcadero Road	\$ 113.0	\$ 113.0	\$ 0.0	
230532	Improve interchange at Route 237/North 1st Street	\$ 2.1	\$ 2.1	\$ 0.0	
230534	Electrify Caltrain line from Tamien Station to Gilroy	\$ 140.3	\$ 140.3	\$ 0.0	
230547	Implement Bus Rapid Transit (BRT) on Monterey Highway	\$ 96.6	\$ 96.6	\$ 0.0	
230551	Implement the Zero Emissions Bus (ZEB) program	\$ 23.7	\$ 23.7	\$ 0.0	
230552	Install and modify VTA facilities to support the Zero Emissions Bus (ZEB) program	\$ 95.0	\$ 95.0	\$ 0.0	
230554	Implement Bus Rapid Transit (BRT) between Sunnyvale and Cupertino	\$ 84.6	\$ 84.6	\$ 0.0	

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## Santa Clara County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230573	Improve ramps and intersections on Fremont and Bernardo avenues at Route 85	\$ 3.6	\$ 0.0	\$ 3.6	
230574	Improve the Route 85/Cottle Road interchange	\$ 5.3	\$ 5.3	\$ 0.0	
230577	Improve ramp and intersection on Route 152 eastbound at Bloomfield Avenue	\$ 2.0	\$ 0.0	\$ 2.0	
230579	Improve ramp/intersection on Route 152 eastbound at Frazier Lake Road	\$ 2.0	\$ 0.0	\$ 2.0	
230584	Improve ramp/intersection at Route 152 westbound at Watsonville Road	\$ 3.3	\$ 0.0	\$ 3.3	
230595	Implement Bus Rapid Transit (BRT) on Stevens Creek Boulevard from Diridon Station to De Anza College	\$ 143.2	\$ 143.2	\$ 0.0	
230641	Implement bicycle and pedestrian improvements in North San Jose	\$ 38.2	\$ 38.2	\$ 0.0	
230644	Implement miscellaneous intersection improvements in North San Jose	\$ 33.5	\$ 33.5	\$ 0.0	
230645	Implement improvements to the North First Street Core Area grid	\$ 70.6	\$ 70.6	\$ 0.0	
230698	Local streets and roads maintenance	\$ 8,177.0	\$ 4,432.0	\$ 1,477.0	Shortfall remains
230705	Improve local interchanges and auxiliary lanes	\$ 573.0	\$ 573.0	\$ 0.0	
230706	Make local streets and roads improvements (includes street channelization, overcrossings, bicycle and pedestrian access, and safety improvements)	\$ 334.0	\$ 334.0	\$ 0.0	

# Solano County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
21341	Construct new Fairfield/Vacaville multimodal train station for Capitol Corridor intercity rail service (Phases 1, 2 and 3)	\$ 39.6	\$ 29.6	\$ 10.0	Partially funded with Regional Measure 2 Toll Bridge Program funds
22629	Construct new Vallejo Baylink Ferry Terminal (includes additional parking, upgrade of bus transfer facilities and pedestrian access improvements)	\$ 85.6	\$ 75.6	\$ 10.0	Partially funded with Regional Measure 2 Toll Bridge Program funds
22630	Improve Parkway Boulevard overcrossing over Union Pacific Railroad tracks	\$ 12.4	\$ 12.4	\$ 0.0	
22631	Construct Route 12 westbound truck climbing lane at Red Top Road	\$ 13.2	\$ 13.2	\$ 0.0	State Highway Operation and Protection Program (SHOPP) project
22632	Widen American Canyon Road overpass at I-80	\$ 10.7	\$ 10.7	\$ 0.0	
22633	Widen Azuar Drive/Cedar Avenue from 2 to 4 lanes between P Street and Residential Parkway (includes bicycle lanes, railroad signals and rehabilitation improvements)	\$ 11.7	\$ 11.7	\$ 0.0	
22634	Construct an adjacent 200-space, at-grade parking lot at the Vacaville Intermodal Station (Phase 1)	\$ 12.9	\$ 12.9	\$ 0.0	Partially funded with Regional Measure 2 Toll Bridge Program funds; for Phase 2, see Solano project #230635
22700	Construct parallel corridor north of I-80 from Red Top Road to Abernathy Road	\$ 69.0	\$ 60.5	\$ 8.5	Regional Measure 2 Toll Bridge Program and 2000 Traffic Congestion Relief Program (TCRP) project
94151	Construct 4-lane Jepson Parkway from Route 12 to Leisure Town Road	\$ 194.0	\$ 134.0	\$ 60.0	
230311	Widen and improve Peterson Road with the addition of a truck-stacking lane (includes drainage improvements)	\$ 2.6	\$ 2.6	\$ 0.0	
230322	Rebuild and relocate eastbound Cordelia Truck Scales Facility (includes a new 4-lane bridge across Suisun Creek and new ramps at eastbound Route 12 and eastbound I-80)	\$ 100.9	\$ 100.9	\$ 0.0	Proposition 1B Trade Corridors Improvement Fund (TCIF) project
230326	Improve I-80/I-680/Route 12 interchange, including connecting I-680 northbound to Route 12 westbound (Jamieson Canyon), adding connectors and reconstructing local interchanges (Phase 1)	\$ 487.9	\$ 134.4	\$ 353.5	Partially funded with Regional Measure 2 Toll Bridge Program funds
230468	Provide auxiliary lanes on I-80 in eastbound and westbound directions from I-680 to Air Base Parkway (includes a new eastbound mixed-flow lane from Route 12 east to Air Base Parkway)	\$ 50.0	\$ 0.0	\$ 50.0	

<sup>1</sup> Committed Funds have been reserved by law for specific uses, or allocated by MTC action prior to the development of the Transportation 2035 Plan.

