

TRANSPAC Transportation Partnership and Cooperation

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TRANSPAC TAC MEETING NOTICE AND AGENDA

THURSDAY, APRIL 26, 2012

9:00 am TO 11:00 am

COMMUNITY ROOM

CITY OF PLEASANT HILL CITY HALL

100 GREGORY LANE

PLEASANT HILL

(925) 969-0841

- 1. Presentation on the SR-4 Integrated Corridor Analysis presented by Tom Biggs, Vice President, Atkins North America**

Attachment: Public Review Draft of the SR-4 Integrated Corridor Analysis

- 2. CCTA staff is working with Caltrans to set up the kickoff meeting for the I-680 CSMP TAC. Matt Kelly sent an e-mail last week re: interest in serving the TAC for the CSMP. All interested TAC members welcome**
- 3. Consideration of Appointment of an alternate to TCC**
- 4. a) Bay Area Plan Draft Transportation Investment Strategy 4/13/12 Excerpts, Handout at April 18, 2012 CCTA meeting and;**
b) Update on Proposed One Bay Area Grant, CCTA Planning Committee Handout, April 4, 2012 (information)

NOTE: TAC members – just a reminder to get in touch with Lynn Overcashier, 511 Contra Costa if your jurisdiction is interested in electric charging station and bicycle infrastructure projects.



CONTRA COSTA
**transportation
 authority**

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Randell H. Iwasaki,
 Executive Director

April 16, 2012

To: **All Interested Parties**

From: **Martin R. Engelmann, Deputy Executive Director, Planning** *MRE*

RE: **Distribution of the SR-4 Integrated Corridor Analysis – Public Review Draft**

This letter is to announce the release of the State Route (SR) 4 Integrated Corridor Analysis (ICA) – Public Review Draft, prepared by the ATKINS North America consultant team, with funding and oversight by CCTA. The purpose of the SR-4 ICA is to:

- 1) Identify and prioritize previously identified projects along the corridor;
- 2) Develop and evaluate new projects, including transit options and arterial operational improvements;
- 3) Advances local community goals for Priority Development Areas (PDAs) along the corridor; and
- 4) Establish a consistent set of Multi-Modal Transportation Service Objectives (MTSOs) for incorporation into future Action Plan updates.

The Draft SR-4 ICA is available for download at www.ccta.net (from the home page, click on "Current Activities"). Printed copies of the report are available on a limited basis upon request. Please direct your comments or requests to Diane Bodon, Planning Assistant at CCTA (925-256-4720 | dbodon@ccta.net).

Comments are due by Thursday, May 31, 2012.

We appreciate your interest and look forward to your continued involvement in the SR-4 ICA.

