

Attachment A: Draft Transportation Control Measure Narratives

TCM A-1: Local and Areawide Bus Service Improvements	
Purpose	<ul style="list-style-type: none"> • Maintain bus fleet • Sustain existing services and provide new or improved bus services • Reduce diesel emissions from buses • Improve speed and on-time reliability of bus services
Description	<ol style="list-style-type: none"> 1. Fund the timely replacement of worn out buses in local transit operator fleets as funding becomes available 2. Sustain existing services and implement improved or new Express Bus or Bus Rapid Transit (BRT) on major travel corridors (as defined in bus elements of MTC’s Resolution 3434 Regional Transit Expansion Program and Regional Measure 2 Program) as funding becomes available 3. Fund the retrofit or replacement of diesel buses with clean fuel buses or emission control technologies 4. Fund Transit Priority Measures (TPMs) component of the Transportation Climate Action Campaign
Background	<ul style="list-style-type: none"> • In its Transportation 2035 Plan, MTC estimates that transit operating and capital replacement costs for Bay Area transit providers are projected to total \$138 billion over the next 25 years. This includes \$98 billion in operating costs plus \$40 billion for capital replacement. Revenues available to address these needs total \$113 billion, leaving a remaining shortfall of \$25 billion (\$8 billion for operations and \$17 billion for capital replacement). Bus and other bus capital needs total approximately \$13 billion; the Transportation 2035 Plan includes \$5 billion in committed funds and \$2 billion in discretionary funds towards these needs, leaving a remaining shortfall of \$6 billion. • Also as part of the Transportation 2035 Plan, the Commission committed 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. Therefore, the Transit Sustainability Project may have significant impact on these bus service improvements. • Transit operators can reduce diesel bus engine emissions by acquiring new heavy-duty clean air vehicles or installing retrofit devices on existing heavy-duty diesel bus engines. In 2004, MTC provided \$14 million in Congestion Mitigation Air Quality Improvement (CMAQ) funds to retrofit 1,700 diesel buses operated by 12 transit operators. In past funding years, the BAAQMD has also funded replacement of diesel buses with clean fuel buses and retrofits of diesel buses to reduce emissions from existing diesel bus engines. • The BAAQMD has funded the replacement of transit buses and school buses and retrofitted transit and school buses with diesel particulate filters. For example, since 2003 the Lower Emission School Bus Program has replaced 84 school buses at a cost of approximately \$11,204,100; and retrofitted 204 buses with diesel particulate filters at a cost of \$1,285,000. • Adding more service and developing new service concepts (such as enhanced bus, Bus Rapid Transit (BRT), and Regional Express Buses) to better serve existing markets and fill in regional transit gaps are determined by the individual transit operators as revenue permits. Decisions on expanding bus service must address both the needs of commuters as well as

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	<p>low-income, elderly, disabled and youth travelers who do not have access to other travel options. During weekday peak hours in 2006, bus transit provided over 1.3 million seat miles per hour in the Bay Area¹.</p> <ul style="list-style-type: none"> ● Adopted as part of the 2001 Regional Transportation Plan, MTC’s Resolution 3434 Regional Transit Expansion Program is an \$18 billion, long-term, and multifaceted funding strategy for directing local, regional, state and federal dollars to nearly two dozen high-priority bus, rail and ferry expansions. The bus service expansion projects included in Resolution 3434 are as follows: <ul style="list-style-type: none"> ○ AC Transit Berkeley/Oakland/San Leandro Bus Rapid Transit; ○ AC Transit Enhanced Bus: Hesperian/Foothill/MacArthur corridors; ○ Regional Express Bus (multiple transit operators); ○ SFCTA/SFMTA Van Ness Avenue Bus Rapid Transit; and ○ VTA Downtown to East Valley Bus Rapid Transit. ● In 2004, voters passed Regional Measure 2 (RM 2), raising the toll on the seven State-owned toll bridges by \$1.00. This extra dollar funds various transportation projects within the region, including express buses, that reduce congestion or make improvements to travel in the toll bridges, as identified in SB 916 (Chapter 715, Statutes of 2004). The bus service expansion projects funded by RM2 are as follows: <ul style="list-style-type: none"> ○ Express bus service in the San Francisco-Oakland, San Mateo-Hayward, Dumbarton, Carquinez, Benicia-Martinez, Richmond-San Rafael bridge corridors; ○ Owl (all-night) bus service in BART corridors; ○ Napa Vine service to Vallejo Intermodal terminal; and ○ AC Transit Berkeley/Oakland/San Leandro Bus Rapid Transit. ● Transit Priority Measures (TPMs) are operational improvements or road-related infrastructure that preserve and improve bus speed and on-time reliability, and reduces variability in travel times and delay of buses. TPMs include arterial bus lanes, transit signal priority, queue jumper lanes, and bus bulbs. Case studies indicate significant ridership gains can be realized when TPMs are packaged with improvements in headways and other operations improvements (fewer bus stops, unique branding, all-door boarding and pre-paid fares) typically associated with BRT. ● MTC’s Transportation 2035 Plan launched a new program, the Transportation Climate Action Campaign, to reduce the region’s carbon footprint. The \$400 million campaign includes new funding for Transit Priority Measures.
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> ● Fund the timely replacement of worn-out buses in local transit operator fleets as funding becomes available (\$900 million) ● Sustain existing services where feasible with available funding (\$4 billion) ● Fund Regional Measure 2 Express Bus North and Express Bus South Improvements (\$53 million) ● Fund the retrofit or replacement of diesel buses with clean fuel buses or emission control technologies (includes the BAAQMD’s Lower Emission School Bus Program) (\$12 million for 2009 funding cycle)

¹ Seat miles are a measure of transit capacity and are calculated by multiplying the number of transit vehicles mile travelled by the number of seats in each vehicle.

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	<ul style="list-style-type: none"> Implement BAAQMD’s Advanced Technology Program which funds hybrid buses and demonstration projects (\$1.5 million) <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> Sustain service of BRT and Express Buses as identified in Phase 1 where feasible with available funding (\$ 10.7 billion) Fund the timely replacement of worn out buses in local transit operator fleets as funding becomes available (\$2.4 billion) Implement Bus Rapid Transit Service on the Telegraph Avenue/International Boulevard/E. 14th Street Corridor (\$250 million) Implement Bus Rapid Transit Service on the Grand-MacArthur Corridor (\$41 million) Implement Enhanced Rapid Bus Service in Livermore, Dublin, and Pleasanton (includes higher frequencies, new stops and improved stop amenities) (\$14 million) Implement a Bus Rapid Transit project on Van Ness Avenue (includes dedicated transit lanes, signal priority and pedestrian and urban design upgrades) (\$88 million) Implement Bus Rapid Transit as Phase 1 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 million) Fund Transit Priority Measures component of the Transportation Climate Action Campaign (includes arterial bus lanes, transit signal priority, queue jumper lanes, and bus bulbs) (\$10 million)
Cost	Phase 1: \$ 5.0 billion Phase 2: \$ 13.6 billion
Travel Market Affected	This measure would affect all intraregional travel, including commute travel; shopping, personal business, social and recreational travel; passenger and commute trips to airports; and school trips.
Co-Benefits	<ul style="list-style-type: none"> Improved connectivity between transit services and destinations Travel time savings from TPMs and new express/enhanced bus projects that provide faster and/or more direct service between trip origins and destinations Transportation cost savings by providing new bus transit options that may allow some households to own fewer or no cars Community enhancements through creation of more and higher quality transit options and services
TCM Monitoring	<ul style="list-style-type: none"> Track capital rehabilitation and replacement using the Regional Transit Capital Inventory (RTCI) Track number of diesel buses retrofitted or replaced and emissions benefits associated with these upgrades Track implementation status of express bus or BRT projects Track on-time performance on routes with TPMs
Implementing Agencies	Transit Operators, MTC, and BAAQMD
Impediments	<ul style="list-style-type: none"> Due to the current economic recession, cuts in State transit funding, and reductions in sales tax revenue for transit, Bay Area transit operators are facing challenges to maintain and sustain their existing systems and, in light of financial constraints, are cutting their transit budgets, cutting service, increasing fares, and/or delaying or deferring capital

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	<p>maintenance and service expansions. Thus, maintaining the existing fleet, sustaining existing services, restoring service that has been cut, and expanding service will require new funding, improved productivity and lower costs. New revenues may be available in the future from higher gas taxes, bridge tolls, and voter approved sales tax revenues in individual counties.</p> <ul style="list-style-type: none">• Because the implementation of transit priority measures requires the involvement of local jurisdictions/public works and transit operators, it may take time to address both technical and policy issues.
Sources	<ul style="list-style-type: none">• MTC's Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/

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TCM A-2: Local and Regional Rail Service Improvements	
Purpose	<ul style="list-style-type: none"> • Maintain rail-cars, stations, and other rail capital assets • Sustain existing services and upgrade, expand or provide new local and regional rail services as funding becomes available
Description	<ol style="list-style-type: none"> 1. Fund the timely replacement of rail capital assets in local transit operator fleets as funding becomes available 2. Sustain existing services and implement rail element of MTC’s Resolution 3434 Regional Transit Expansion Program as funding becomes available
Background	<ul style="list-style-type: none"> • In its Transportation 2035 Plan, MTC estimates that transit operating and capital replacement costs for Bay Area transit providers are projected to total \$138 billion over the next 25 years. This includes \$98 billion in operating costs plus \$40 billion for capital replacement. Revenues available to address these needs total \$113 billion, leaving a remaining shortfall of \$25 billion (\$8 billion for operations and \$17 billion for capital replacement). Rail-car and other rail capital needs total approximately \$27 billion; the Transportation 2035 Plan includes \$11 billion in committed funds and \$4 billion in discretionary funds towards these needs, leaving a remaining shortfall of \$11 billion. • The Bay Area’s rail system includes light-rail (such as Muni Metro and VTA Metro), rapid rail (such as BART), and commuter rail (such as Caltrain, Capitol Corridor and ACE) services. During weekday peak hours in 2006, rail transit provided over 2 million seat miles per hour in the Bay Area¹. • Adopted as part of the 2001 Regional Transportation Plan, MTC’s Resolution 3434 Regional Transit Expansion Program is an \$18 billion, long-term, and multifaceted funding strategy for directing local, regional, state and federal dollars to nearly two dozen high-priority bus, rail and ferry expansions. The rail service expansion projects included in Resolution 3434 are as follows: <ul style="list-style-type: none"> ○ BART/Oakland Airport Connector; ○ Tri-Valley Transit Access Improvements to BART; ○ East Contra Costa BART Extension (eBART); ○ BART: Fremont to Warm Springs; ○ BART: Warm Springs to San Jose/Santa Clara; ○ Caltrain Express: Baby Bullet (Open for service); ○ Caltrain Express: Phase 2; ○ Caltrain Electrification; ○ Transbay Transit Center (Phases 1 and 2); ○ Capitol Corridor Expansion and Enhancements; ○ MUNI Third Street Light-Rail Central Subway; ○ ACE Service Expansion; ○ Sonoma-Marin Rail (SMART); ○ Dumbarton Rail; and ○ Downtown to East Valley Light Rail. • MTC, in partnership with California High-Speed Rail Authority (CHSRA), Caltrain, and BART, adopted the Regional

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	<p>Rail Plan in September 2007, which included an evaluation of a Bay Area to Central Valley high-speed rail alignment. CHSRA certified the Bay Area to Central Valley Program EIR/EIS in July 2008. The CHSRA is currently proceeding with detailed project-level EIR/EIS for the high-speed train from San Jose to San Francisco. In addition, the CHSRA is currently working with Bay Area and Central Valley transportation agencies (via the Altamont Corridor Partnership Working Group) to implement a joint use regional rail and high-speed rail infrastructure project in the Altamont Corridor.</p> <ul style="list-style-type: none"> • In November 2008, California voters passed Proposition 1A, the Safe, Reliable High-Speed Passenger Train Bond Act, which includes nearly \$10 billion in general obligation rail bond proceeds to help finance construction of a high-speed rail link between San Francisco and San Diego. The Bay Area is slated to receive \$408 million for improvements to ACE, BART, Caltrain, SFMTA, and VTA light-rail. In addition, the Bay area is well-positioned to receive a significant portion of the \$8 billion appropriation for high-speed rail included in the American Recovery and Reinvestment Act of 2009. • Seven of the 9 counties have adopted local sales tax measures that fund transportation improvements including rail expansion projects. Most recently, in November 2008, Santa Clara County voters approved the 1/8-cent Measure B to fund operations and maintenance of the BART to San Jose/Santa Clara extension and Sonoma and Marin county voters approved the 1/4-cent Measure Q to fully fund construction and operation of the Sonoma Marin Area Rail Transit (SMART) commuter rail.
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> • Fund the timely replacement of worn out rail-cars and other rail capital assets in local transit operator fleets as funding becomes available (\$1.8 billion) • Sustain existing services where feasible with available funding (\$2 billion) <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> • Fund the timely replacement of worn out rail-cars and other rail capital assets in local transit operator fleets as funding becomes available (\$4.9 billion) • Sustain rail services identified in Phase 1 where feasible with available funding (\$ 5.3 billion) • Build a BART Oakland Airport Connector between Coliseum BART station and Oakland International Airport (\$459 million) • Implement transit access improvements to BART in the Tri-Valley (\$168 million) • Extend BART/East Contra Costa Rail (eBART) eastward from the Pittsburg/Bay Point BART station into eastern Contra Costa County (\$525 million) • Extend BART from Fremont to Warm Springs (\$890 million) • Electrify Caltrain from Tamien to San Francisco (\$626 million) • Transbay Terminal Phase 1: construct the new Transbay Transit Center Building and rail foundation (\$1.2 billion) • Implement Capitol Corridor intercity rail service (includes increased track capacity, rolling stock and frequency improvements (\$108 million) • Implement Sonoma Marin Area Rail Transit District (SMART) commuter rail project (\$1.1 billion)