<sup>2</sup> Discretionary Funds are flexible funds available to MTC (and not already programmed in Committed Funds) for assignment to projects via the Transportation 2035 Plan planning process.

## Solano County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
230635	Construct new 400-space parking garage at the Vacaville Intermodal Station (Phase 2)	\$ 10.0	\$ 0.0	\$ 10.0	For Phase 1, see Solano project #22634
230650	Widen I-80 from Red Top Road to Air Base Parkway to add HOV lanes in both directions (includes pavement rehabilitation and ramp metering)	\$ 94.9	\$ 94.9	\$ 0.0	
230699	Local streets and roads maintenance	\$ 2,559.0	\$ 716.0	\$ 524.0	Shortfall remains
230708	Improve local interchanges and auxiliary lanes and make local streets and roads improvements (includes street channelization, overcrossings, bicycle and pedestrian access, and safety improvements)	\$ 15.0	\$ 15.0	\$ 0.0	

# Sonoma County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
21070	Realign and widen Route 116 (Stage Gulch Road) along Champlin Creek to improve safety, adding shoulders to accommodate pedestrians and bicyclists	\$ 39.1	\$ 39.1	\$ 0.0	
21884	Construct Petaluma crosstown connector/interchange	\$ 61.7	\$ 61.7	\$ 0.0	
21902	Widen U.S. 101 for HOV lanes from Pepper Road to Rohnert Park Expressway (Central Phase A)	\$ 118.3	\$ 118.3	\$ 0.0	Partially funded with Proposition 1B Corridor Mobility Improvement Account funds
21908	Study the environmental impacts of a future Port Sonoma ferry service and facility	\$ 20.0	\$ 20.0	\$ 0.0	
22190	Improve channelization and traffic signalization at Route 116/Route 121 intersection (includes Arnold Drive improvements)	\$ 21.8	\$ 10.0	\$ 11.8	
22191	Improve U.S. 101 North/Airport Boulevard interchange (includes widening Airport Boulevard to 2 lanes in each direction and adding turn lanes)	\$ 46.7	\$ 35.6	\$ 11.1	
22193	Construct new bypass on Route 116 in Forestville	\$ 20.0	\$ 15.1	\$ 4.9	
22194	Improve safety on Mark West Springs Road/Porter Creek Road (includes adding standard shoulders and turn pockets)	\$ 7.4	\$ 0.0	\$ 7.4	2004 Measure M sales tax project
22195	Improve U.S. 101/Old Redwood Highway interchange (includes modifying/replacing existing 2-lane interchange to at least a 5-lane interchange and improving ramps)	\$ 36.8	\$ 0.0	\$ 36.8	
22197	Improve local circulation at various locations in Town of Penngrove (includes improvements to Main Street, Petaluma Hill Road, Adobe Road, Old Redwood Highway and U.S. 101/Railroad Avenue)	\$ 38.0	\$ 0.0	\$ 38.0	
22203	Improve channelization and traffic signalization on River Road from Fulton Road to the town of Guerneville	\$ 8.0	\$ 4.0	\$ 4.0	
22204	Widen Fulton Road from 2 to 4 lanes from Guerneville Road to U.S. 101 and construct Route 12/Fulton Road interchange	\$ 79.0	\$ 0.0	\$ 79.0	
22205	Improve U.S. 101/Hearn Avenue interchange (includes widening overcrossing and ramps)	\$ 39.7	\$ 18.2	\$ 21.5	
22207	Extend Farmers Lane from Bellevue Avenue to Bennett Valley Road as a 3-lane or 4-lane arterial (includes a bicycle lane and sidewalk)	\$ 64.1	\$ 0.0	\$ 64.1	
22438	Improve Bodega Highway west of Sebastopol (includes straightening curves near Occidental and adding turn pockets)	\$ 4.0	\$ 2.0	\$ 2.0	2004 Measure M sales tax project

<sup>1</sup> Committed Funds have been reserved by law for specific uses, or allocated by MTC action prior to the development of the Transportation 2035 Plan.

<sup>2</sup> Discretionary Funds are flexible funds available to MTC (and not already programmed in Committed Funds) for assignment to projects via the Transportation 2035 Plan planning process.