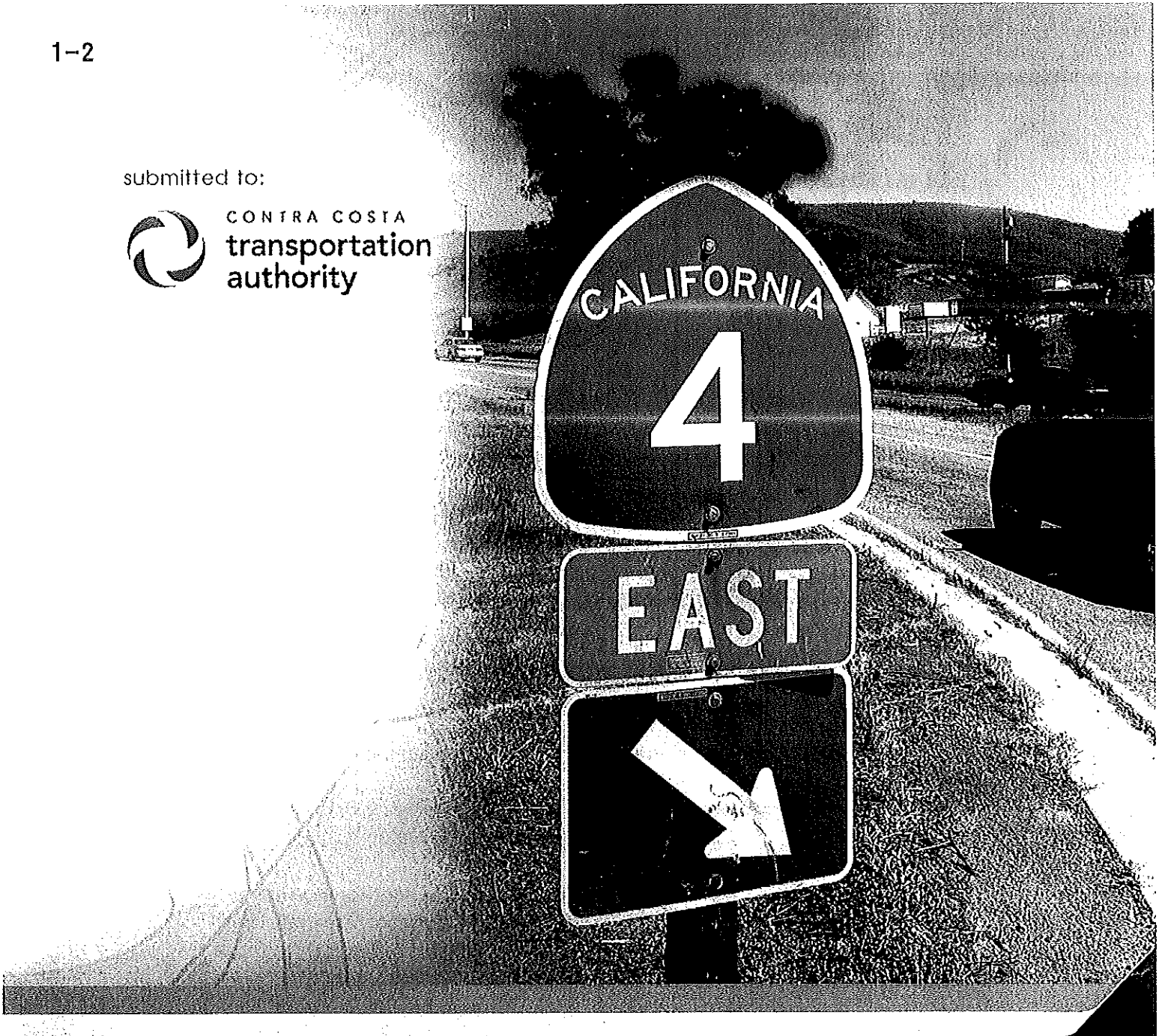
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cc: RTPC Managers; SR-4 C-TAC; SR-4 C-PAC, Corridor City Managers and Public Works Directors (Hercules, Martinez, Concord, Pittsburg, Antioch, Oakley, Brentwood); Contra Costa County Administrator and Public Works Director

submitted to:



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SR-4 Integrated Corridor Analysis

April 12, 2012

Public Review Draft

ATKINS

SR-4 Integrated Corridor Analysis

Public Review Draft

Prepared for:

Contra Costa Transportation Authority
2999 Oak Road, Suite 100
Walnut Creek, California 94597

Prepared by:

ATKINS

475 Sansome Street, Suite 2000
San Francisco, CA 94111

April 12, 2012

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Appendices

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Section 1: SR-4 Integrated Corridor Analysis

Introduction

Three of the Regional Transportation Planning Committees (RTPCs) (West, Central, and East) in Contra Costa adopted an action in their respective Action Plans to develop a corridor management plan for SR-4 from I-80 in the City of Hercules to SR-160 in the City of Antioch. As a follow-on document to the State Route (SR-4) Freeway Performance Initiative (FPI)/Corridor System Management Plan (CSMP), the SR-4 Integrated Corridor Analysis (ICA) represents the next step in supporting the Governor's Strategic Growth Plan (CGP), as well as ensuring consistency between the CSMP and local planning efforts in West, Central, and East Contra Costa County. More specifically, the purpose of the SR-4 ICA is to coordinate the three Action Plans for SR-4 (West, Central, and East) into a cohesive corridor plan that:

- 1) identifies and prioritizes previously identified projects along the corridor;
- 2) advances local community goals for Priority Development Areas (PDAs) along the corridor; and
- 3) recommends a Multi-modal Transportation Service Objective (MTSO) for SR-4.