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	<ul style="list-style-type: none"> • 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 million) • Extend BART from Fremont (Warm Springs) to San Jose/Santa Clara (\$7.6 billion) • Electrify Caltrain line from Tamien Station to Gilroy (\$140 million) • Expand Caltrain Express service (Phase 2): design and implement safety elements related to signal communication and positive train control; and implement system-wide level boarding program and terminal improvements (\$427 million) • Transbay Terminal Phase 2: extend Caltrain to the new Transbay Terminal (\$3 billion) • Capitol Corridor: Phase 2 enhancements (includes grade separations at High Street, Davis Street and Hesperian Street) (\$89 million) • Extend the Third Street Light-Rail line from north of King Street to Clay Street in Chinatown via a new Central Subway (\$1.6 billion) • Convert Bus Rapid Transit (BRT) to light-rail transit in the Santa Clara-Alum Rock corridor (Santa Clara-Alum Rock Phase 2) (\$327 million) • Implement commuter rail service on the Dumbarton Bridge (\$301 million) • High-Speed Rail: fund supporting infrastructure for ACE, BART, Caltrain, MUNI and VTA (\$408 million)
Cost	Phase 1: \$ 3.8 billion Phase 2: \$ 29.3 billion
Travel Market Affected	This measure would affect all intraregional travel, including commute travel; shopping, personal business, social and recreational travel; passenger and commute trips to airports; and school trips. In addition, it would affect inter-regional travel.
Co-Benefits	<ul style="list-style-type: none"> • Improved connectivity between transit services and destinations • Travel time savings from providing new rail services that provide faster and/or more direct service between trip origins and destinations • Transportation cost savings by providing new rail transit options that may allow some households to own fewer or no cars • Community enhancements through creation of more and higher quality transit options and services
TCM Monitoring	<ul style="list-style-type: none"> • Track implementation status of rail projects
Implementing Agencies	Transit Operators, CHSRA, and MTC
Impediments	<ul style="list-style-type: none"> • Due to the current economic recession, cuts in State transit funding, and reductions in sales tax revenue for transit, Bay Area transit operators are facing challenges to maintain and sustain their existing systems and, in light of financial constraints, are cutting their transit budgets, cutting service, increasing fares, and/or delaying or deferring capital maintenance and service expansions. Thus, maintaining the existing fleet, sustaining existing services, restoring service that has been cut, and expanding service will require new funding improved productivity and lower costs. New revenues may be available in the future from higher gas taxes, bridge tolls, and voter approved sales tax revenues in individual counties.

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TCM A-2: Local and Regional Rail Service Improvements	
	<ul style="list-style-type: none">• Environmental clearance, right-of-way availability and costs, funding for the capital, operating and maintenance costs and level of public support are major impediments to sustain, improve, upgrade, and expand rail services.
Sources	<ul style="list-style-type: none">• MTC's Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/

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TCM A-3: Ferry Service Improvements	
Purpose	<ul style="list-style-type: none"> Maintain ferry boats and other ferry capital assets Sustain existing services and upgrade, expand or provide new Transbay ferry services
Description	<ol style="list-style-type: none"> Fund the timely replacement of ferry capital assets in local transit operator fleets as funding becomes available Implement ferry element of MTC’s Resolution 3434 Transit Expansion Program as funding becomes available Implement Water Emergency Transportation Authority’s Ferry Plan as funding becomes available
Background	<ul style="list-style-type: none"> In its Transportation 2035 Plan, MTC estimates that transit operating and capital replacement costs for Bay Area transit providers are projected to total \$138 million over the next 25 years. This includes \$98 billion in operating costs plus \$40 billion for capital replacement. Revenues available to address these needs total \$113 billion, leaving a remaining shortfall of \$25 billion (\$8 billion for operations and \$17 billion for capital replacement). Ferry boat and other ferry capital needs total approximately \$755 million; the Transportation 2035 Plan includes \$313 million in committed funds and \$120 million in discretionary funds towards these needs, leaving a remaining shortfall of \$322 million. Ferry service in the Bay area is provided by the Golden Gate Bridge, Highway, and Transportation District (GGBHTD) and the Water Emergency Transportation Authority (WETA). GGBHTD provides ferry service from Larkspur and Sausalito to San Francisco. WETA was created by Senate Bill 976, resulting in the consolidation of Alameda, Oakland, and Vallejo ferry services under one authority. WETA will issue a final transition plan for consolidation of services by July 1, 2009. This plan also includes expansion projects envisioned over the next 5 years including new ferry routes from South San Francisco, Berkeley, Treasure Island, and Alameda Point, as well as pre-construction planning for longer term expansion of ferry service to Hercules, Redwood City, Richmond, Martinez, and Antioch. All ferry vessels purchased after January 1, 2009 must meet the emission limits set forth in Section 93118.5(e)(5), Title 17, California Code of Regulations, as well as comply with the mitigation measures adopted by the Water Transit Agency as part of the Bay Area Ferry Service plan submitted to the California State Legislature in December 2002. During weekday peak hours in 2006, ferry transit provided almost 120,000 seat miles per hour in the Bay Area¹. Adopted as part of the 2001 Regional Transportation Plan, MTC’s Resolution 3434 Regional Transit Expansion Program is an \$18 billion, long-term, and multifaceted funding strategy for directing local, regional, state and federal dollars to nearly two dozen high-priority bus, rail and ferry expansions. Resolution 3434 includes new or expanded ferry service to: <ul style="list-style-type: none"> Berkeley, Alameda/Oakland/Harbor Bay, Hercules, Richmond, and South San Francisco.
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> Fund the timely replacement of ferry boats and other ferry capital assets in local transit operator fleets (\$52 million) Sustain existing services where feasible with available funding (\$100 million)

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TCM A-3: Ferry Service Improvements	
	<p>Phase 2 (2020)</p> <ul style="list-style-type: none"> • Fund the timely replacement of ferry boats and other ferry capital assets in local transit operator fleets as funding becomes available (\$139 million) • Sustain ferry services identified in Phase 1 where feasible with available funding (\$ 267 million) • Implement ferry service from Richmond to San Francisco (\$63 million) • Implement ferry service from Hercules to San Francisco (\$59 million) • Improve ferry facilities/equipment including the Downtown Ferry Terminal and procuring additional spare ferry vessels (\$193 million) • Provide ferry service between Alameda/Oakland and San Francisco and between Harbor Bay and San Francisco (\$22 million) • Implement ferry service between Berkeley/Albany and San Francisco (\$57 million) • Implement ferry service between South San Francisco and Alameda/Oakland (\$51 million) • Construct new Vallejo Baylink Ferry Terminal (\$86 million) • Provide capital improvements to support ferry service between Treasure Island and San Francisco (\$57 million) • Construct ferry terminal at Redwood City (\$15 million) • Pursue additional funding sources for design, engineering and construction of new ferry services in Martinez, Antioch and Redwood City (\$ TBD)
Cost	<p>Phase 1: \$ 150 million Phase 2: \$ 1 billion</p>
Travel Market Affected	<p>This measure would affect all intraregional travel, including commute travel; shopping, personal business, social and recreational travel (including tourism); and school trips. In particular, ferry service will affect peak period commute travel, when congestion on bridges is greatest.</p>

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TCM A-3: Ferry Service Improvements	
Co-Benefits	<ul style="list-style-type: none"> • Improved connectivity between transit services and destinations • Travel time savings from providing new ferry services that provide faster and/or more direct service between trip origins and destinations • Transportation cost savings by providing new ferry transit options that may allow some households to own fewer or no cars • Community enhancements through creation of more and higher quality transit options and services
TCM Monitoring	Track implementation status of ferry projects
Implementing Agencies	WETA, GGBHTD, and MTC
Impediments	<ul style="list-style-type: none"> • Due to the current economic recession, cuts in State transit funding, and reductions in sales tax revenue for transit, Bay Area transit operators are facing challenges to maintain and sustain their existing systems and, in light of financial constraints, are cutting their transit budgets, cutting service, increasing fares, and/or delaying or deferring capital maintenance and service expansions. Thus, maintaining the existing fleet, sustaining existing services, restoring service that has been cut, and expanding service will require new funding improved productivity and lower costs. New revenues may be available in the future from higher gas taxes, bridge tolls, and voter approved sales tax revenues in individual counties. • Funding for capital, operating and maintenance costs is the prime impediment to improve, upgrade and provide new ferry services.
Sources	<ul style="list-style-type: none"> • MTC's Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/

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TCM B-1: Freeway and Arterial Operations Strategies	
Purpose	<ul style="list-style-type: none"> • Improve the performance and efficiency of freeway and arterial systems through operational strategies
Description	<ol style="list-style-type: none"> 1. Implement the Freeway Performance Initiative (includes installing Traffic Operations System (TOS) infrastructure, ramp metering, and TOS Replacement Program) 2. Implement Arterial Management Program (includes arterial signal timing program and technical traffic engineering assistance) 3. Implement the Bay Area Freeway Service Patrol (FSP)
Background	<ul style="list-style-type: none"> • Caltrans manages freeway operations through a comprehensive system for surveillance (traffic detectors, CCTV cameras), communication with motorists (traffic advisory signs) and system control (ramp meters, incident management). Through its Transportation Management Center (TMC), Caltrans is able to collect and process traffic information; to detect incidents as reported by freeway cameras, loop detectors in the freeway pavement, motorist calls and other sources; and to respond to incidents. • The Freeway Performance Initiative (FPI) aims to maximize the efficiency and improve the management and reliability of the existing freeway infrastructure, while limiting traditional expansion of the system to only the most essential locations. FPI addresses both recurrent daily traffic that comes from 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. In performance assessments of infrastructure packages evaluated during the development of Transportation 2035 Plan, MTC found that FPI is the most cost-effective means to deal with traffic congestion in the region. • In its Transportation 2035 Plan, MTC set-aside \$1.6 billion over the next 25 years to implement FPI. FPI includes (a) <u>Traffic Operations Systems (TOS)</u>: full deployment of monitoring and surveillance systems and implementation of ramp metering on the region’s entire freeway network to improve efficiency and maximize use of the freeway system’s available capacity; (b) <u>TOS replacement</u>: consistent maintenance and periodic replacement of infrastructure to ensure a fully functioning system; (c) <u>Arterial coordination and management</u>: coordination with and optimization of major arterials to maximize efficiency of the freeway system; and (d) <u>Performance monitoring</u>: monitoring to measure progress in freeway performance. • Arterial management includes traffic signals (which encompasses consideration of transit priority measures where applicable), signing and pavement marking, access management, parking management, and traffic calming. Over 3,500 of the Bay Area’s 7,000+ traffic signals are part of coordinated systems. An additional 1,700 signals are close enough to be included in coordinated systems, but most local agencies cannot afford to interconnect their signals. Based on feedback from local traffic engineers, their greatest unmet needs involve resources and expertise for traffic signal timing and funding for the operation and maintenance of Smart Corridors. Most cities have not been able to meet these needs since the dot.com bust in 2001. • MTC has been investing in arterial management for over 20 years through the Traffic Engineering Technical Assistance Program (TETAP) and the Regional Signal Timing Program (RSTP). Between 2004 and 2009, over 3,500 traffic signals have been retimed, yielding 10 percent savings in travel time and fuel consumption, 7 percent reductions in mobile source emissions, and a benefit:cost ratio of 34:1. Similarly, since its inception in 1993, TETAP has funded over 250 operations