## Sonoma County

(In millions of year-of-expenditure dollars)

Reference Number	Project/Program	Total Project Cost	Committed Funds <sup>1</sup>	Discretionary Funds <sup>2</sup>	Project Notes
22490	Convert bridges in Sonoma County from 1-lane to 2-lane	\$ 2.0	\$ 0.0	\$ 2.0	
22652	Rehabilitate pavement on U.S. 101 from Steele Lane to Grant Avenue overhead in Healdsburg	\$ 18.9	\$ 18.9	\$ 0.0	State Highway Operation and Protection Program (SHOPP) project
22655	Widen U.S. 101 for HOV lanes (one in each direction) from Rohnert Park Expressway to Santa Rosa Avenue (includes interchange improvements and ramp metering)	\$ 96.0	\$ 96.0	\$ 0.0	Partially funded with Proposition 1B Corridor Mobility Improvement Account funds
22656	Improve U.S. 101/East Washington Street interchange (includes new northbound on-ramp and improvements to southbound on-ramp)	\$ 23.7	\$ 0.0	\$ 23.7	
94689	Improve U.S. 101/Arata Lane interchange in Windsor, including new on- and off-ramps and realignment of Los Amigos Road north of Arata Lane (Phase 4)	\$ 13.0	\$ 0.0	\$ 13.0	
94691	Install traffic signal system on Route 121 and improve channelization at 8th Street	\$ 4.5	\$ 0.0	\$ 4.5	
98183	Widen U.S. 101 for HOV lanes between Steele Lane and Windsor River Road (Phase A)	\$ 123.9	\$ 123.9	\$ 0.0	Partially funded with Proposition 1B Corridor Mobility Improvement Account funds
230341	Improve channelization and traffic signalization on Mirabel Road and Route 116	\$ 3.6	\$ 0.0	\$ 3.6	2004 Measure M sales tax project
230345	Rehabilitate or replace existing Healdsburg Avenue Bridge	\$ 27.1	\$ 0.0	\$ 27.1	
230437	Provide infrastructure for two high-frequency Bus Rapid Transit corridors in Santa Rosa (includes vehicle purchases, infrastructure such as bus stops/ intermodal nodes, and technology support)	\$ 38.0	\$ 0.0	\$ 38.0	
230442	Implement service enhancements for Santa Rosa CityBus (includes technology enhancements such as video, automatic vehicle location and farebox upgrades, operations and maintenance facilities improvements, and vehicle purchases)	\$ 38.0	\$ 0.0	\$ 38.0	
230700	Local streets and roads maintenance	\$ 3,570.0	\$ 1,430.0	\$ 786.0	Shortfall remains



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## Appendix 2 – Supplementary Reports

MTC has published several supplementary reports in conjunction with the *Transportation 2035 Plan*. These include an *Environmental Impact Report*, a *Project Notebook*, and other topic-specific reports listed here. These reports are available online at [www.mtc.ca.gov](http://www.mtc.ca.gov), and in the MTC-ABAG Library. The reports also can be ordered via e-mail at [library@mtc.ca.gov](mailto:library@mtc.ca.gov), or by contacting the MTC-ABAG Library by phone at (510) 817-5836.

### Environmental Impact Report for the Transportation 2035 Plan

MTC, April 2009

As the lead agency, MTC prepared an *Environmental Impact Report* (EIR) for the Transportation 2035 Plan pursuant to the California Environmental Quality Act (CEQA).

The EIR presents a regionwide assessment of potential impacts of the Transportation 2035 Plan. Areas of evaluation include: transportation; air quality; climate change and greenhouse gases; land use, housing and social environment; energy; geology and seismicity; noise; and biological, water, visual and cultural resources. Measures to mitigate any significant adverse regional impacts identified in the analysis of

the Transportation 2035 Plan are recommended. A reasonable range of alternatives to the Transportation 2035 Plan is considered, and an environmentally superior alternative among the alternatives analyzed is evaluated. This EIR does not evaluate the site-specific impacts of individual projects, which will be analyzed in subsequent project-level EIRs performed by project sponsors.

Comments on the scope of the environmental analysis and EIR alternatives were solicited through the Notice of Preparation issued on February 19, 2008. Two public/agency scoping meetings were held on March 10 and March 13, 2008. Of the three government-to-government consultations held between federally recognized Tribal governments and MTC, the Association of Bay Area Governments and Caltrans District 4, the October 2008 meeting focused on a review of the proposed North Bay transportation projects and a discussion of environmental issues to be considered in the EIR. In addition, upon request, one-on-one consultations between the Federated Indians of Graton Rancheria, MTC and Caltrans were held on March 21, 2008 and October 15, 2008. On November 12, 2008, a discussion on draft mitigations was held with

federal, state and Tribal land management, wildlife and regulatory agencies. MTC also held two public hearings, on January 27 and January 28, 2009, to solicit comments on the EIR.

A draft EIR was released for a 45-day public review period in December 2008. The Commission reviewed and considered this environmental assessment prior to taking action on the plan. The Commission certified the final EIR on April 22, 2009. An executive summary of the impacts and mitigations of the Transportation 2035 Plan is included in the EIR and is incorporated in the Transportation 2035 Plan in full by reference.

### Transportation Air Quality Conformity Analysis

MTC, April 2009

The *Transportation Air Quality Conformity Analysis* is a conformity assessment of both the Transportation 2035 Plan and Amendment 09-06 to the 2009 Transportation Improvement Program (TIP).

The purpose of a conformity assessment is to demonstrate that the transportation activities in the long-range plan and/or TIP will not cause

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new air quality violations, worsen existing violations, or delay timely attainment of relevant national ambient air quality standards. A conformity finding means that the total motor vehicle emissions projected for a plan and/or TIP are within the emissions limits (“budgets”) established in the latest State Implementation Plan, and that transportation control measures are implemented in a timely fashion.