Geographic Setting

The western limit of SR-4 is the I-80/SR-4 interchange in the City of Hercules, and the corridor extends eastward, ending at the SR-4/SR-160 interchange in the City of Antioch. The corridor is characterized by its rolling topography between I-80 and I-680, its suburban land uses eastward of the I-680 interchange. The corridor lane configuration varies between four and seven mixed-flow lanes and approximately four miles of bi-directional High-Occupancy Vehicle (HOV) lanes. Two mainline capacity improvements to the SR-4 corridor system are either planned or under construction within the corridor: the SR-4 East Widening Project (Loveridge Road to SR-160) and Segment 3 of the SR-4 Bypass (Marsh Creek Road to Vasco Road).

Regional Transportation Planning Committees

There are four RTPCs in Contra Costa: the West Contra Costa Transportation Advisory Committee (WCCTAC) in West County, Transportation Partnership and Cooperation Committee (TRANSPAC) in Central County, Transportation Planning Committee (TRANSPAN) in East County, and the Southwest Area Transportation Committee (SWAT) which includes both the Lamorinda and Danville-San Ramon areas. The County represents unincorporated areas on each RTPC. These RTPCs are made up of elected and appointed representatives from each jurisdiction within that region. Officials from transit agencies and planning commissions also serve on some of the RTPCs, either as voting or ex-officio members. Each RTPC is also assisted by a Technical Advisory Committee made up of planning and engineering staff from the jurisdictions. The SR-4 corridor is located in three planning areas: West, Central, and East.

West

The West planning area is comprised of the following jurisdictions: El Cerrito, Hercules, Pinole, Richmond, San Pablo, and Contra Costa County.

Central

The Central planning area is comprised of the following jurisdictions: Clayton, Concord, Martinez, Pleasant Hill, Walnut Creek, and Contra Costa County.

East

The East planning area is comprised of the following jurisdictions: Antioch, Brentwood, Oakley, Pittsburg, and Contra Costa County.

Stakeholder Engagement

At the outset of the SR-4 ICA, two advisory committees were established to help guide the work. Each met periodically throughout the SR-4 ICA. The committees were briefed on progress and asked to provide feedback and input on appropriate next steps.

The Corridor Technical Advisory Committee (C-TAC) was formed to ensure full participation of local staff in the preparation of the SR-4 ICA. The C-TAC was primarily composed of transportation planners and engineers from the affected jurisdiction along the corridor plus CCTA staff and representatives from Caltrans. Additional organizations invited to participate included the Metropolitan Transportation Commission (MTC), Bay Area Rapid Transit (BART), Alameda-Contra Costa Transit (AC Transit), Tri Delta Transit, County Connection, and WestCAT.

The Corridor Policy Advisory Committee (C-PAC) was designed to ensure participation of local elected officials in the decisions made regarding the SR-4 ICA. Each of the following RTPC appointed two elected:

- WCCTAC
- TRANSPAC
- TRANSPLAN

Methodology

In conjunction with the members of the C-TAC and C-PAC, the study team compiled a list of all known and potential projects in the corridor. The study team then analyzed each project's cost and benefits. The projects were divided into Short-Term and Long-Term projects depending on whether they could reasonably be implemented in a near-term planning horizon (2015-2020), or would require a longer implementation lead-time (2020-2030). Projects were also grouped by planning area: West, Central, and East.

Stakeholders also provided input on recommended qualitative and quantitative metrics to be used in evaluating each of the projects. The study team used a matrix approach to document the qualitative benefits of each project and applied computer models to develop the quantitative metrics. Each project was evaluated against future baseline conditions consistent with its designation as a Short-Term (2015-2020) or Long-Term (2020-2030) project. The study team also quantified the impact of the full set of proposed projects on MTSOs in each planning area.

Corridor Description

The SR-4 corridor is an east-west route approximately 31 miles in length providing interregional travel between the Central Valley and Bay Area for commute, recreational and commercial traffic. It also serves a significant level of locally generated demand from the cities located along the corridor such as Hercules, Martinez, Concord, Pittsburg, Antioch, Brentwood, and Unincorporated Contra Costa County.