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TCM B-1: Freeway and Arterial Operations Strategies	
	<p>and safety studies.</p> <ul style="list-style-type: none"> • The Bay Area FSP is a joint project of the Metropolitan Transportation Commission Service Authority for Freeways and Expressways (MTC SAFE), the California Highway Patrol (CHP) and Caltrans. The service is provided by private tow truck companies, and during the hours of operation, the vehicles and drivers are exclusively dedicated to patrolling their freeway beat. Currently, a fleet of 83 trucks patrols some 550 miles of the Bay Area's freeways. Patrol routes are selected based on several factors, including a high rate of traffic and congestion, frequent accidents or stalls, and lack of shoulder space for disabled vehicles. The program is intended to augment the MTC SAFE network of motorist-aid call boxes in the nine Bay Area counties.
Implementation Actions	<p>Phase 1 (2012) Implement the following actions (\$150 million)</p> <ul style="list-style-type: none"> • Through FPI, fill gaps in TOS infrastructure. • Through FPI, install ramp meters at entrance ramps. • Through the RSTP, coordinate traffic signals and continue to update timing plans. • Maintain the current level of FSP service which involves patrolling 540 miles of the Bay Area freeways. Note that the FSP service levels are subject to change though the freeway miles covered are unlikely to be significantly affected. <p>Phase 2 (2020) Implement the following actions (\$390 million)</p> <ul style="list-style-type: none"> • Through FPI, conduct routine maintenance and replacement, at the end of its useful life, of TOS infrastructure. • Through FPI, install additional TOS infrastructure. • Through FPI, install additional ramp meters at entrance ramps and monitor and adjust meter timing as appropriate. • Through the RSTP, coordinate additional traffic signals and continue to update timing plans. • Expand FSP service on I-280 from SR 92 to SR 85 in San Mateo and Santa Clara counties.
Cost	<p>Phase 1: \$ 150 million Phase 2: \$ 390 million</p>
Travel Market Affected	<p>This measure would affect all intraregional travel, including commute travel; shopping, personal business, social and recreational travel; passenger and commute trips to airports; and school trips.</p>

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TCM B-1: Freeway and Arterial Operations Strategies	
Co-Benefits	<ul style="list-style-type: none"> • Health and economic savings for both businesses and travelers from reduced congestion • Improved travel times, reduced fuel consumption and fewer collisions from retiming signals • Reductions in fuel usage, improved safety for stranded motorists, reductions in secondary accidents and improved motorist travel times from FSP services
TCM Monitoring	<ul style="list-style-type: none"> • Track mobility (how well the corridor moves people and freight), reliability (the predictability of travel times), and safety as part of the comprehensive FPI corridor studies • Track savings in travel time, fuel consumption, and air emissions on a project-by-project and on an annual basis for Arterial Management Program • Collect detailed assist data and motorist experience information for Freeway Service Patrol services. The assist data is used by Caltrans to calculate benefit-cost ratios, fuel-savings, and pollutant reductions.
Implementing Agencies	MTC, SAFE, Caltrans, California Highway Patrol, Congestion Management Agencies, Cities and Counties
Impediments	<ul style="list-style-type: none"> • The installation/replacement of TOS infrastructure and retiming traffic signals are often constrained by available funding at both the state and local levels. • Local jurisdiction are reluctant to approve ramp metering due to potential spill over onto local streets and disruption on their arterial operations. • Where arterial signal coordination requires cooperation of multiple jurisdictions, the negotiations can take time to resolve both technical and policy issues. • Expansion of FSP is constrained by the availability of funding.
Sources	<ul style="list-style-type: none"> • MTC's Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/ • MTC's Arterial Management Program: http://www.mtc.ca.gov/services/arterial_operations/ • SAFE's Freeway Service Patrol Program: http://www.mtc.ca.gov/services/fsp/

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TCM B-2: Transit Efficiency and Use Strategies	
Purpose	<ul style="list-style-type: none"> • Increase transit efficiency and use through financial incentives, improved real time transit service information, coordinated fare payment and collection, and improved transit connectivity
Description	<ol style="list-style-type: none"> 1. Operate and maintain 511 Transit 2. Deploy, operate and maintain TransLink® fare payment system 3. Facilitate pre-tax and other transit benefits through TransLink® 4. Implement, operate and maintain Transit Hub Signage Program
Background	<ul style="list-style-type: none"> • Public transit services in the Bay Area are operated by 26 agencies, each with its own budget, policies, procedures, service plan and operating practices tailored to its immediate service area. These agencies may not effectively coordinate with neighboring service areas for purposes of facilitating seamless regional travel and customer service. • Since 2002, the Bay Area’s telephone and Web-based 511 traveler information service provides up-to-the-minute, on-demand transportation-related information that supports transit riders throughout the nine-county region. On the phone, 511 provides direct transfers to over two dozen transit agencies and various paratransit providers as well as real-time transit departure predictions for SF Muni and BART. It will expand to cover other agencies that develop real-time capabilities. On the web, 511 offers a transit trip planner which allows users to create itineraries for their trips, including trips requiring transfers between agencies. The project also has a call center interface used by transit agencies to provide trip-planning information to customers over the phone. The 511 web service also provides schedules, route maps, information on fares and passes, and service announcements. In the near future, a personalized MY 511 service on the phone and the web will allow users to save trips for real-time departure predictions. The Bay Area system has received nearly 25 million calls, and averages 100,000 transit-related calls and over 1.3 million transit itinerary requests each month. In light of an expected 50 percent decrease in project funding starting in FY 2014 due to recent State Transit Assistance budget reductions, the 511 Transit project needs to reduce ongoing operational costs. It is likely that service to the public will be reduced or scaled back significantly. • TransLink® offers transit riders a convenient and secure way to pay fares on multiple agencies. 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), which is accepted by all participating agencies, and transit passes. TransLink® has been available on all AC Transit and Dumbarton Express buses and on all Golden Gate Transit and Ferry routes since November 2006. TransLink® is currently operating on all San Francisco Muni routes, but Muni is encouraging only limited use of the system by the public in order to closely monitor the system’s performance and customer response. Furthermore, TransLink® is fully installed on the Caltrain system, and Caltrain will begin encouraging the public to use the system once an employee testing phase is complete. TransLink® should be available for use by BART customers in summer 2009 and for use by Santa Clara VTA and SamTrans customers in 2010. TransLink® will also be available for use at a limited number of San Francisco Municipal Transportation Agency (SFMTA) parking garages on a pilot basis in 2010. When fully implemented, TransLink® will serve more than 600,000 transit riders every day. • A number of programs provide services to Bay Area employers to facilitate use of pre-tax and other transit benefits (see TCM C-1). Transit riders can apply their transit benefits directly to their TransLink® card. The TransLink® program is also

Attachment A: Draft Transportation Control Measure Narratives

TCM B-2: Transit Efficiency and Use Strategies	
	<p>working with AC Transit and a number of housing developers on a pilot basis to offer transit benefits to residents of new transit-oriented housing developments.</p> <ul style="list-style-type: none"> MTC prepared the Transit Connectivity Plan to improve passenger transfers between connecting transit systems. Aside from reinforcing the importance of 511 Transit and TransLink® to improve transit system-wide, several key issues emerged, including (a) lack of wayfinding signage to guide transit riders between systems and to their final destinations; (b) lack of information about connecting services such as schedules, fares and routes; (c) lack of real-time transit departure information; (d) lack of schedule coordination; (e) lack of “last mile” services for riders to get to/from mainline transit service such as shuttles, pedestrian access, bicycle parking or taxis; and (f) few hub amenities such as weather protection, restrooms and security measures. MTC, in partnership with transit operators, will implement the Hub Signage Program to address wayfinding signage, transit information and real-time transit information recommendations at 21 transit hubs and 3 airports. Transit operators will lead implementation of other Plan recommendations over time (no cost assumption in TCM).
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> Operate and maintain 511 Transit (\$12 million) Deploy, operate and maintain TransLink® on Bay Area transit agencies (\$59 million) Provide pre-tax and other transit benefits through TransLink® (\$5 million) Implement, operate and maintain Transit Hub Signage Program (\$3 million) <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> Operate and maintain 511 Transit (\$25 million) Operate and maintain TransLink® on Bay Area transit agencies (\$117 million) Provide pre-tax and other transit benefits through TransLink® (assume cost is absorbed in TransLink® budget) Operate and maintain Transit Hub Signage Program (\$10 million)
Cost	<p>Phase 1: \$80 million Phase 2: \$150 million</p>
Travel Market Affected	<p>This measure would make transit more attractive, improve convenience for transit riders, and affect intraregional travel on transit, including commute travel; shopping, personal business, social and recreational travel; passenger and commute trips to airports; and school trips.</p>

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TCM B-2: Transit Efficiency and Use Strategies	
Co-Benefits	<ul style="list-style-type: none"> • Improved transit customer experience • Travel time savings
TCM Monitoring	<ul style="list-style-type: none"> • Monitor customer use of 511 web and phone features to obtain transit schedule, route and fare information as well as real-time transit departure times. Monitor use of 511 Transit data by third party Information Service Providers • Monitor customer use of TransLink® card and TransLink® market penetration based on transit agency transition of prepared fare media to TransLink®. • Track number of people receiving transit benefits through TransLink® • Track completion of sign installation (wayfinding, transit information displays, real-time transit) at each of 21 hubs and 3 airports
Implementing Agencies	MTC, Transit Operators
Impediments	<ul style="list-style-type: none"> • Technological issues, funding availability, institutional support, and market penetration are the prime factors that may impede full implementation of 511, TransLink® and other transit connectivity improvements.
Sources	<ul style="list-style-type: none"> • MTC's Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/

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TCM B-3: Bay Area Express Lane Network	
Purpose	<ul style="list-style-type: none"> • Price travel demand on Bay Area highways.
Description	<ol style="list-style-type: none"> 1. Seek authorizing legislation to implement the Bay Area Express Lane Network
Background	<ul style="list-style-type: none"> • Bay Area highway congestion is the second-worst in the nation; regional travel is slow and unreliable. The carpool lane system, which has been under construction for over 30 years, is fragmented by gaps. If we rely on traditional funding sources, these gaps will not be fully closed for many decades due to the lack of funds, making carpools and transit less effective. • Currently, the Bay Area is authorized to develop and implement only a handful of express lane projects in Alameda and Santa Clara counties. The first such projects, on Interstates 580 and 680, are now under construction and are scheduled to open in 2010/2011. • MTC is seeking legislation via AB 744 (Torrico) to authorize the Bay Area Toll Authority (BATA) to finance, develop and operate a complete, seamless, regionally managed Express Lane Network. Key features will include: <ul style="list-style-type: none"> ○ a management and operations structure involving the BATA, the county Congestion Management Agencies, Caltrans, and the California Highway Patrol; ○ conversion of 500 miles of existing or fully funded HOV lanes to express lanes; ○ construction of 300 miles of new express lanes (180 miles of gap closure, 120 miles of outward expansion); ○ qualifying carpools and public transit use network free of charge; non carpoolers pay toll (collected electronically); ○ free-flowing traffic for carpools, buses and toll payers maintained by adjusting tolls as congestion rises and falls; and ○ toll revenue pays for construction, operation, maintenance and enforcement of the Express Lane Network ○ priority for expenditure of net toll revenues will be given to projects and programs that reduce vehicular emissions and provide cost-effective public transit options in the corridor. • MTC expects that the express lanes will be operated on a full-time (24/7) basis when tolling is introduced in a corridor, subject to further evaluation.
Implementation Actions	<p>Phase 1 (2012) Implement the following express lane projects¹ (\$2.7 billion):</p> <ul style="list-style-type: none"> • Existing Express Lane projects under development on I-680 (Sunol), I-580, SR 85 and US 101, including the SR 237/I-880 direct connector; • I-680 corridor from the I-680/SR 24 interchange south; • I-880 corridor in Alameda and Santa Clara counties; • I-580 corridor in Alameda County; • I-80 in Alameda, Contra Costa, and part of Solano County; • Portions of US 101 in Marin County; • US 101 in San Mateo County;

¹ Assumes project implementation during Phase 1/Phase 2 time horizons. The actual implementation year is subject to change based on the Bay Area Express Lane implementation plan.