This *Conformity Analysis* is prepared in accordance with the U.S. Environmental Protection Agency’s (EPA) air quality conformity regulations and with the Bay Area Transportation Air Quality Conformity Protocol (MTC Resolution No. 3757), which has been approved by U.S. EPA as the Conformity State Implementation Plan (SIP) for the Bay Area.

A *Draft Transportation Air Quality Conformity Analysis* was released for a 30-day public review period in January 2009. The Commission approved the conformity determination on April 22, 2009. The Federal Highway Administration and Federal Transit Administration subsequently issued their joint approval of the conformity determination on May 29, 2009.

## Project Notebook

MTC, May 2009

The *Project Notebook* provides additional, detailed technical information on Transportation 2035 investments for staff at MTC and its partner agencies, as well as other interested organizations and individuals. The *Project Notebook* covers the transit operating and capital shortfalls, local streets and roads shortfalls, financial assumptions, and MTC’s system efficiency programs. It also provides project-level details on the transportation projects and programs in the financially constrained Transportation 2035 Plan.

## Public Outreach and Involvement Program Report

MTC, May 2009

MTC joined with partner agencies, particularly the Association of Bay Area Governments (ABAG), to gather public input for development of the Transportation 2035 Plan. An extensive public outreach and involvement program for the Transportation 2035 Plan was conducted in three phases over a two year period.

### Phase One: Vision and Goals

MTC launched the Transportation 2035 planning effort in early 2007, with a focus on defining the region’s vision and goals. This was

followed, in broad strokes, by identification of those policies and investment strategies that would be needed to carry out that vision, and for substantially reducing congestion and the main Bay Area contributor to global warming, carbon dioxide emissions (CO<sub>2</sub>) from cars and other sources.

The public involvement campaign began with discussions at the monthly meetings of MTC’s three advisory committees. In addition, three regional forums were held in June 2007: an evening public workshop that was attended by about 85 residents; a joint workshop for members of MTC’s three advisory committees; and a roundtable discussion with MTC’s chair and leaders of economic, environmental and social equity organizations in the Bay Area.

A statistically valid public opinion survey was conducted in the fall of 2007. The telephone poll questioned (in English, Cantonese or Spanish) 1,800 randomly selected adult residents of the nine-county Bay Area about their concern for air quality and global warming, their assessment of a range of transportation-related priorities, and their attitudes toward land use — an increasingly important factor in transportation planning. The poll had a margin of error of +/- 2.3 percent.



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Additionally, a Web survey mirrored the telephone poll. The Web survey was completed by nearly 2,000 respondents.

Also in the fall of 2007, a regional forum jointly sponsored by MTC and ABAG brought together some 700 participants from every corner of the region, including public sector staff, community and environmental advocates, elected officials, business people, and concerned citizens, who participated in discussions of strategies for substantially reducing congestion and carbon dioxide emissions (CO<sub>2</sub>). At the forum, the various proposals were subjected to a reality check via panel discussions by experts and local officials, break-out sessions, and on-the-spot electronic polling.

To gather additional qualitative data to help guide the Transportation 2035 effort, a series of evening public stakeholder meetings were held in November 2007, at three locations around the region. These were attended by some 115 residents.

Also in late November and early December 2007, more than 200 “person-on-the-street” interviews were conducted over a three-week period with members of the public who do not typically attend public meetings regarding transportation. These brief, five-to-10-minute interviews — conducted at public gathering places (such as colleges, farmers’ markets, tran-

sit hubs and shopping centers) in all nine Bay Area counties — were designed to gather opinions on key questions relating to transportation revenue and pricing, climate protection, as well as transportation and land use. The 35-plus interview sites represented a broad cross section of demographics within the MTC service area. Bilingual staff members facilitated participation from Spanish- and Chinese-speaking residents.

Members of the public, cities, counties and partner agencies also were invited to submit possible projects for consideration for inclusion in the long-range plan. Projects had to have a public sponsor and conform to MTC guidelines; proposals were submitted to the appropriate county congestion management agency for an initial screening. MTC hosted a regional workshop in January 2008 to brief sponsors on the online application process, which had a March 2008 deadline.

### **Phase Two: Investment Tradeoffs**

In March 2008, the Commission gave provisional approval to a set of Transportation 2035 Vision Policy Strategies that would serve to influence the ensuing investment tradeoff discussions and inform the project evaluation process. Discussions on the investment tradeoffs inherent in developing the 25-year plan formed the core of the second phase of the public involvement effort.

The Phase Two public involvement campaign began in January 2008 with the first in a series of six monthly Joint Advisor Workshops held with members of MTC’s three citizen advisory committees. The joint advisor workshops continued through the month of June and provided an opportunity for the Commission’s advisors, who represent a broad cross-section of the region’s stakeholders, to weigh in on the investment tradeoffs facing the Commission.

In the spring of 2008, MTC launched a second statistically valid telephone poll of 3,600 registered voters (400 in each of the nine Bay Area counties). Over the course of several weeks the telephone poll was offered in English, Spanish and Cantonese, and had a margin of error of +/- 1.6 percent.

In addition to the telephone poll, the public involvement campaign included a series of nine public workshops, one in each of the Bay Area counties, with on-the-spot electronic voting, as well as a Web survey and numerous focus groups. Held in May 2008, the workshops drew over 450 attendees who recorded their opinions via live electronic voting with instantaneous results. In addition to gauging public opinion on the investment tradeoffs, the electronic voting included several questions testing respondents knowledge of transportation facts, so that the meetings provided some context for and served to educate participants.