The SR-4 corridor is on the National Highway System (NHS) as a basic route. It is functionally classified as both an Urban Principal Arterial and as expressway-freeway in different segments due to changes in access along its 31 mile stretch. The SR-4 corridor is on the Surface Transportation Assistance Act (STAA) and the State Highway Extra Legal Load (SHELL) network. SR-4 is a designated Route of Regional Significance in the Countywide Transportation Plan. SR-4 falls within the jurisdiction of MTC, Caltrans District 4, and Bay Area Air Quality Management District (BAAQMD).

Major Arterials

There is an extensive network of arterial roadways and local streets that provide access to SR-4 and serve local travel throughout the corridor. These include Willow Pass Road and Port Chicago Highway in Concord, the Pittsburg-Antioch Highway, West Leland Road and Buchanan Road in Pittsburg, and 18th Street in Antioch. These arterials may also unofficially serve as alternative routings during major incidents on SR-4.

Goods Movement

The SR-4 corridor serves local and intercity truck and heavy vehicle travel for surrounding communities such as Hercules, Martinez, Concord, Pittsburg, Antioch, Oakley, and Brentwood. Additionally, it provides access to I-80, the second longest interstate route in the U.S., and a major route for interstate commerce.¹ Truck and heavy vehicle traffic makes up four to seven percent of daily vehicle trips along the SR-4 corridor.²

¹ The Dwight D. Eisenhower National System of Interstate and Defense Highways. Federal Highway Administration (FHWA). November 2002. <http://www.fhwa.dot.gov/reports/routefinder/index.htm>

² 2007 Truck AADT. Traffic Data Branch. Caltrans. <http://www.dot.ca.gov/hq/traffops/saferesr/trafdata>

Transit

The SR-4 corridor includes interstate and regional rail, express and local bus service within Contra Costa County (specifically Antioch, Brentwood, Concord, Hercules, Martinez, and Pittsburg). The major providers are Amtrak (Capitol Corridor service), BART, WestCAT, Central Contra Costa Transit Authority (CCCTA) and Tri Delta Transit. A total of six Park & Ride facilities are located along the corridor that serve as pick-up/drop-off points for the three bus operators in the corridor, WestCAT, CCCTA, and Tri Delta Transit. In addition, the first phase of eBART is now under construction from Pittsburg/Bay Point BART to Hillcrest Avenue in Antioch.

Bicycle and Pedestrian Network

The SR-4 corridor allows bicycle shoulder access between San Pablo Avenue and Cummings Skyway and Port Chicago Highway and Willow Pass Road, but no pedestrian access. Bicyclists and pedestrians may travel parallel to SR-4 on the remaining segments of SR-4 using local arterials. These provide access to local job centers, shopping centers, K-12 schools, colleges, and transit stations. Bicycle facility types include Class-I (multi-use), Class-II (bicycle lane) and Class-III (bicycle route). BART stations and Park and Ride lots within the corridor provide bicycle parking and storage facilities. Pedestrian walkways are present across SR-4 at Bailey Road, Railroad Avenue and Hillcrest Avenue in Pittsburg and Antioch.

Intelligent Transportation System (ITS) and Detection

Current ITS infrastructure within the SR-4 corridor includes Ramp Metering (RM) Stations, Traffic Monitoring Stations (TMS), Wireless Magnetometer Vehicle Detection Stations, Changeable Message Signs (CMS), Highway Advisory Radio (HAR), Extinguishable Message Signs (EMS), and Closed-Circuit Television (CCTV) cameras. Caltrans strives for traffic detection to be located at one-third to one half-mile intervals along the corridor. This has been recently achieved with the filling of key gaps in the detection network between I-80 and SR-242, and between Loveridge Road and SR-160.

Land Use & Major Traffic Generators

The SR-4 corridor illustrates a variety of land-uses traveling between the cities of Hercules and Antioch. Low-intensity commercial and residential land-uses are present throughout the suburban landscape of Hercules. As you travel east the landscape fluctuates between watershed, open space, and recreational uses before transitioning to low to moderate levels of residential, commercial and retail environments.