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TCM B-3: Bay Area Express Lane Network	
	<ul style="list-style-type: none"> • SR 87 in Santa Clara County; • I-280 in Santa Clara County; and • Bridge approaches (SR 84, SR 92, and on I-680 and I-80). <p>Phase 2 (2020) Implement the following express lane projects (\$1.0 billion):</p> <ul style="list-style-type: none"> • SR 4 in Contra Costa County; • US 101 North (Novato Narrows) in Marin and Sonoma counties; and • I-80 far eastern portion of Solano County.
Cost	Phase 1: \$2.7 billion Phase 2: \$1.0 billion
Travel Market Affected	This measure would affect all intraregional travel, including commute travel; shopping, personal business, social and recreational travel; passenger and commute trips to airports; and school trips.
Co-Benefits	<ul style="list-style-type: none"> • Travel time savings • Generation of net toll revenue for corridor improvements
TCM Monitoring	<ul style="list-style-type: none"> • Track miles of express lanes implemented • Track average vehicle speeds in both express lanes and general travel lanes (changes in congestion) • Track changes in Vehicle Hours of Delay
Implementing Agencies	BATA, Caltrans, California Highway Patrol, Congestion Management Agencies
Impediments	<ul style="list-style-type: none"> • Legislation is required to give BATA the authority to finance, develop and operate the Bay Area Express Lane Network. AB 744 (Torrico) is currently being considered by the State Legislature. • The network includes a variety of design challenges due to both environmental, geographic, and development constraints. • There is mixed public opinion regarding value pricing, with concerns about the impact on existing carpoolers, potential environmental impacts, the use of network net revenues, and charging for the use of the highway. • The program calls for rapid implementation of a large network of managed lanes, which will require significant resources and institutional support from a number of agencies.
Sources	<ul style="list-style-type: none"> • MTC's Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/

Attachment A: Draft Transportation Control Measure Narratives

TCM B-4: Goods Movement Improvements and Emission Reduction Strategies	
Purpose	<ul style="list-style-type: none"> • Improve goods movement activities along key rail and truck travel corridor • Reduce pollutant emissions and health risks from goods movement activities at or near Bay Area ports and major trade corridors
Description	<ol style="list-style-type: none"> 1. Implement the Bay Area’s Trade Corridors Improvement Fund (TCIF) projects 2. Implement BAAQMD’s Goods Movement Emission Reduction Program to replace or retrofit up to 800 port and general goods movement trucks operating in the region 3. Implement ARB and BAAQMD’s Carl Moyer Program
Background	<ul style="list-style-type: none"> • Goods movement is a critical component of the Bay Area’s economic and transportation system. Whether it is delivering construction materials or consumer goods to the growing population, or exporting electronics and food throughout the world, a robust goods movement system is essential for both business and residents to function and thrive in the Bay Area. • Exposure to diesel pollution from goods movement operations greatly impacts the health of community residents near ports, rail yards, distribution centers, and roads with high truck volumes. Analysis by the BAAQMD has found that emissions of diesel particulate matter account for 80 percent of the risk from toxic air contaminants in the Bay Area. • Nearly 40 percent of the region’s economic output is in manufacturing, freight transportation, and the warehouse and distribution businesses. The Port of Oakland is one of the nation’s busiest container ports, and although cargo volumes are currently down due to the economic recession, projections show cargo volumes at the Port and goods movement volumes throughout the region and state will grow significantly over the next 20 years. The Port of Oakland plays a particularly important role in supporting the state’s agricultural sector, providing the primary means of transporting produce from the Central Valley to the Pacific Rim. Goods movement businesses create over 10 percent of regional employment. • More than 80 percent of the goods movement in the Bay Area involves trucking in several major corridors: Interstates 80, 580, and 880 and U.S. Highway 101. • 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 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 \$585 million of this total will fund seven key Bay Area goods movement projects. • Proposition 1B also included \$1 billion for air quality programs focused on goods movement activities in California. The BAAQMD is responsible for developing various programs for the bond, including a diesel truck replacement program. • In the Transportation 2035 Plan, MTC set-aside \$45 million over the next five years towards the BAAQMD’s Goods Movement Emission Reduction Program, which aims to reduce particulate matter emissions and health risks by replacing and/or retrofitting up to 800 port and general regional goods movement trucks currently operating along the Bay Area’s priority trade corridors. • Since 2003, BAAQMD has spent approximately \$55.6 million on projects through the Carl Moyer Program. These funds

Attachment A: Draft Transportation Control Measure Narratives

TCM B-4: Goods Movement Improvements and Emission Reduction Strategies	
	<p>purchased cleaner-than-required on-road, off-road, marine, rail, and agricultural equipment and reduced approximately 1,170 tons per year (tpy) of NOx, 78 tpy of ROG, and 69 tpy of particulate matter. The majority of this equipment is dedicated to goods movement functions, and approximately \$40 million was spent in impacted communities.</p> <ul style="list-style-type: none"> • The California Air Resources Board (CARB) has adopted rules that require owners of diesel equipment, including good moving equipment such as on-road trucks and harbor craft, to limit emissions from their fleets. The federal government has also taken action to limit emissions from locomotive engines. Although these regulations will require that equipment meets stringent standards, anticipated growth in goods movement over the next 20 years may offset much of the benefits that these regulations will achieve. Thus, incentive programs offered through BAAQMD are designed to provide emission reductions that go beyond reductions required by CARB. For example, regulations require upgrades to equipment in future years; BAAQMD incentive programs offer funds for engine owners to upgrade equipment in advance of these regulations, thereby funding emission reductions that are not yet mandated. Incentive programs can also offer funds for reduction of pollutants that are not required, for example, NOx and ROG reductions, when only PM reductions are required. In sum, although CARB (and federal) requirements will result in substantial emission reductions from the goods movement sector, incentive funding can be used to speed up these reductions or generate additional emission reductions that would otherwise not occur.
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> • Implement ARB and BAAQMD’s diesel emission reduction incentive programs, including the Carl Moyer Program and Goods Movement program (approximately \$86 million) • Implement BAAQMD’s Advanced Technology Program to fund hybrid heavy-duty trucks and demonstration projects (\$1.5 million) <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> • Implement the following seven Proposition 1B TCIF Projects (\$585 million): <ul style="list-style-type: none"> ▪ 7th Street Grade Separation; ▪ I-80 Eastbound Cordelia Truck Scales Relocation; ▪ Martinez Subdivision Rail Corridor Improvements; ▪ San Francisco Bay to Port of Stockton Channel Dredging; ▪ I-580 Eastbound Truck Climbing Lane; ▪ I-880 Improvements at 23rd and 29th Avenues; and ▪ Outer Harbor Intermodal Terminals. • Implement BAAQMD’s Goods Movement Emission Reduction Program to replace or retrofit up to 800 port and general goods movement trucks operating in the region (\$45 million) • Continue to implement ARB and BAAQMD’s Carl Moyer Program (\$TBD)
Cost	<p>Phase 1: \$87.5 million Phase 2: \$630 million</p>

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TCM B-4: Goods Movement Improvements and Emission Reduction Strategies	
Travel Market Affected	This measure would affect all goods movement activity within and outside the region.
Co-Benefits	<ul style="list-style-type: none"> • Energy/fuel cost savings • Economic benefits from faster, more efficient goods movement
TCM Monitoring	<ul style="list-style-type: none"> • Completion of major project milestones for TCIF projects • Changes in Vehicle Hours of Delay (VHD) on TCIF corridors • Number of goods movement trucks retrofitted or replaced through the Goods Movement Emission Reduction program, and amount of emissions reduced through these retrofits/replacements • Number of grants and amount of money awarded through Carl Moyer Program, emissions reduced through grants
Implementing Agencies	ARB, MTC, BAAQMD, Port of Oakland, Caltrans, CMAA
Impediments	<ul style="list-style-type: none"> • Though state and federal agencies have made some headway, the goods movement industry is difficult to regulate because it is dominated by the private sector, which owns and operates much of the goods movement infrastructure. • High costs to reduce emissions from aging goods movement equipment and infrastructure (such as large diesel trucks that tend to stay on the road well beyond their useful life, replace at a very slow rate, and operate on the smallest margin of profits) may be too cost-prohibitive for the private sector. • Funding availability may constrain the implementation of goods movement emission reduction programs. • Technological issues may be a limiting factor in retrofitting and replacing on- and off-road mobile sources due to technical capabilities, availability and rate of deployment. • Incentive funding can only be made available for projects that reduce emissions that are surplus to the regulation. As CARB regulations that require owners of diesel engines to replace or retrofit these engines are phased in over the next several years, the number of engines that are eligible for incentive funding will greatly decrease. Therefore, BAAQMD anticipates it will achieve fewer emission reductions through existing incentive programs. However, since diesel engine owners will be required to reduce emissions by CARB regulations, the Bay Area will still benefit from cleaner diesel operations. In addition, the uncertain state of the economy may limit the number of diesel equipment owners willing to enter into contracts to receive incentive funding. This is because equipment owners who accept incentive funding commit to monitoring and certain use requirements. In an uncertain economic environment, owners may be reluctant to commit to contracts that require specific types and amounts of use.
Sources	<ul style="list-style-type: none"> • MTC's Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/ • MTC's Goods Movement Initiatives 2009 Update: http://www.mtc.ca.gov/planning/2035_plan/Supplementary/T2035_Goods_movement_update.pdf • ARB sources: <ul style="list-style-type: none"> ○ http://www.arb.ca.gov/bonds/gmbond/gmbond.htm ○ http://www.arb.ca.gov/msprog/moyer/moyer.htm ○ http://www.arb.ca.gov/gmp/docs/gmap-1-11-07.pdf

TCM B-4: Goods Movement Improvements and Emission Reduction Strategies

- BAAQMD sources:
 - http://www.baaqmd.gov/pln/grants_and_incentives/gm/index.htm
 - http://www.baaqmd.gov/pln/grants_and_incentives/carl_moyer/index.htm
 - http://www.baaqmd.gov/CARE/documents/care_p1_findings_recommendations_v2.pdf

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TCM C-1: Voluntary Employer-Based Trip Reduction Programs	
Purpose	<ul style="list-style-type: none"> • Provide core support for voluntary employer-sponsored trip-reduction programs
Description	<ol style="list-style-type: none"> 1. Implement employer elements of the 511 Regional Rideshare Program 2. Conduct outreach to employers in each county to provide information and encourage implementation of trip-reduction programs 3. Implement employer elements of the BAAQMD’s Spare the Air Program 4. Work with local cities to adopt transit benefit ordinances (modeled after the City of San Francisco Commute Benefits Ordinance)
Background	<ul style="list-style-type: none"> • While commute trips make up only about one-quarter of person trips, they tend to be longer distance trips and they make up most peak hour trips when traffic congestion is worse. For these reasons, reducing vehicle trips to workplaces can have a significant impact on reducing congestion and improving air quality. • Employees may choose to drive to work for a variety of reasons: <ul style="list-style-type: none"> • Workplaces that are not near transit; • Barriers to ridesharing (see TCM C-3); • Lack of pedestrian or bicycle connectivity to transit; • Lack of “first mile” or “last mile” connectivity at origin or destination; • Lack of bicycling amenities such as bicycle racks/lockers or showers at transit stations or workplaces; and • Lack of information regarding other travel options. • Since 1996, Senate Bill 437 has prohibited mandatory employer trip reduction programs. However, many employers participate in these types of program on a voluntary basis. • 511 Rideshare is one component of 511, MTC’s regional transportation information program, which provides a suite of services to facilitate carpooling, vanpooling, taking transit and bicycling. These programs are designed to remove some barriers identified above. 511 Rideshare and congestion management agencies (CMAs) conduct outreach to employers, providing information and encouragement to implement programs that will influence employees to use alternate modes of transportation. 511 Rideshare services and tools include: consultations, marketing and outreach, work site events, employee surveys, density maps, relocation assistance, online ridematching, vanpool formation and support, commute incentives, and employer referrals. (For additional elements of 511 Rideshare, see TCM C-3). • MTC, through 511 Rideshare, provides funds to five of the 9 county CMAs to conduct outreach to employers in their county and also directly serves the remaining four counties via contracts. Employer outreach focuses on describing and marketing each of the rideshare services and tools provided by 511 (described above), encouraging implementation of trip reduction programs, as well as informing employers of county-level incentives (see TCM-3). • BAAQMD administers the Spare the Air program, encouraging individuals to take actions to improve air quality on days when air quality is forecasted to be unhealthy. On summer days with unhealthy levels of ground-level ozone forecast, individuals are encouraged to take transit, carpool, and/or curb driving. As a part of this program, employers participating in the Spare the Air Employer Network designate coordinators to inform their workforce of impending Spare the Air days, educate employees about the ways individuals can improve air quality, and motivate them to take action. BAAQMD provides educational information, incentives and support to participating employers. • The BAAQMD’s Transportation Fund for Clean Air (TFCA) program is funded by a surcharge on motor vehicle