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A 12-minute video — titled *Change in Motion* — shown at the May 2008 workshops provided an overview of the challenges that must be addressed by the Transportation 2035 Plan. A Web survey patterned after the workshop electronic voting was available on the MTC Web site from June 3, 2008, through July 8, 2008, and yielded a total of 1,083 completed responses.

Simultaneous with the outreach workshops, MTC conducted nine focus groups (one per county) to discuss potential investment packages with some 100 Bay Area residents who were contacted as part of the spring 2008 telephone poll. MTC also contracted with 10 community-based organizations for assistance in conducting focus groups in low-income communities and communities of color throughout the Bay Area. An additional 150 residents recruited by the community organizations participated in these focus groups; depending on the community, translators were available for Spanish, Cantonese or Vietnamese speakers.

The public comment fed into the development of a preferred Transportation 2035 investment package approved by the Commission in July 2008.

### **Phase Three: Draft and Final Transportation 2035 Plans**

The investment package was subjected to technical analyses and incorporated into a *Draft Transportation 2035 Plan* released for public comment in December 2008. During this final phase of public involvement, MTC held two public hearings, on January 27 and January 28, 2009, and several meetings with stakeholders, including MTC's citizen advisors, to solicit comments on the draft plan. MTC received numerous items of written correspondence, and prepared written responses to each one. This information was presented to the Commission for its consideration prior to Commission action on the long-range plan.

### **Travel Forecasts Data Summary**

**MTC, December 2008**

The *Travel Forecasts Data Summary* documents the modeling assumptions and travel and air quality forecasts prepared for the Transportation 2035 Plan and its supplementary technical reports. The data in this report are presented in the *Equity Analysis Report*, the *Transportation Air Quality Conformity Analysis*, the *Environmental Impact Report for the Transportation 2035 Plan*, the *Performance Assessment Report*, and the *Bay Area High-Occupancy Toll (HOT) Network Study*. The data summary includes:

- socio-economic forecasts such as population, employment and land use
- pricing assumptions such as the costs of gas, parking and bridge tolls
- transportation network assumptions regarding the supply of roads and transit
- trip generation and distribution characteristics such as the number of daily trips and distribution of trip purposes
- mode choice characteristics regarding how many people travel by automobile, by transit, by bicycle and by foot
- traffic characteristics such as the levels of congestion and delay on roadways
- affordability of transportation among different income levels
- air quality forecasts, such as emissions of pollutants regulated by federal and state laws

### **Equity Analysis Report**

**MTC, February 2009**

The *Equity Analysis Report* is intended to measure both the benefits and burdens associated with the transportation investment alternatives included in the Transportation 2035 Plan, and to make sure that minority and low-income communities share equitably in the benefits of the plan's investments without bearing a disproportionate share of the burdens.

The *Equity Analysis Report* compares the impacts of the Transportation 2035 Plan's investment alternatives on the Bay Area's low-income and minority communities, relative to the remainder of the region. Five equity indicators are included in the analysis. One indicator evaluates the plan's financial investments, and four indicators measure forecasted outcomes, derived from MTC's travel model for the horizon year 2035. These four indicators are:

- access to low-income jobs
- access to non-work activities (such as shopping, school and recreational trips)
- vehicle emissions
- affordability (an experimental test measure)

MTC's Minority Citizens Advisory Committee convened a Transportation 2035 Equity Analysis Subcommittee to review the Equity Analysis methodology, provide input on refinements to the measures used in past equity analyses, and make recommendations for future enhancements. Meetings were held periodically throughout 2008 and were open to interested stakeholders and the public.

An April 2009 addendum to this report was prepared to incorporate updated financial information presented in the adopted Transportation 2035 Plan.

## Performance Assessment Report

MTC, December 2008

Three performance-based analyses informed development of the Transportation 2035 Plan. These are described below and detailed in the *Performance Assessment Report*.

### 1) Vision Scenario Assessment

This effort, undertaken in fall 2007, was intended to answer the question "What would it take to meet the Transportation 2035 performance objectives?" MTC tested three ambitious investment packages: a) a program of freeway operations and management investments; b) a regional network of HOT lanes complemented by extensive bus enhancements; and c) an extensive program of rail and ferry expansion. Because the investment approaches did not come close to achieving the called-for reductions, MTC also tested aggressive focused-growth and transportation pricing scenarios. The lessons learned in this assessment include:

- Infrastructure alone does not help us reach our targets, though management of freeway operations is effective for congestion relief.
- Pricing has a much larger effect.
- Focused growth helps us reach targets in the longer term.
- Technology advances and behavior changes are needed.

### 2) Project Performance Assessment

The purpose of this analysis, conducted in spring 2008, was to inform the selection of individual investments in the financially constrained portion of the plan. The assessment consists of both qualitative and quantitative analyses that build on the plan's policy foundation. In the qualitative assessment, MTC reviewed all candidate investments for discretionary funding with respect to their support for key Transportation 2035 policy tenets. In the quantitative evaluation, MTC estimated the benefit-cost ratio and cost-effectiveness of a subset of 60 higher-cost projects and programs. The analysis identified outliers, both positive and negative, with respect to the plan's policies and performance objectives. This information comprised one set of factors the Commission considered in proposing a financially constrained program of investments.