The SR-4 corridor is critical in accommodating longer vehicle trips through Contra Costa County. A larger proportion of vehicle trips along the corridor originate in the suburbs of East Contra Costa County with destinations outside the corridor. Destinations include job centers, airports and entertainment centers located in Central Contra Costa County, Oakland and San Francisco. Land-uses featuring educational institutions, local and regional shopping centers and low-density commercial and retail along and adjacent to the corridor provide significant trip generation along the corridor. Other contributing factors to travel demand in the corridor include interregional and local routes providing network connectivity and access.

Priority Development Areas

In the summer of 2007, local governments in the Bay Area were invited to apply for regional designation of an area within their community as a Priority Development Area (PDA). PDAs are infill development opportunities within existing communities. In the context of SB 375, the PDAs are intended to reduce Greenhouse Gas (GHG) emissions by creating more housing choices in locations easily accessible to transit, jobs, shopping and services. In order to become a planned PDA, an area needs to be within an existing community, near existing or planned fixed transit or served by comparable bus service, and planned for more housing. In 2010, ABAG clarified the definition of "being near transit" to include a threshold for regular bus service of at least every 20 minutes during peak periods. To meet the transit criteria, planned transit stations also had to be identified in the MTC/s Resolution 3434. The transit criteria were further refined to ensure that PDAs were in transit accessible locations.

A potential PDA area may be envisioned as a potential planning area that is not currently identified in a plan or may be part of an existing plan that requires changes. Table 1 lists the potential and planned PDAs along the SR-4 corridor.

Table 1 - SR-4 Corridor PDAs

PDA	Designation
City of Hercules: <i>Central Hercules & Waterfront District</i>	Planned
City of Martinez: <i>Downtown Martinez Intermodal Station Area</i>	Planned
City of Pittsburg: <i>Downtown</i>	Planned
Contra Costa County: <i>Pittsburg/ Bay Point BART Station Area</i>	Planned
City of Concord: <i>Community Reuse Area</i>	Potential
WCCTAC: <i>Pablo Avenue</i>	Planned/Potential
City of Pittsburg: <i>Railroad Avenue eBART Station Area</i>	Potential
City of Antioch: <i>Hillcrest eBART Station Area & Rivertown Waterfront</i>	Potential
City of Oakley: <i>Downtown Focus Area, Employment Focus Area, & Potential Planning Area</i>	Potential

Environmental Constraints/Factors

Portions of SR-4 are in a 100-year flood plain, limiting allowable activities in floodplains unless it is the only practicable alternative. The SR-4 corridor traverses many resource rich areas over its 31 miles. Nine historical bridges are identified along the corridor with a majority of them existing in the older eastern segments of the corridor. Hazardous sites (underground tanks) are also identified along the corridor with the majority clustered around the refinery complexes found near the center and eastern segments of the corridor. Numerous habitats supporting threatened or endangered species are present throughout the corridor with the largest concentrations found near the eastern segments of the corridor nearest the Delta. The Carquinez Strait Regional Shoreline Park and the Black Diamond Mines Regional Preserve are adjacent to the center and eastern segments of the corridor and are considered protected open-space.

Projects

With the assistance of the C-TAC and C-PAC, the study team identified a comprehensive list of all planned and proposed projects³ in the SR-4 corridor. The study team consulted the CSMP as well as a variety of published planning documents in order to identify capital improvements and future operational changes that were relevant to the corridor. Source documents included both project-level studies and area-wide strategic plans produced by jurisdictions along the corridor, the RTPCs, CCTA, MTC, and area transit agencies such as BART, Capitol Corridor, and WestCAT. A summary of the existing studies that were reviewed for this analysis is provided in Appendix A.

The projects were divided into Short-Term and Long-Term projects. Short-Term projects were those that could reasonably be implemented within a near term planning horizon (2015-2020). This group included any projects that are already well advanced in planning, environmental analysis, and/or design, as well as smaller or simpler projects that would not require significant construction time or complex coordination. All other projects were placed into the Long-Term projects group, reflecting the assumption that implementation was more likely to occur a bit further in the future, closer to 2020-2030.