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TCM C-1: Voluntary Employer-Based Trip Reduction Programs	
	<p>registration fees paid within BAAQMD’s jurisdiction. The surcharge revenues are to be used to implement specific transportation control measures that are developed and adopted in BAAQMD’s Clean Air Plans and are pursuant to the requirements of the 1988 California Clean Air Act. Programs funded by TFCA include regional and local rideshare programs, vanpool/buspool programs, bicycle lockers, rack and parking stations, bicycle paths and lanes, and pedestrian improvements.</p> <ul style="list-style-type: none"> • The Bay Area Clean Air Partnership (BayCAP) began a shuttles project in 2001. The major employer and business organizations involved in BayCAP saw untapped potential for shuttle expansions in the Bay Area. Private sector entities saw the project as an opportunity for a public/ private partnership to improve air quality. The shuttles project was funded by BAAQMD with the goals of increasing the Bay Area shuttle ridership, improving partnerships among public agencies, providing technical support and networking information, and improving policy-maker understanding of Bay Area shuttle programs. As Bay Area population grows and public transportation agencies expand service, we will need new shuttles to serve new stations and handle increased overall passenger loads.
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> • Continue to implement employer elements of MTC’s 511 Rideshare (\$2 million) • Continue to implement employer element of CMA’s county programs (\$4 million) • Continue to implement employer elements of the BAAQMD’s Spare the Air program, evaluate program’s effectiveness, and implement new ideas to expand the scope and improve the effectiveness of the program at workplaces (\$TBD) • Continue to provide BAAQMD’s TFCA funding for shuttle/feeder buses (\$TBD) • Implement program similar to the BayCAP shuttle program with an expanded scope (\$TBD) <ul style="list-style-type: none"> ○ Expand current shuttle operations ○ Coordinate shuttle operations between the private and public sector ○ Study and implement a consistent regional shuttle program ○ Promote the benefits of shuttles to employers, employees, transit operators, and regional/local agencies ○ Study alternative access modes to regional transportation stations/hubs, specifically frequent shuttle/feeder buses, from under used parking lots ○ Study and promote the concept of rapid shuttles using park and ride parking capacity to meet the same need as transit hub parking structures ○ Work with large housing developments to provide guidance and implement rapid shuttles as an alternative to driving <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> • Sustain employer elements of MTC’s 511 Rideshare and CMA’s county programs. (\$17 million) • Sustain Phase 1 actions
Cost	<p>Phase 1: \$6 million Phase 2: \$17 million</p>
Travel Market	<p>This measure would primarily affect commute trips, which were 23% of total person trips and about 40% of vehicle miles</p>

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TCM C-1: Voluntary Employer-Based Trip Reduction Programs	
Affected	travelled for personal (non-commercial) travel in 2006 in the Bay Area.
Co-Benefits	<ul style="list-style-type: none"> • Reduced travel costs for employees • Reduced costs in provision of parking for employers
TCM Monitoring	<ul style="list-style-type: none"> • Track number of employers contacting MTC’s 511 Rideshare and CMA’s county programs for employer services offered • Track number of employees served by BayCAP and regional shuttle programs • Track number of grants and amount of money awarded through TFCA Program
Implementing Agencies	MTC, BAAQMD, Congestion Management Agencies, County Transportation Authorities, Cities, Counties, and Employers
Impediments	<ul style="list-style-type: none"> • BAAQMD’s lack of regulatory authority to mandate employer-based trip reduction programs limits the ability to expand employer participation. • Potential lack of funding would preclude MTC, CMAs, county transportation authorities, cities, etc. from delivering TCM as scoped. • The current economic downturn and cost of implementing trip reduction programs limits employer’s willingness to participate. However, new legislation may repeal SB 437 or provide new incentives for employer-based trip reduction programs. • The BayCAP Shuttles Project identified key barriers that must be addressed if the region is to expand its shuttle system and increase transit ridership, including: no consistent regional shuttle program, shuttles are not seen as an integral part of the regional rail network, lack of on-going regional funding (TFCA funding is only regional funding available for shuttles), most shuttles are at the work-end, very little experimentation with home-end shuttles, shuttles generally are not high priority and shuttles programs are not institutionalized at most transit agencies.
Sources	<ul style="list-style-type: none"> • MTC’s Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/

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TCM C-2: Safe Routes to Schools and Safe Routes to Transit Programs	
Purpose	<ul style="list-style-type: none"> Encourage walking and bicycling to schools and transit stations/stops
Description	<ol style="list-style-type: none"> Implement the Safe Routes to Schools Program Implement the Safe Routes to Transit Program Work with transportation agencies, local governments, schools, and communities to implement safe access for pedestrians and cyclists
Background	<ul style="list-style-type: none"> Safe Routes to School is a state, regional and local program that encourages children to walk or bicycle to school by removing barriers such as 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. In 2006, home-based grade school trips in the Bay Area accounted for nearly 1.3 million trips/day, or 6 percent of total personal trips. Safe Routes to School reduces vehicle trips to school and parents' vehicle trips to work, who may be able to switch to another mode if they do not need to drop their children off at school. The State of California's Safe Routes to School program was established in 1999 by Assembly Bill 1475, and in 2007, legislation was passed (Assembly Bill 57) to extend the program indefinitely. Project funding has been issued for 7 two-year funding cycles, the selection of Cycle 8 projects for FY 2008-09 and FY 2009-10 is underway, and the program will continue to issue calls for projects on a bi-annual basis. Examples of Bay Area projects funded in Cycle 7 include: <ul style="list-style-type: none"> New traffic signals with countdown pedestrian heads, crosswalks, radar speed feedback signs and education activities near Ocean View Elementary School in Alameda County; Construction of a segment of the Lions Creek Trail for bicyclists and pedestrians, outreach and education activities near Antonio Del Buono Elementary School in Santa Clara County; and Installation of in-pavement lighted crosswalk, curb ramps, safety lighting, signing and striping near Windsor High School in Sonoma County. SAFETEA established a federal Safe Routes to School program between 2005 and 2009. The federal program advises Safe Routes to School projects to include five components, "the Five Es" – engineering, education, enforcement, encouragement and evaluation. Two cycles of federal funding were issued. Examples of Bay Area projected funded include: <ul style="list-style-type: none"> Installation traffic calming features by extending curbs, narrowing an intersection, and installing a pedestrian crossing signal near Mill Valley Middle School in Marin County; and Funding to conduct walkability audits/workshops, focus groups, meetings with teacher and parent groups, assemblies, outreach, on-site technical assistance with local bicycle/pedestrian champions, and pedestrian educational presentations at schools in Western Contra Costa County. In 2004, voters passed Regional Measure 2, raising the toll on the seven State-owned toll bridges by \$1.00. This extra dollar funds various transportation projects within the region, including the Safe Routes to Transit program, that reduce congestion or make improvements to travel in the toll bridges, as identified in SB 916 (Chapter 715, Statutes of 2004). Safe Routes to Transit is a program that funds bicycle and pedestrian planning and capital projects that facilitate walking and bicycling to regional transit, thereby reducing vehicle trips to transit. While removing vehicle trips to transit may have only small impacts on reducing vehicle miles travelled, these reductions have more significant impacts in reducing vehicle engine starts, which are a significant source of total vehicle emissions. The Safe Routes to Transit program is funded by

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TCM C-2: Safe Routes to Schools and Safe Routes to Transit Programs	
	<p>MTC and administered by TransForm and the East Bay Bicycle Coalition. To date nearly \$8 million has been awarded to over 20 capital and planning projects. Example projects funded include:</p> <ul style="list-style-type: none"> ○ Planning for Balboa Park Ocean Avenue pedestrian/bicycle connections in San Francisco; ○ Capital improvements to provide safe pedestrian/bicycle routes to Ed Roberts Campus/Ashby Bart in Berkeley; and ○ Capital funds to provide electronic bicycle lockers at BART stations. <ul style="list-style-type: none"> ● MTC’s Transportation 2035 Plan launched a new program, the Transportation Climate Action Campaign, to reduce the region’s carbon footprint. The \$400 million campaign includes new funding for Safe Routes to School and Safe Routes to Transit. These funds will supplement the available federal, state, regional and local sources committed to these sources, which are currently oversubscribed, to meet the high demand for funding for these types of projects.
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> ● Implement the Safe Routes to Schools Program component of the Transportation Climate Action Campaign (\$10 million) ● Implement the Safe Routes to Transit Program component of the Transportation Climate Action Campaign (\$10 million) ● Award RM 2-funded Safe Routes to Transit Program funds for Cycle 3 (2009), Cycle 4 (2011) and Cycle 5 (2013) (\$23 million) <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> ● Pursue additional funding for Safe Routes to School and Safe Routes to Transit (\$20 million)
Cost	<p>Phase 1: \$43 million Phase 2: \$20 million</p>
Travel Market Affected	<p>This measure would affect school trips.</p>
Co-Benefits	<ul style="list-style-type: none"> ● Improved safety/reduced pedestrian-motor vehicle and bicycle-motor vehicle accidents ● Improved public health/reduced obesity ● Reduced travel costs
TCM Monitoring	<ul style="list-style-type: none"> ● Track the number of new Safe Routes to School programs and the change in number of bicycle and walk trips to school at schools with Safe Routes to School programs ● Track the number of new Safe Routes To Transit Projects
Implementing Agencies	<p>MTC, BAAQMD, Congestion Management Agencies, County Transportation Authorities, Cities and Counties</p>
Impediments	<ul style="list-style-type: none"> ● The Safe Routes to School and Safe Routes to Transit programs receive a high volume of grant applications and have only limited amount of funds to award to projects. While funding for these programs have been identified in the short-term, many of these sources will sunset in the future. However, the new federal transportation bill could include additional funding for Safe Routes to School and Transit. New funds may also be available from higher gas taxes, bridge tolls, and voter approved sales tax measures in individual counties.

Attachment A: Draft Transportation Control Measure Narratives

TCM C-2: Safe Routes to Schools and Safe Routes to Transit Programs

Sources

- MTC's Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/

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TCM C-3: Rideshare Services and Incentives	
Purpose	<ul style="list-style-type: none"> • Encourage ridesharing
Description	<ol style="list-style-type: none"> 1. Implement 511 Rideshare Program services (carpools and vanpools) 2. Market the 511 Rideshare services (including funding 511 rideshare incentives), operate rideshare information call center and website, and provide vanpool support services 3. Implement incentive programs sponsored by congestion management agencies, county transportation authorities, cities and counties, and transit agencies
Background	<ul style="list-style-type: none"> • While commute trips make up only about one-quarter of person trips, they tend to be longer distance trips and they make up most peak hour trips when traffic congestion is worse. For these reasons, reducing vehicle trips to workplaces can have a significant impact on reducing congestion and improving air quality. • Barriers to ridesharing include: <ul style="list-style-type: none"> ○ Difficulty for individuals in identifying others who both live and work proximate to them. ○ Difficulty in setting up the logistics of a vanpool (such as establishing driver(s), shared payment for gas and other costs, identifying parking places, etc.) ○ Needing to factor in travel time to pick-up other carpoolers ○ Needing flexibility to change travel schedule due to emergencies • 511 Rideshare is MTC’s regional rideshare program, providing a suite of services to facilitate carpooling and vanpooling online (511.org) and by telephone (511). These programs help remove some barriers to ridesharing identified above, provide additional incentives for ridesharing, and include: <ul style="list-style-type: none"> ○ A regional ridematching system which connects commuters who live and work near one another (for employer elements of 511 Rideshare see TCM C-1). ○ Information and incentives for carpools and vanpools, including gas cards for carpoolers, seat subsidies for vanpoolers, and other prizes for both types of ridesharing (for county-level incentives, see TCM C-1). • CMAs, county transportation authorities, cities and counties provide a range of different incentives to encourage non-single occupant vehicle commute trips. Eligibility requirements and types of incentives available vary and include (or will include) the following¹: <ul style="list-style-type: none"> ○ Alameda County: guaranteed ride home in emergencies ○ ACE Rail: guaranteed ride home in emergencies for those who hold monthly ACE Rail passes ○ 511 Contra Costa: guaranteed ride home in emergencies, discounted vanpool fare for new vanpoolers, cash incentives for vanpool drivers who sustain a vanpool for one year, gift card incentives for carpool participants, complimentary transit tickets for commuters who currently drive alone ○ Marin County: incentives for new vanpools and guaranteed ride home ○ Napa County: guaranteed ride home in emergencies, gas cards for new back-up vanpool drivers, gas cards for new vanpools ○ San Francisco County: preferential vanpool parking, guaranteed ride home in emergencies, carpool parking permits

¹ See 511 Rideshare’s Commute Rewards and Incentives: County Incentives webpage at http://rideshare.511.org/rideshare_rewards/county.asp.