### 3) Proposed Investment Performance Assessment

This analysis assesses the degree to which the Transportation 2035 Plan is expected to help the region progress toward the performance objectives. As presaged by the Vision Scenario Assessment, the financially constrained program itself is not sufficient to meet the objectives. To do so, the region will need to pursue further policy actions, partnerships and advocacy platforms.

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## Government-to-Government Consultation With Native American Tribes

MTC, June 2009

As required by state and federal law, MTC conducted government-to-government consultations with federally recognized Tribal governments during preparation of the Transportation 2035 Plan. MTC, Caltrans District 4 and the Association of Bay Area Governments (ABAG) hosted three meetings for Bay Area Tribal governments: June 2007, February 2008 and October 2008. The meetings included status reports on the development of the Transportation 2035 Plan, ABAG's FOCUS effort and Caltrans' planning activities. These forums provided an opportunity to open lines of communication with Tribal leaders on these planning efforts.

Additionally, MTC met twice with one federally-recognized tribe that requested one-on-one consultations to discuss how the Transportation 2035 Plan affected its Tribal lands. These meetings were held in March 2008 and October 2008.

This report includes materials and notes from the meetings with the Tribal governments through each phase of Transportation 2035 Plan development.



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## Appendix 3 – Related Plans

The Transportation 2035-related plans described in this appendix are available for review online at [www.mtc.ca.gov](http://www.mtc.ca.gov), or in the MTC-ABAG Library, except as noted here. The *San Francisco Bay Area Seaport Plan* is available online at the San Francisco Bay Conservation and Development Commission (BCDC) Web site at [www.bcdc.ca.gov/pdf/planning/plans/seaport/seaport.pdf](http://www.bcdc.ca.gov/pdf/planning/plans/seaport/seaport.pdf). The *Bay Area 2009 Clean Air Plan* will be available online at the Bay Area Air Quality Management District Web site ([www.baaqmd.gov](http://www.baaqmd.gov)) in winter 2009.

### Regional Airport System Plan

Regional Airport Planning Committee,  
September 2000 (incorporated into the  
Transportation 2035 Plan by reference)

### General Aviation Element of the Regional Airport System Plan

Regional Airport Planning Committee,  
June 2003 (incorporated into the  
Transportation 2035 Plan by reference)

The *Regional Airport System Plan* (RASP) is prepared by the Regional Airport Planning Committee (RAPC), which is convened by the Association of Bay Area Governments, the San Francisco Bay Conservation and Development Commission, and MTC. The latest update pre-

dicts a doubling of air passenger travel by 2020 and a tripling of air cargo volumes. The plan is advisory in nature and was designed to address three major issues:

- the need for additional airport system capacity
- regional airport system alternatives to provide this capacity
- significant environmental tradeoffs, to the extent they are known

The RASP focuses on the region's three commercial airports — Oakland International Airport, San Francisco International Airport and Mineta San Jose International Airport. An update of the general aviation element was completed in June 2003.

The General Aviation Element assessed six key areas:

1. airport system planning
2. land use compatibility
3. public information resources
4. ground-side airport access
5. airspace issues
6. airport funding

The plan calls on RAPC to:

- conduct a study of vacant land parcels that should be protected to support airport viability

- support legislation that would assist Airport Land-Use Committees in carrying out their mandate under state law
- create a general “facts and figures” Web site on airport activities
- support higher funding levels for general aviation airports in both FAA and Caltrans programs

Many events have occurred that have drastically changed the key findings and conclusions from the 2000 RASP. Most notably, the 9/11 World Trade Center catastrophe, the economic downturn earlier this decade, and the more recent economic recession we are in now as a result of the subprime mortgage fallout. For these reasons, the three regional agencies have begun a RASP update (now called the Regional Airport System Planning Analysis, or RASPA) to reassess air passenger travel demand forecasts, look at new emerging air traffic control technologies to make more efficient use of existing airport capacity and assess the feasibility of various demand management strategies. The new RASPA is expected to be completed by early 2010 (see [www.mtc.ca.gov/planning/air\\_plan/update.htm](http://www.mtc.ca.gov/planning/air_plan/update.htm)).

Most of the General Aviation Element recommendations have been implemented. ABAG is

preparing an inventory of vacant land parcels that should be protected around local airports; this assessment will be completed by June 2009. MTC has set up a Web site on General Aviation information and contacts, and an Aviation Resource Guide (see [www.mtc.ca.gov/planning/air\\_plan/index.htm](http://www.mtc.ca.gov/planning/air_plan/index.htm)).

### San Francisco Bay Area Seaport Plan

San Francisco Bay Conservation and Development Commission (BCDC) and MTC, April 18, 1996 (subsequently amended and incorporated into the Transportation 2035 Plan by reference)

The *San Francisco Bay Area Seaport Plan* is the product of a cooperative planning effort by BCDC and MTC. The plan provides the basis for Bay Area port policies and looks at future seaport needs and suggested improvements.