Any identified projects that were noted as approved and fully funded were considered part of the Short-Term future baseline. The remaining projects were listed as potential projects and presented to the stakeholder groups for feedback and refinement. Once the complete list of potential projects was formed, a cost estimate was specified for each project. In most cases, cost estimates were based directly on information contained in the published documents describing the particular project. One major set of projects, known as Scenario 5, required additional engineering and design work to establish a detailed definition and cost estimate. Additional information about project cost estimates is included in Appendix B.

Projects were grouped by planning area: West, Central, and East. In addition, projects that were logically interdependent were grouped together, so that they could be analyzed as one project during the performance assessment. Specifically, projects were grouped based on the likelihood that the various project components would be constructed simultaneously (e.g., SR-4 widening projects in both eastbound and westbound directions) or when projects can be grouped into a single program (e.g., ramp metering). Each section below discusses the final list of Short-Term and Long-Term projects in each planning area, including a detailed project listing and locator maps.

West County

Two sets of projects for West County were carried forward directly from the CSMP: West County ITS Installations (FPI/CSMP #1-3) and West County Ramp Metering (FPI/CSMP #13-14). Consistent with the low levels of congestion currently seen on SR-4 in West County, the remainder of the Short-Term projects focuses on enhancing transit connections to and through SR-4. Figure 1 shows the Short-Term and Long-Term projects for West County.

³ For the purposes of this report, "projects" refers to capital improvement projects, operational projects, and transportation mitigation programs, actions, measures and projects aimed at improving corridor performance.

Central County

A total of eight improvements for Central County were brought forward from the CSMP. Grouped within projects, they are:

- Central County ITS Installations (FPI/CSMP #1-3)
- SR-4 EB Widening from I-680 to Willow Pass Road (East) (FPI/CSMP #7, 8, and 12)
- SR-4 WB Widening from Willow Pass Road (East) to I-680 (FPI/CSMP #6 and 9)

In addition to these mainline packages, stakeholders in Central County also helped to define a more explicit phasing and implementation scenario for future improvements to the I-680/SR-4 interchange. A related package of improvements was identified to build on the refined I-680/SR-4 interchange improvements. Collectively referred to as Scenario 5, this package would adjust ramp configurations and add eastbound lanes between the northbound I-680 on-ramp and San Marco Boulevard on-ramp.⁴ Finally, the study team also identified key transit projects in Martinez and Pittsburg/Bay Point and multiple improvements on adjacent arterials. Figures 2, 3, 4, and 5 show the Short-Term and Long-Term projects for Central County.

East County

For the purposes of this study, projects that are already well underway and expected to be completed prior to 2015 are included in the baseline conditions. These include the following:

- the 8-lane widening of SR-4 east, from Loveridge Road to SR-160
- e-BART from the West Pittsburg/Bay Point Station to Hillcrest Avenue, and
- the widening from 2-to-4 lanes of the SR-4 Bypass from Lone Tree Way to Balfour Road (Segment 2).