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TCM C-3: Rideshare Services and Incentives	
	<ul style="list-style-type: none"> ○ San Mateo County: guaranteed ride home in emergencies, gas cards for carpool participants, discounted vanpool fare for new vanpoolers, discounted purchase and installation costs for employers to provide bike racks/lockers, free transit coupons for new riders, free lunchtime taxi service ○ Santa Clara County: Eco Pass Transit annual transit pass on South Bay transit systems (for participating employers), preferential parking for 4+ carpools ○ Solano County: guaranteed ride home in emergencies, gas cards for new back-up vanpool drivers, gas cards for new vanpools, discounted bicycle purchase ○ Sonoma: guaranteed ride home in emergencies, free 2+ carpool parking in downtown garages, reduce cost transit passes
Implementation Actions	<p>Phase 1 (2012) Implement the following actions (\$17 million):</p> <ul style="list-style-type: none"> ● Continue to provide 511 RideMatch service and implement website enhancements including a trip-tracking tool, functionality for administration of employer-based and local agency-based incentives, a quick search matching tool, and improved interface functionality for employers. ● Continue to provide rideshare support services, including call center services, program marketing and materials and vanpool support services. ● Continue administration of 511 Rideshare Rewards annual campaign and provision of incentives for carpools and vanpools ● Implement incentive programs sponsored by congestion management agencies, county transportation authorities, cities and counties, and transit agencies <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> ● Sustain Phase 1 programs (\$47 million)
Cost	<p>Phase 1: \$17 million Phase 2: \$47 million</p>
Travel Market Affected	<p>This measure would primarily affect commute trips, which were 23% of total person trips and about 40% of vehicle miles travelled for personal (non-commercial) travel in 2006 in the Bay Area.</p>
Co-Benefits	<ul style="list-style-type: none"> ● Reduced travel costs for employees ● Reduced employer costs in provision of parking for employees
TCM Monitoring	<ul style="list-style-type: none"> ● Track number of carpools and vanpools matched through the 511 RideMatch service ● Track number of carpools and vanpools participating in 511 Rideshare Rewards program
Implementing Agencies	<p>MTC, Congestion Management Agencies, Cities, Counties, and Transit Operators.</p>
Impediments	<ul style="list-style-type: none"> ● Surveys and focus groups indicate that many commuters want flexibility in their daily trips due to the need to have flexibility in their work hours, conduct errands, or pick-up and drop-off children. This reduces the market for carpooling and vanpooling as traditional participation requires fixed schedules among participants. Incentive programs such as

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TCM C-3: Rideshare Services and Incentives	
	<p>guaranteed ride home programs, which are available to most Bay Area employees, and/or encouraging participants to try carpooling once or more a week can alleviate this impediment.</p> <ul style="list-style-type: none">• Potential lack of funding would preclude MTC, CMAs, county transportation authorities, cities, etc., from delivering this TCM as scoped.• Employer support of ridesharing programs, which complement the regional services and incentives, are limited by the economic downturn.
Sources	<ul style="list-style-type: none">• MTC's Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/

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TCM C-4: Public Outreach and Education	
Purpose	<ul style="list-style-type: none"> Educate the public about air quality impacts of travel choices and ways to curtail polluting activities
Description	<ol style="list-style-type: none"> Implement the BAAQMD’s Spare the Air Program Implement the public outreach campaign component of the Transportation Climate Action Campaign, including promotion of “smart driving” and “smart traveling”
Background	<ul style="list-style-type: none"> Educating the public about the sources and health effects of air pollutants can lead to changes in personal behavior. Surveys indicate that the public is willing to alter behavior in response to air quality goals. BAAQMD administers the Spare the Air program, encouraging individuals to take actions to improve air quality on days when air quality is forecasted to be unhealthy. On summer days with unhealthy levels of ground-level ozone forecast, individuals are encouraged to take transit, carpool, and/or curb driving. Since motor vehicles are the leading source of ozone forming emissions in the Bay Area, efforts to reduce vehicle travel can help avoid exceedances of federal and state standards. The Air District makes public announcements, offers promotions, and works with local governments and employers (see TCM C-1) to encourage travel changes. There are a variety of techniques known as “smart driving”, “green driving”, or “eco-driving” that increase the fuel efficiency of auto travel, thereby reducing emissions and saving money; these include: <ul style="list-style-type: none"> Avoiding quick starts and aggressive driving; Reducing highway speeds (55mph is the most efficient speed for fuel consumption); Using overdrive and cruise control; Avoiding driving in rush hour; Reducing drag by removing roof racks, tow-hook carriers, and other items that cause wind resistance; Removing heavy unneeded items from cars (e.g. golf clubs); Properly maintaining vehicles including maintaining optimal tire pressure In Europe, the ECODRIVEN campaign has been implemented to encourage these types of driving techniques. The campaign is organized and coordinated by a consortium of organizations from 9 European Union countries. Elements of the program include driving school curriculums, fuel saving devices in vehicles, purchasing behavior, and vehicle maintenance. Evaluation of this program has shown positive benefits in traffic safety, GHG reductions and improved air quality¹. MTC’s Transportation 2035 Plan launched a new program, the Transportation Climate Action Campaign, to reduce the region’s carbon footprint. The \$400 million campaign includes funding for outreach activities to educate Bay Area residents about how they can reduce emissions of greenhouse gases (and criteria air pollutants) on an everyday basis. The campaign will feature multiple outreach messages directly linked to action programs, incentives, projects, policies and advocacy focused on two complementary themes: 1) Smart Driving/Vehicles: actions to reduce emissions of greenhouse gases on a per-mile basis via driving behaviors and vehicle improvements as discussed above, and 2) Smart Traveling: actions to reduce emissions of greenhouse gases by promoting alternatives to driving: e.g., transit, biking, walking, carpooling and telework (which are actions captured in many of the other State TCMs).

¹ See www.ecodrive.org

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TCM C-4: Public Outreach and Education	
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> • Implement the BAAQMD’s Spare the Air Program (\$TBD) • Implement the public outreach campaign component of the Transportation Climate Action Campaign, including promotion of “smart driving” and “smart traveling” (\$TBD) <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> • Continue Phase 1 Actions.
Cost	<p>Phase 1: \$ TBD</p> <p>Phase 2: \$ TBD</p>
Travel Market Affected	<p>This measure would affect all intraregional travel, including commute travel; shopping, personal business, social and recreational travel; passenger and commute trips to airports; and school trips. The Spare the Air program emphasizes reduction in morning commute trips.</p>
Co-Benefits	<ul style="list-style-type: none"> • Reduced travel costs from fuel savings and less automobile wear and tear (resulting in less maintenance costs) • Reduced and less severe highway crashes from lower vehicle travel speeds
TCM Monitoring	<ul style="list-style-type: none"> •
Implementing Agencies	<p>BAAQMD and MTC</p>
Impediments	<ul style="list-style-type: none"> • Because the Spare the Air program is voluntary in nature, its effectiveness depends on the cooperation of the general public. • High-speed driving is deeply engrained and widely practiced and tolerated.
Sources	<ul style="list-style-type: none"> • MTC’s Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/

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TCM D-1: Bicycle Access and Facilities Improvements	
Purpose	<ul style="list-style-type: none"> Encourage bicycling through improved or new facilities and better access to transit, employment and major activity centers
Description	<ol style="list-style-type: none"> Implement MTC’s Regional Bicycle Program (which provides capital funds to build out the Regional Bikeway Network as defined in MTC’s Regional Bicycle Plan for the San Francisco Bay Area, 2009 Update) Implement MTC’s Routine Accommodations Policy Implement the Bicycle Facility Program component of the Transportation Fund for Clean Air (TFCA) grant program Fund bicycle projects through Transportation Development Act (TDA) Article 3 funds
Background	<ul style="list-style-type: none"> Bicycle improvements encourage mode shift for shorter trips, which are a majority of total personal trips. The average weekday trip length for all personal travel in the Bay Area in 2006 was 2.95 miles. Of total personal trips in 2006, 21% of trips were less than one mile, 18% were between 1 and 2 miles, 12% were between 2 and 3 miles, and 8% were between 3 and 4 miles. In addition, for longer trips, bicycle improvements encourage transit users who access transit by car to switch to accessing transit by bicycle. Improved bicycling facilities increase perceived and actual safety of travel by bicycle as well as its overall attractiveness, encouraging more travel by this mode. The average trip length for all personal trips in the Bay Area is just under 3 miles, a distance short enough for travel by bicycle. In addition, improved bicycle facilities can encourage park-and-ride users to shift modes to bike-and-ride. Many barriers exist that prevent more bicycle trips. In particular, parts of the Bay Area lack bicycling routes that include features such as lower speed limits, bicycle lanes or other facilities, loop detectors that detect bicyclists waiting at red lights, and other complete street features. MTC’s Regional Bicycle Plan for the San Francisco Bay Area, 2009 Update was created to focus regional bicycle-related funding on high-priority bicycle facilities that serve regional trips. This plan was updated in 2009 and was adopted as a part of MTC’s Transportation 2035 Plan. MTC created the Regional Bicycle Working Group to implement the Regional Bicycle Plan. The Working Group’s activities include data collection and analysis; collaboration with transit operators to provide bike parking at stations; and marketing and outreach. In July 2006, MTC adopted Resolution 3765 to encourage the routine accommodation of bicyclists and pedestrians in projects that are funded by MTC regional discretionary funds. To implement the resolution, MTC developed a Routine Accommodation Checklist Policy, requiring project sponsors to consider the needs of bicyclists and pedestrian in project design. In its Transportation 2035 Plan, MTC committed \$1 billion in funding over the next 25 years for the Regional Bicycle Program. The Bicycle Facility Program (BFP) is a component of BAAQMD’s Transportation Fund for Clean Air (TFCA) grant program that provides funding to reduce motor vehicle emissions through the implementation of new bicycle facilities in the San Francisco Bay Area. MTC has created the Safety Toolbox¹, a website that provides tools for preventing collisions, injuries and fatalities, and encouraging walking and bicycling through partnerships between multiple disciplines, multiple jurisdictions, and the

¹ See MTC’s Safety Toolbox at <http://mtc.ca.gov/planning/bicyclespedestrians/>

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TCM D-1: Bicycle Access and Facilities Improvements	
	<p>public. The site includes information on engineering and maintenance (e.g. design standards and review), law enforcement (e.g. police stings or photo enforcement to identify motorists who violate pedestrian right-of-way crossing streets), planning (e.g. pedestrian- and bicycle-friendly local policies), community involvement (e.g. local jurisdiction pedestrian and bicycle advisory committees), school districts (e.g. Safe Routes to School), and public health (e.g. health promotion).</p> <ul style="list-style-type: none"> • The Transportation Development Act (TDA) is a quarter-cent sales tax that is imposed statewide in California for transportation purposes. A share of this money, TDA Article 3, goes to fund pedestrian and bicycle projects. To obtain TDA funding from MTC, local jurisdictions must have Bicycle Advisory Committee to plan and prioritize funding for bike projects. • A special issue in the bicycle community is the provision of bike lanes on the Bay bridges. Bay bridges with bicycle lanes currently include the Golden Gate, Carquinez, Antioch, and Dumbarton Bridges. The New East Span of the San Francisco-Oakland Bay Bridge and the new Benicia Bridge will also have bicycle lanes. Caltrans completed a feasibility study to install bicycle lanes on the west span of the Bay Bridge in 2001 and Bridge and Toll Authority (BATA) is currently preparing a Project Study Report (PSR) to update this analysis. In particular, it will identify a new cost estimate and update the engineering and design for the touchdown points on Yerba Buena Island and on Rincon Hill in San Francisco. • Bicycle projects are funded as a part of MTC’s Transportation for Livable Communities (TLC) program, see TCM D-3. • The San Francisco County Transportation Authority, in partnership with the San Francisco Metropolitan Transportation Authority and Caltrans, will undertake a feasibility study for a regional bike sharing program. The study would focus on expanding San Francisco’s planned private sector bicycle sharing pilot program to a greater area of the city and region.
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> • Through MTC’s Regional Bicycle Program, fund bicycle improvements that are a part of the Regional Bikeway Network (\$25 million) • Apply MTC’s Routine Accommodations Checklist Policy to projects funded by regional discretionary sources • Fund bicycle projects with TFCA funds (\$ TBD) • Fund bicycle projects with TDA Article 3 funds (\$0.4 million) • Fund and promote annual Bike To Work event (\$0.5 million) • Continue to provide bicycle education and information dissemination via 511 Bicycle website, including the BikeMapper tool (\$0.3 million) <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> • Pursue additional funding for the Regional Bikeway Network (\$ 25 million) • Continue to fund bicycle projects with TDA Article 3 funds (\$1.4 million) • Continue to fund and promote annual Bike To Work event (\$1.2 million) • Continue to provide bicycle education and information dissemination via 511 Bicycle website, including the BikeMapper tool. (\$0.9 million for Phase 2) • Sustain other Phase 1 programs
Cost	Phase 1: \$ 26 million

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TCM D-1: Bicycle Access and Facilities Improvements	
	Phase 2: \$ 29 million
Travel Market Affected	This measure would affect all intraregional travel, including commute travel; shopping, personal business, social and recreational travel; passenger and commute trips to the airport; and school trips.
Co-Benefits	<ul style="list-style-type: none"> • Improved safety/reduced bicycle-motor vehicle accidents • Improved public health/reduced obesity • Reduced travel costs
TCM Monitoring	<ul style="list-style-type: none"> • Track new miles of the Regional Bikeway Network constructed
Implementing Agencies	MTC, BAAQMD, Cities, Counties, Congestion Management Agencies, County Transportation Authorities
Impediments	<ul style="list-style-type: none"> • Bicycle use is limited by factors such as physical ability, terrain, weather, and the need to carry cargo. • Personal safety concerns may also prevent some people from switching modes to bicycle. Improving bicycle facilities and public education for bicyclists and drivers can increase perceived and actual safety. • Funds for bicycle improvements are limited. Funds to implement the bridge portion of the Regional Bikeway Network have not been identified.
Sources	<ul style="list-style-type: none"> • MTC's Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/ • MTC's Regional Bicycle Plan for the San Francisco Bay Area 2009 Update: http://www.mtc.ca.gov/planning/bicyclespedestrians/MTC_Regional_Bicycle_Plan_Update_FINAL.pdf