The *Seaport Plan* employs land-use designations and enforceable policies that BCDC and MTC use in their regulatory and funding decisions. The plan designates areas determined to be necessary for future port-related development as “port priority use areas.” The *Seaport Plan* as amended designates 10 port priority use areas, which include the following five active seaports:

- Oakland
- San Francisco
- Redwood City
- Richmond
- Benicia

Subsequent to its 1996 adoption, the *Seaport Plan* has been amended to remove the port priority use designation from the following locations:

- City of Alameda
- Encinal Terminals (in Alameda)
- Portion of Oakland Army Base
- Port of Benicia (198 acres along western extent)
- Port of Richmond (Terminal 4 liquid bulk terminal)
- Port of Oakland (Ninth Avenue break bulk terminal)
- Port of San Francisco (Pier 70 break bulk terminal)
- Port of Redwood City (Abbott Laboratories property; formerly Cargill Salt Company terminal)
- Collinsville (Solano County)

### The Bay Area Freeway Performance Initiative: A Strategic Plan for Bay Area Freeways — Report on Phase 1 Corridors

MTC, October 2008

The Freeway Performance Initiative (FPI) is a relatively new MTC effort to improve the operations, safety and management of the Bay Area’s freeway system. This report summarizes the results and recommendations for the first series of corridor studies, and includes an assess-

ment of regional traffic system management infrastructure needs. The effort involves collaboration with the Bay Area Partnership, including Caltrans District 4 and the Bay Area county congestion management agencies.

The purpose of the FPI is to develop a comprehensive strategic plan to guide the next generation of freeway investment, with a prioritized list of strategies and projects as the final product. The goals and objectives are to:

- improve system efficiency through the deployment of system operations and management strategies
- maximize use of available freeway capacity by completing the high-occupancy vehicle (HOV) lane system and its conversion to express lanes.
- reduce congestion in key locations by constructing needed freeway improvements

The FPI process differs from traditional corridor planning by focusing on both recurrent day-to-day congestion and nonrecurrent congestion due to freeway incidents. Specific congestion strategies are recommended and prioritized using a uniform benefit/cost methodology that addresses mobility, safety and reliability. Taken together, the FPI corridor studies offer a strategic roadmap for managing and investing in the freeway network and provide objective analysis-driven input to the region’s long-range transportation planning process.

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## Bay Area High-Occupancy Toll (HOT) Network Study

MTC, December 2008

MTC assessed the feasibility of implementing a regional network of HOT lanes, also called “express lanes,” by converting existing carpool lanes to HOT lanes and using the revenue to complete the region’s carpool/express lane system. The planning effort occurred over the course of two-and-a-half years, with participation by the California Department of Transportation (Caltrans), California Highway Patrol and county congestion management agencies. The study reviews financial feasibility, operational and policy considerations, governance and performance, including travel time savings and emissions reductions.

The study found that express lanes are a valuable tool to more effectively manage available freeway capacity and provide revenues to build out the planned HOV system more than 20 years faster than traditional pay-as-you-go financing. The study also estimated \$6.1 billion of net revenues (after building out the network) would be available for other corridor improvements, such as public transit.

## Regional Bicycle Plan for the San Francisco Bay Area, 2009 Update

MTC, March 2009

MTC updated the *Regional Bicycle Plan* in conjunction with each of the nine Bay Area counties, and other planning partners and advocacy groups. This update provides an inventory of the Regional Bikeway Network that ultimately will be 2,100 miles long.

The *Regional Bicycle Plan* accomplishes nine major goals:

- ensures that accommodations for bicyclists are routinely considered in the planning and design of all roadway, transit and other transportation projects
- defines a comprehensive Bikeway Network that connects Bay Area communities
- encourages local and statewide policies to improve bicycle safety
- provides for education and training sessions that emphasize the positive benefits of cycling
- develops seamless integration between bicycling and public transportation
- encourages the development of facilities and institutions that contribute to a good bicycling environment
- facilitates an equitable and effective regional funding and implementation process

- supports ongoing regional bicycle planning
- collects regionwide travel and collision data for bicycles

## Bay Area 2009 Clean Air Plan

Bay Area Air Quality Management District, MTC, Association of Bay Area Governments; Available winter 2009

To comply with the California Clean Air Act, the Bay Area Air Quality Management District, in cooperation with MTC and the Association of Bay Area Governments, is preparing an update to the *Bay Area 2005 Ozone Strategy*.

The *Bay Area 2009 Clean Air Plan* updates the *Bay Area 2005 Ozone Strategy* in accordance with requirements of the California Clean Air Act to implement “all feasible measures” to reduce ozone. In a single, integrated plan, the *Clean Air Plan* also will consider the impacts of control measures on particulate matter, air toxics and greenhouse gases. The plan includes a review of progress made to date in improving air quality in recent years, and establishes emission control measures to be implemented through 2012.

The *Draft Bay Area 2009 Clean Air Plan* will be available for public review in fall 2009. The BAAQMD anticipates adopting the final plan in winter 2009.

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## Bay Area Intelligent Transportation Systems (ITS) Architecture

MTC, December 2007

To ensure that the development of Intelligent Transportation Systems (ITS) projects would follow a systems engineering process, the Federal Highway Administration required all metropolitan regions to adopt by April 8, 2005, an Intelligent Transportation Systems Architecture. MTC prepared the *2004 Bay Area Regional ITS Architecture and Strategic Plan* to meet that requirement. The *2007 Bay Area ITS Architecture* is the latest update to that plan. Its purpose is to facilitate ITS planning and to aid in ITS project development and procurement.