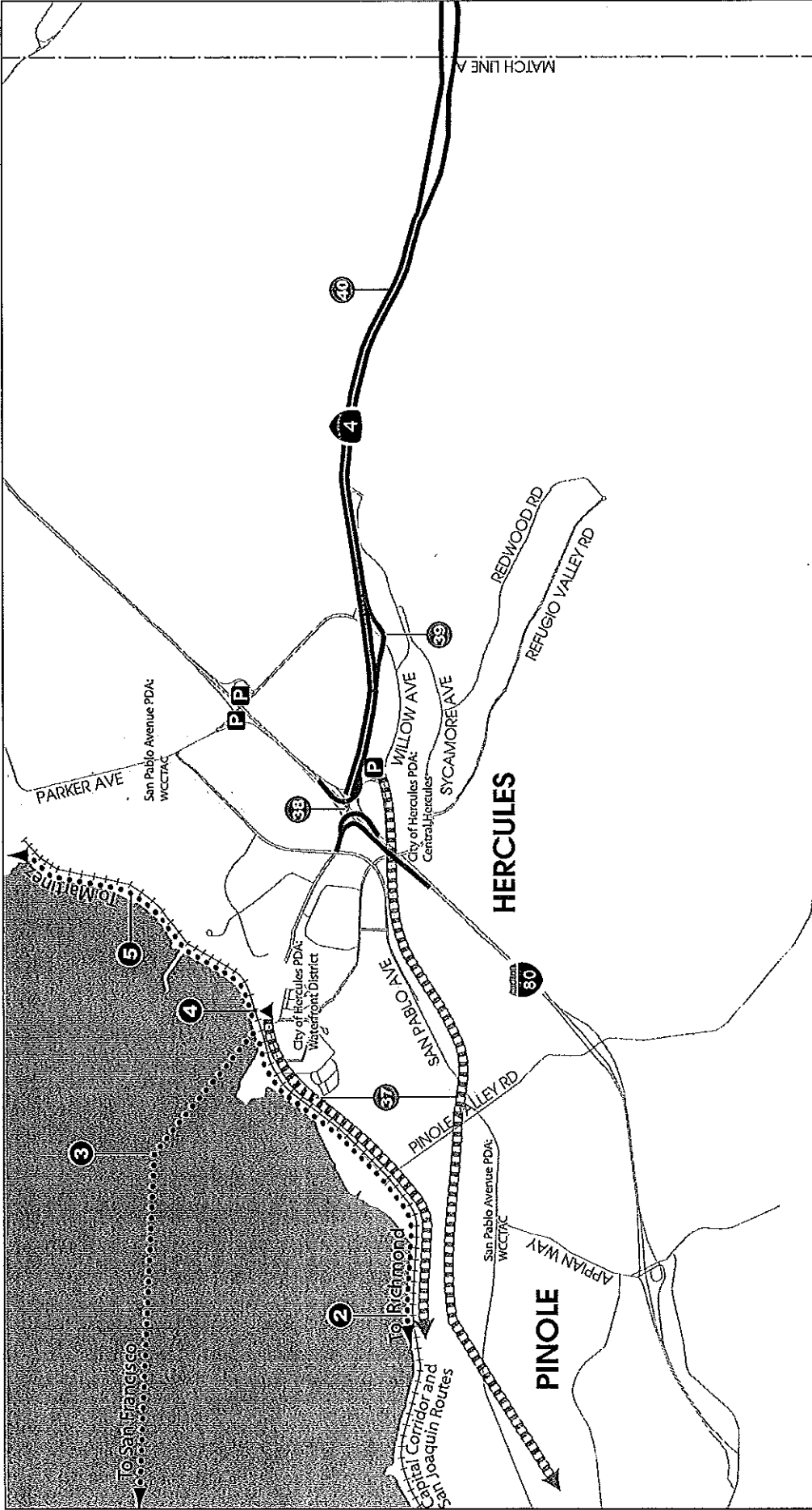
Three sets of projects for East County are items that were carried forward directly from the CSMP:

- East County ITS Installations (FPI/CSMP #1-3)
- East County Ramp Metering (FPI/CSMP #4-7)
- SR-4 Ramp Metering (FPI/CSMP #13-14)

In addition to these traffic management projects on SR-4, East County stakeholders helped to identify numerous projects on parallel arterials, including the Kirker Pass Truck Climbing Lane, improvements to arterial signals and intersections, widening of several key parallel arterials, and additional construction phases of the SR-4 Bypass. Figures 4, 5, 6, and 7 show the Short-Term and Long-Term projects for East County.

⁴ See Chapter 5 for a detailed description of Scenario 5.

Figure 1 - West County Project Strategies



Short-Term:

- 1. <Not illustrated> Fill gaps in the current and programmed ITS installations, and extend ITS coverage to the full corridor (FPI/CSMP #1-3).
- 2. Increased Richmond-Hercules service along the existing Capitol Corridor rail line.
- 3. Hercules Ferry Service from Hercules to San Francisco.
- 4. Hercules Intermodal Transit Station construction to serve the Capital Corridor and future Ferry Service.
- 5. Increased Hercules-Martinez service along the existing Capitol Corridor rail line.