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TCM D-2: Pedestrian Access and Facilities Improvements	
Purpose	<ul style="list-style-type: none"> Encourage walking through improved or new facilities and better access to transit, employment and major activity centers
Description	<ol style="list-style-type: none"> Fund pedestrian safety and facility improvements
Background	<ul style="list-style-type: none"> Improved pedestrian facilities increase perceived and actual safety of walk trips as well as the overall attractiveness of walking, encouraging more travel by this mode. About one-fifth of all personal trips are less than a mile, a distance short enough to walk. In addition, improved pedestrian facilities can encourage park-and-ride users to shift modes to walk-and-ride. Many barriers exist that prevent people from taking more walk trips. In particular, low levels of pedestrian travel can be attributed to low density, single-use land use patterns and development of streets, roads and development projects that lack adequate attention to the pedestrian environment. Pedestrian improvements encourage mode shift for shorter trips, especially those less than a mile. In 2006, 21% of trips of total weekday personal trips were less than one mile. In addition, for longer trips pedestrian improvements encourage transit users who access transit by car to switch to accessing transit by foot. These types of barriers can be overcome through a variety of techniques, including: <ul style="list-style-type: none"> Ensuring the design and placement of buildings in new developments provide amenities such as sidewalks/paths, benches, and landscaping; minimize setbacks from street; and provide entrances near sidewalks and transit stops (as well as retrofitting developments/streets to include these features). Providing an integrated street network with direct routes for pedestrians and ensuring easy pedestrian access between neighboring developments, as well as downtowns, commercial areas and community centers Locating and designing parking so pedestrians have direct, attractive access (see TCM E-2) Promoting pedestrian-friendly land uses (see TCM D-3) Using street design standards that enhance pedestrian safety and comfort through measures such as reduced street width, reduced turning radii, crosswalks with activated signals, curb extensions/bulbs, buffers between sidewalks and traffic lanes, streets trees, etc. MTC's Regional Pedestrian Committee was created in 2001. The Pedestrian Program works at the regional and community level to make walking a safe, convenient, and healthy activity by using the best engineering, public education, and law enforcement practices to minimize pedestrian injuries and fatalities. MTC has created the Safety Toolbox¹, a website that provides tools for preventing collisions, injuries and fatalities, and encouraging walking and bicycling through partnerships between multiple disciplines, multiple jurisdictions, and the public. The site includes information on engineering and maintenance (e.g. design standards and review), law enforcement (e.g. police stings or photo enforcement to identify motorists who violate pedestrian right-of-way crossing streets), planning (e.g. pedestrian- and bicycle-friendly local policies), community involvement (e.g. local jurisdiction pedestrian and bicycle advisory committees), school districts (e.g. Safe Routes to School), and public health (e.g. health promotion). Pedestrian projects are funded as a part of MTC's Transportation for Livable Communities (TLC) program, see TCM D-3. The Transportation Development Act (TDA) is a quarter-cent sales tax that is imposed statewide in California for transportation purposes. A share of this money, TDA Article 3, goes to fund pedestrian and bicycle projects.

¹ See MTC's Safety Toolbox at <http://mtc.ca.gov/planning/bicyclespedestrians/>.

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TCM D-2: Pedestrian Access and Facilities Improvements	
	<ul style="list-style-type: none"> The BAAQMD’s Transportation Fund for Clean Air (TFCA) program is funded by a surcharge on motor vehicle registration fees paid within BAAQMD’s jurisdiction. The surcharge revenues are to be used to implement specific transportation control measures that are developed and adopted in BAAQMD’s Clean Air Plans and are pursuant to the requirements of the 1988 California Clean Air Act. Programs funded by TFCA include regional and local rideshare programs, vanpool/buspool programs, bicycle lockers, rack and parking stations, bicycle paths and lanes, and pedestrian improvements. In 2006, MTC prepared the Bay Area Pedestrian Districts Study to encourage and improve pedestrian planning in the Bay Area. The Pedestrian Districts Study advances the use of pedestrian districts as a concept for creating better pedestrian environments in the Bay Area. Through the development of the pedestrian district typologies and real-life case studies, the study identifies the types and costs of pedestrian facilities that have the greatest impact on improving the pedestrian environment. This study is one tool that cities and counties can use in planning for pedestrian improvements. Pedestrian projects are also subject to MTC’s Routine Accommodation Checklist Policy, see TCM D-1
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> Continue to fund pedestrian projects with TDA Article 3 funds (\$0.6 million) Continue to fund pedestrian projects with BAAQMD’s TFCA funds (\$TBD) Fund pedestrian safety and facility improvements with TLC funds (see TCM D-3) and through Safe Routes to School and Safe Routes to Transit (see TCM C-2) <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> Continue to fund pedestrian projects with TDA Article 3 funds (\$1.8 million) Continue to fund pedestrian projects with BAAQMD’s TFCA funds (\$TBD)
Cost	<p>Phase 1: \$0.6 million</p> <p>Phase 2: \$1.8 million</p>
Travel Market Affected	This measure would affect all intraregional travel, including commute travel; shopping, personal business, social and recreational travel; and school trips.
Co-Benefits	<ul style="list-style-type: none"> Improved safety/reduced pedestrian-motor vehicle accidents Improved public health/reduced obesity Reduced travel costs
TCM Monitoring	<ul style="list-style-type: none"> Track number of pedestrian projects funded through TLC and TDA
Implementing Agencies	MTC, congestion management agencies, transit operators, cities and counties
Impediments	<ul style="list-style-type: none"> Long distances, inclement weather, and concerns with safety may all reduce the desirability of pedestrian travel. Pedestrian improvements will enforce pedestrians’ actual and perceived safety.
Sources	<ul style="list-style-type: none"> MTC’s Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/

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TCM D-3: Local Land Use Strategies	
Purpose	<ul style="list-style-type: none"> Promote land use patterns, policies, and infrastructure investments that support higher densities and job creation near transit that facilitate walking, bicycling and transit use
Description	<ol style="list-style-type: none"> Award funds through TLC program to support transit-supportive land uses, particularly in FOCUS PDAs (\$2.2 billion) Award Station Area Planning Grants Implement MTC's TOD Policy for Resolution 3434 Regional Transit Expansion Program. Implement guidance to cities and counties on documents including local plans, CEQA documents, Congestion Management Plans to encourage mixed-use development, housing and jobs in areas that are well-served by transit.
Background	<ul style="list-style-type: none"> A significant body of research has demonstrated the relationship between land use and travel behavior. People who live in areas with higher densities, a mix of residential, retail and office uses, with well-designed pedestrian, bicycle and transit infrastructure, and that are proximate to transit service have distinctly different travel behavior. They take more transit, bicycle, and walk trips and drive shorter distances, resulting in reduced vehicle miles travelled per household. For example, key findings from MTC's Station Area Residents Survey (STARS) Report include the following: <ul style="list-style-type: none"> People who live within ½ mile of a rail or ferry station are four times as likely to use transit as people living farther than ½ mile from a rail/ferry stop. Individuals living and working within ½ mile of a rail/ferry stop use transit for 42% of their work commute trips, whereas those who neither live nor work within ½ mile of a station use transit for only 4% of their work commute trips. Households within ½ mile of rail stations/ferry produce about half of the vehicle miles travelled of their suburban and rural counterparts. People who live within ½ mile of rail or ferry walk about half the time for all short trips (less than one mile), whereas residents who live greater than ½ mile away walk for only about one quarter of short trips.¹ Land use is directly regulated at the local level by local governments. Cities and counties adopt local general plans, specific plans and zoning ordinances. As local governments support focused growth, these documents may be updated to promote land use patterns with increased densities and mixed land uses, focus development around transit stops, strengthen downtowns and community centers, and promote infill development and reuse/redevelopment of underutilized land. Local parking policies also impact travel behavior and can be revised to encourage non-auto trips (see TCM E-1). MTC's Transportation for Livable Communities (TLC) offers capital grants to cities, counties, and transit agencies to construct projects that support compact development near transit. Since the inception of the TLC program in 1998, MTC has funded 67 planning projects totaling \$2.5 million and 84 capital projects totaling \$85 million. In July 2005, MTC adopted a landmark Transit-Oriented Development (TOD) Policy. The TOD Policy ties regional discretionary funds for new transit extension projects (funded via Resolution 3434) to supportive land uses. This policy establishes targets for new housing units in each transit corridor and calls for station area plans and corridor working groups to help achieve the housing targets. Station area plans to meet the housing targets must be adopted by local municipalities prior to receiving MTC discretionary funding for construction of Resolution 3434 funds. MTC has

¹ See Station Area Residents Survey (STARS) Report (September 2006) at http://www.mtc.ca.gov/planning/smart_growth/stars/index.htm.

Attachment A: Draft Transportation Control Measure Narratives

TCM D-3: Local Land Use Strategies	
	<p>provided over \$10 million in funding to date to Station Area Planning grant recipients.</p> <ul style="list-style-type: none"> • ABAG, MTC, BAAQMD and BCDC administer FOCUS, a voluntary, local jurisdiction-led effort to identify future locations for infill development and for the preservation of critical habitat and open space. Through this process 60 municipalities have become Priority Development Areas, offering the chance to house over 50% of the region’s 25-year housing needs on 3% of the land within the existing built environment. In addition, 98 Priority Conservation Areas have been designated as areas for protection and preservation. • In its Transportation 2035 Plan, MTC allocated \$2.2 billion to TLC over the next 25 years. MTC is currently developing new TLC program guidelines to allow a broader set of eligible expenditures that are focused on providing the best possible incentives for TOD. Program guidelines will also lay out how to leverage TLC funds to support PDAs as called for in MTC’s Transportation 2035 Plan. • Senate Bill 375, signed into law in September 2008, establishes a process for the California Air Resources Board (ARB) to implement AB 32 by requiring ARB to adopt by September 30, 2010, regional greenhouse gas (GHG) reduction 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. MTC will need to work closely with local and regional agency partners to begin implementation of SB375. • The BAAQMD is currently updating its California Environmental Quality Act (CEQA) Guidelines, which will establish thresholds of significance for greenhouse gases. The BAAQMD will also issue guidance for local general plan updates and guidelines to help local jurisdictions address air quality and population exposure issues related to infill development.
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> • Award funds through new TLC program to support transit-supportive land uses, particularly in FOCUS PDAs (\$72 million) • Implement MTC’s TOD Policy for Resolution 3434 Regional Transit Expansion Program • Continue to fund smart growth projects through BAAQMD’s TFCA program (\$TBD) • Issue BAAQMD’s guidance to cities and counties on documents such as CEQA documents and general plans. <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> • Sustain Phase 1 programs (\$98 million)
Cost	<p>Phase 1: \$72 million Phase 2: \$98 million</p>
Travel Market Affected	<p>This measure would affect all intraregional travel, including commute travel; shopping, personal business, social and recreational travel; passenger and commute trips to airports; and school trips.</p>

Attachment A: Draft Transportation Control Measure Narratives

TCM D-3: Local Land Use Strategies	
Co-Benefits	<ul style="list-style-type: none"> • Reduced travel costs • Community enhancements through revitalized downtowns, transit centers, and other major activity nodes • Closer integration of transportation and land use
TCM Monitoring	<ul style="list-style-type: none"> • Track funds awarded to and completion of TLC projects
Implementing Agencies	MTC, BAAQMD, ABAG, Cities, Counties, Congestion Management Agencies, County Transportation Authorities, and Transit Operators
Impediments	Land use changes and new development occur slowly and are directly regulated by local jurisdictions, not regional agencies. In addition, higher density development can raise neighborhood concern over impacts on traffic, parking, localized air pollution, and other impacts. However, FOCUS, TLC, and MTC's TOD Policy all provide incentives that help overcome some of these challenges. In addition, as Senate Bill 375 implementation begins, CEQA-relief incentives for projects consistent with the region's land use strategy to reduce greenhouse gas reductions may also reduce both the time and costs associated with this type of development.
Sources	<ul style="list-style-type: none"> • MTC's Transportation 2035 Plan: http://www.mtc.ca.gov/planning/2035_plan/ • FOCUS: http://www.bayareavision.org/