The *2007 Bay Area ITS Architecture*, along with its technical framework, is one vehicle to facilitate coordination among organizations. The ITS Architecture represents a coordinated approach (over a 10-year horizon) to installing and operating technologies across jurisdictions in the Bay Area. It can be used to identify ITS deployment priorities, coordinate projects, and understand agency roles and responsibilities associated with ITS. It includes security and emergency operations components and the goals are tied directly to MTC's long-range transportation plan.

The architecture is an important tool used by:

- MTC to identify integration opportunities and operational needs as part of the transportation planning process

- operating agencies to recognize and plan for transportation integration opportunities in the region
- other organizations and individuals that use the transportation system in the San Francisco Bay Area

The *2007 Bay Area ITS Architecture* is an interactive, project-based Web site located at [www.mtc.ca.gov/planning/ITS/](http://www.mtc.ca.gov/planning/ITS/). Stakeholders can browse the site and seek answers to frequently asked questions.

## Goods Movement Initiatives, 2009 Update

MTC, February 2009

In 2004, MTC and a consortium of interests, including the Port of Oakland, the East Bay Economic Development Alliance, the Bay Area Council and others, contributed resources for a *Regional Goods Movement Study for the San Francisco Bay Area*, which studied the goods movement industry in the Bay Area and central San Joaquin County. The 2009 update highlights major initiatives undertaken since 2004 and new issues likely to emerge as priorities in the next four years.

The 2009 update includes information on the Trade Corridors Improvement Fund, which is part of voter-approved Proposition 1B and dedicates over \$2 billion towards goods movement infrastructure throughout the state. As

part of the program, MTC partnered with local agencies, the Port of Oakland, and entities throughout the Central Valley to create a Northern California trade program.

The update also includes information on work done at MTC to evaluate the implications of local land-use decisions on the goods movement industry and the transportation network, as well as efforts to develop a common freight platform for MTC and its partners for federal advocacy and regional planning efforts.

## San Francisco Bay Area Regional Rail Plan

MTC, September 2007

MTC, working together with the Bay Area Rapid Transit District (BART), the Peninsula Corridor Joint Powers Board (Caltrain) and the California High-Speed Rail Authority, and in collaboration with a coalition of rail passenger and freight operators, regional partners and rail stakeholders, prepared a comprehensive *San Francisco Bay Area Regional Rail Plan*. Preparation of the plan was required by the Regional Measure 2 Traffic Congestion Relief Program, which was approved by Bay Area voters in 2004.

The *Regional Rail Plan* examines ways to incorporate passenger trains into existing rail systems, improve connections to other trains and transit, expand the regional rapid transit network, increase rail capacity, and coordinate rail investment around transit-friendly communities and



businesses. The plan includes a detailed analysis of potential high-speed rail routes between the Bay Area and the Central Valley for the California High-Speed Rail Authority's environmental review of the proposed rail lines. The plan looks at possible rail improvements in both the near and long terms.

## Regional Transportation Emergency and Security Planning Report

MTC, January 2009

MTC's *Regional Transportation Emergency and Security Planning Report* has been prepared pursuant to the federal 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA), which identified transportation system security as a distinct factor to be considered in the transportation planning process of metropolitan areas and states. This report provides a summary of ongoing efforts to address emergency and security preparedness for the region's transportation system, whether in response to natural hazards or human-caused disasters.

Over the past decade MTC has played an active role in emergency planning, which has evolved to include the following security objectives:

- work with state, regional and local agencies to ensure a timely and coordinated response to any regional emergency, through advanced planning and preparation such as the development of regional emergency response

coordination plans, the facilitation of regional transportation emergency preparedness exercises and coordination of security training for transportation agency personnel

- support federal legislation to promote adequate security funding for airports, seaports and other transportation operations
- support federal legislation to ensure timely reimbursement of emergency funding used to repair damaged transportation infrastructure

## California Strategic Highway Safety Plan

California Business, Transportation and Housing Agency, California Department of Transportation, California Highway Patrol, California Office of Traffic Safety, California Department of Motor Vehicles and California Department of Alcoholic Beverage Control; September 2006

The 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA) established a new Highway Safety Improvement Program for the purpose of achieving a significant reduction in traffic fatalities and serious injuries on public roads. As required under SAFETEA, the California Department of Transportation led the effort to develop California's *Strategic Highway Safety Plan* to identify key safety needs of the state, and strategies that address these needs. California's plan was approved by the Secretary of the Business, Transportation and Housing Agency on September 26, 2006.

The plan guides all roadway safety activities in the following manner:

- highlights challenges to roadway safety on California's roads
- presents roadway fatalities
- proposes high-level strategies to reduce fatalities through 16 challenge areas
- serves as a guide for the implementation of projects and activities through 2010
- seeks to reduce fatalities by 15 percent from 2004 levels by the year 2010
- seeks to reduce bicycle and pedestrian fatalities each by 25 percent from 2004 levels by the year 2010

Nearly 300 stakeholders representing 80 agencies and organizations, including MTC, are working together to implement and monitor the plan's effectiveness.

## 2002 High-Occupancy-Vehicle (HOV) Lane Master Plan Update

MTC, March 2003

The *HOV Lane Master Plan Update* evaluated the performance of existing HOV lanes, and made recommendations for study or implementation of new HOV lanes in various freeway corridors. This plan has largely been superseded by MTC's efforts to develop a Bay Area Express Lane Network.

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