Attachment A: Draft Transportation Control Measure Narratives

TCM E-1: Value Pricing Strategies	
Purpose	<ul style="list-style-type: none"> • Test and implement, where feasible, value pricing (also referred to as congestion pricing) on Bay bridges and in San Francisco to manage travel demand during congested conditions and improve mobility
Description	<ol style="list-style-type: none"> 1. Seek authorizing legislation to implement value pricing on Bay bridges 2. Implement value pricing, where feasible, to improve mobility in San Francisco as recommended by the San Francisco County Transportation Authority's (SFCTA) Mobility, Access, and Pricing Study (MAPS)
Background	<ul style="list-style-type: none"> • Value pricing refers to varying road tolls wherein higher prices are set under congested conditions and lower prices at less congested times and locations for purposes of reducing peak-period traffic volumes to optimal levels. Tolls can vary based on a fixed scheduled, or they can be dynamic, meaning that rates change depending on the level of congestion that exists at a particular time. Value pricing serves as a demand management strategy on existing roadways to avoid the need to add capacity, while raising needed revenues for a wide-range of transportation improvements, including public transit. • The Federal Highway Administration's (FHWA) Value Pricing Pilot (VPP) program, which was initially authorized in the Intermodal Surface Transportation Efficiency Act (ISTEA) and most recently renewed under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), encourages implementation and evaluation of value pricing pilot projects to manage congestion on highways through tolling and other pricing mechanisms. Three Bay Area transportation agencies have received VPP funding to study value pricing, including area road charging and parking pricing in San Francisco, express lanes on I-580 and I-680 in Alameda County, and pricing strategies in Santa Clara County. • The San Francisco County Transportation Authority is currently conducting a Mobility, Access, and Pricing Study (MAPS) to examine the feasibility of value pricing in San Francisco, following receipt of a \$1 million VPP study grant from the FHWA. Refined pricing scenarios under evaluation include combing fees on gateway crossings with additional fee on downtown cordon and fee on crossings in the northeast corner of San Francisco. The SFCTA expects to present the final study recommendations in spring 2009. • MTC is pursuing legislation in the 2009 state session via AB 744 (Torrico) to authorize a Bay Area Express Lane Network to deliver congestion relief and public transit funding. Because of this, the Bay Area bridges must be consistent with Bay Area freeways relative to HOV usage so that, together, the region will be served by a unified network (see TCM B-3).
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> • Seek authorizing legislation for value pricing on Bay bridges and recommendations from SFCTA's Mobility, Access, and Pricing Study (if applicable). <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> • If authorized by the State legislature, MTC and Caltrans will begin a demonstration of value pricing on at least one of the Bay bridges. If this demonstration is successful, value pricing may be considered for application to other bridges in the region, if feasible. • Implement value pricing recommendations from SFCTA's Mobility, Access, and Pricing Study, where feasible.
Cost	Phase 1: \$ TBD

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TCM E-1: Value Pricing Strategies	
	Phase 2: \$ TBD
Travel Market Affected	This measure would affect all intraregional travel, including commute travel; shopping, personal business, social and recreational travel; passenger and commute trips to airports; and school trips.
Co-Benefits	<ul style="list-style-type: none"> • Generation of new funds for multi-modal transportation improvements • Travel time savings
TCM Monitoring	<ul style="list-style-type: none"> • Track whether new legislative authority is granted for MTC/BATA to implement pricing on Bay bridges or for SFCTA to implement its MAPS strategies • Track implementation status of SFCTA's MAPS strategies
Implementing Agencies	MTC, BATA, Caltrans, California Highway Patrol, SFCTA, and other transportation partners
Impediments	<ul style="list-style-type: none"> • There is mixed public opinion regarding value pricing, with concerns about the impact on existing carpoolers, potential environmental impacts, the use of net revenues, and charging for the use of the highway and bridges.
Sources	<ul style="list-style-type: none"> • FHWA Value Pricing Program: http://ops.fhwa.dot.gov/tolling_pricing/value_pricing/index.htm • SFCTA's MAPS: www.sfmobility.org

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TCM E-2: Parking Pricing and Management Strategies	
Purpose	<ul style="list-style-type: none"> Institute parking pricing and management strategies
Description	<ol style="list-style-type: none"> Implement municipal parking pricing, where feasible
Background	<ul style="list-style-type: none"> In most cities in the Bay Area, local government parking policies and zoning codes such as minimum off-street parking requirements, the provision of free on-street parking, and employer-paid parking tend to support vehicle use and driving. Reforms to parking policies and zoning codes can have a large impact on reducing vehicle use. Pricing has long been recognized as the most powerful parking management tool. Effective pricing policies can be used to encourage travel by alternate modes, discourage commuter parking in key locations, and increase customer access to convenient short-term parking supplies. Revenues from parking can be used to fund transit supportive parking and transportation improvements. Local governmental parking pricing strategies include: on-street parking pricing, variable rate parking pricing, and coordinated off-street and on-street pricing strategies to manage municipality-owned parking spaces. In June 2007, SFMTA was selected for the Urban Partnership program, a U.S. Department of Transportation discretionary program for urban congestion relief projects. The SFMTA will implement SFpark in the City of San Francisco, a variable rate parking pricing strategy to more effectively manage city-owned on-street, parking lot, and parking garage spaces by varying the rates based on location, time of day, and day of the week. Parking prices will be adjusted to higher rates in the highest-demand areas, where there tends to be few or no available spaces, and prices will be adjusted to lower rates in lower-demand areas, where there tends to be excess available spaces. Similarly, rates will be higher during peak hours (e.g. business hours in the Financial District) and lower during off-peak hours. Prices will also be adjusted to encourage those needing to park for longer lengths of time to use parking lots and garages, leaving on-street parking options for short-term parking needs. This strategy is intended to ensure that 1 in 10 parking spaces in a block are available, thus reducing congestion caused by cars “cruising” for available spaces. The program will be piloted in fall 2009 in the Civic Center/Hayes Valley, and Downtown districts¹. The City of Redwood City’s parking ordinance uses parking utilization as the key for on-street pricing policy. The municipal code (section 20.120) allows for the periodic adjustment of the downtown meter rates based upon a target parking utilization rate of 85 percent. The City of Berkeley has implemented several parking pricing/policy reform strategies including: a cap on monthly parking permits for public garages, a \$105/month discount on parking for 3+ carpools, and variable rate parking garage fees that discourage all-day commuter parking. The Joint Policy Committee (JPC) has identified regional parking policies as a priority area in its climate action strategy. MTC, in leading this effort, is preparing a report, “Regional Parking Strategies for Climate Protection,” to outline a set of regional parking reform strategies and actions to reduce greenhouse gas emissions. JPC is expected to adopt regional parking policies in the end of 2009. Strategies may include: establishing a parking clearinghouse for local jurisdictions; initiating a Green Parking Certification Program modeled after the LEED green building program; considering a regional parking fee; providing financial incentives; engaging congestion management agencies in climate protection efforts; and

¹ See SFpark home page at <http://www.sfmta.com/cms/psfpark/sfparkindx.htm>.

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TCM E-2: Parking Pricing and Management Strategies	
	advocating for legislative reforms around parking.
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> • Implement SFMTA’s SFPark program (\$25 million) <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> • Identify parking pricing strategies beyond Phase 1 program
Cost	<p>Phase 1: \$ 25 million</p> <p>Phase 2: \$ TBD</p>
Travel Market Affected	This measure could potentially affect all intraregional travel, including commute travel; shopping, personal business, social and recreational travel; passenger and commute trips to airports; and school trips.
Co-Benefits	<ul style="list-style-type: none"> • Generation of parking revenues • Improved walking and biking quality of downtowns and town centers due to reduced traffic cruising for parking and increased walking, biking and transit use • Increased income by providing parking cash out options for employees
TCM Monitoring	<ul style="list-style-type: none"> • Conduct program evaluation of SFpark pilot program • Track whether new legislative authorities are granted
Implementing Agencies	SFMTA, Cities, Counties, BAAQMD, MTC, and JPC
Impediments	<ul style="list-style-type: none"> • While a regional approach holds merit in addressing many of these concerns, local governments may be reluctant to provide support for regional or county level policies that are perceived as reducing local purview over parking policies as a local land use decision. • Local governments may be reluctant to adopt reforms for fear that it will put their businesses at a disadvantage with competitors in neighboring cities that subsidize parking. • Parking is a highly political issue at the local level, where neighborhood concerns about the potential for “spillover” impacts on residential areas can stall plans for rationalizing the supply, price and management of parking. • Because the subsidies, costs, and impacts of subsidizing parking and requiring the provision of parking are hidden from the view of parkers, voters, and especially from those impacted by the opportunity cost of dedicating land to parking, and the higher cost of other goods and services, including housing, there is often no natural local constituency in favor of reform.
Sources	<ul style="list-style-type: none"> • MTC’s Parking Information: http://www.mtc.ca.gov/planning/smart_growth/parking_study.htm

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TCM E-3: Pursue Other Pricing Strategies	
Purpose	<ul style="list-style-type: none"> Pursue pricing measures such as taxes or fees to ensure that full social costs of motor vehicle use are reflected in ownership and operational costs
Description	<ol style="list-style-type: none"> Pursue authorizing legislation to implement new pricing strategies (such as regional gas tax or fee increase, tax on vehicle mileage driven, etc.) to curb travel demand, manage congestion and improve mobility
Background	<p>Regional Gas Tax Increase</p> <ul style="list-style-type: none"> MTC has authority for placing a regional gas tax measure on the ballot for up to a \$0.10 increase. Through periodic polling, MTC will continue to investigate the viability of proposing a regional gas tax or gas fee to Bay Area voters (which would currently require a 2/3 margin of approval). This measure would include building legislative and public support for higher federal and state gas taxes, either through a tax increase or indexing current taxes to keep up with inflation. <p>Tax on Mileage Driven</p> <ul style="list-style-type: none"> A regional carbon tax or tax on mileage driven would increase the cost per mile of driving for all trips and encourage reduction in driving over improvements in engine technologies and fuels. People who drive less or own more fuel efficient cars would pay less than others. A possible way to implement a mileage tax involves developing a system that would require all cars and trucks to be equipped with global satellite positioning technology, a transponder, a clock and other equipment to record how many miles a vehicle was driven, whether it was driven on highways or secondary roads, and even whether it was driven during peak traffic periods or off-peak hours. The device would tally how much tax motorists owed depending upon their road use. Motorists would pay the amount owed when it was downloaded, probably at gas stations at first, but an alternative eventually would be needed. In 2007, Oregon concluded a 1-year pilot test of a mileage-based tax to replace the state gas tax as a funding source. The pilot program installed global satellite positioning systems (GPS) devices in 285 cars in Portland in 2006 and 2007 which allowed motorists to have their mileage measured and paid for every time they bought gas. Drivers were charged 1.2 cents a mile, a rate that was considered equivalent to the state's 24-cents-a-gallon gas tax rate when calculated on a vehicle with an average fuel efficiency of 20 miles per gallon. The pilot found the concept feasible for implementation within the next 10 years, but a key step is working with automobile manufacturers to refine in-vehicle technology to track mileage driven. In February 2009, White House Press Secretary Robert Gibbs stated that a "policy of taxing motorists based on how many miles they have traveled is not and will not be Obama administration policy."
Implementation Actions	<p>Phase 1 (2012)</p> <ul style="list-style-type: none"> Increase regional gas tax by \$0.10 when there is demonstrated support from the state legislature and the public <p>Phase 2 (2020)</p> <ul style="list-style-type: none"> Seek authorizing legislation to impose a regional carbon tax or tax on mileage driven when there is demonstrated support from the state legislature and the public Sustain Phase 1 elements, or modify as appropriate

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TCM E-3: Pursue Other Pricing Strategies	
Cost	Phase 1: \$ TBD Phase 2: \$ TBD
Travel Market Affected	This measure would affect all intraregional travel, including commute travel; shopping, personal business, social and recreational travel; passenger and commute trips to airports; and school trips.
Co-Benefits	<ul style="list-style-type: none"> • Travel time savings • Generation of revenues for multi-modal transportation improvements
TCM Monitoring	<ul style="list-style-type: none"> • Track whether new legislative authorities are granted
Implementing Agencies	State Legislature, MTC, BAAQMD
Impediments	<ul style="list-style-type: none"> • Gas prices have been volatile over the past few years, hitting its peak in early summer 2008 at over \$4.00 gallon in the Bay Area and tapering since then. Given the current economic recession, the public support for gas tax increases or fees may not be supported. • Public support for a carbon tax or miles driven fee has been mixed, where some support this pricing mechanism as a way to reduce greenhouse gas emissions, while many others have expressed criticism and resistance to taxes/fees in general. Opponents have raised privacy issues because cars will be tracked via GPS to measure the amount of miles driven. As indicated by Portland’s pilot program, some technology refinements are needed to ensure successful implementation.
Sources	<ul style="list-style-type: none"> • Oregon Evaluation: http://www.oregon.gov/ODOT/HWY/RUFPP/docs/RUFPP_finalreport.pdf