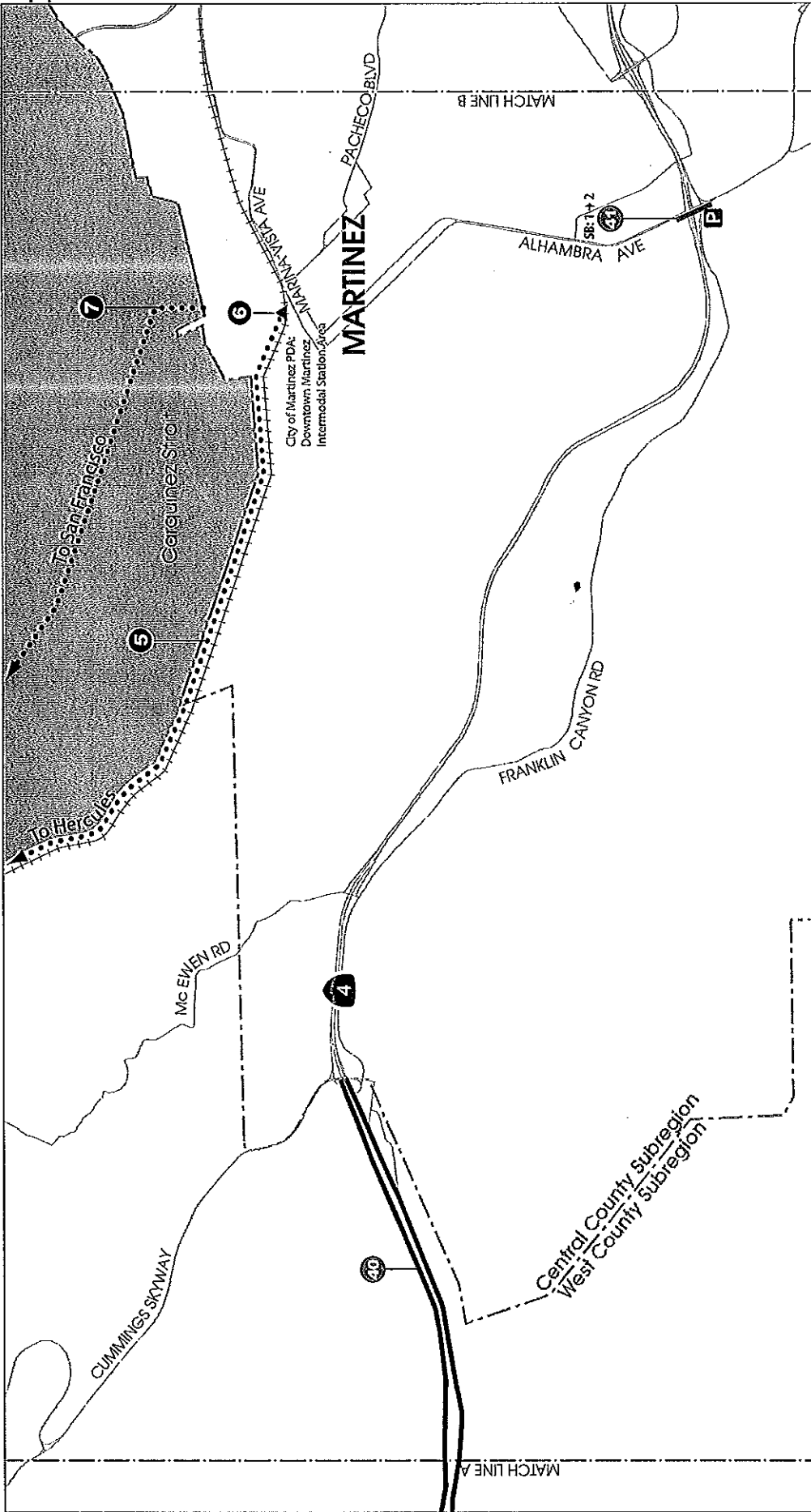
Long-Term:

- 36. <Not illustrated> SR-4 EB and WB Ramp Metering between I-80 and I-680 (FPI/CSMP #13-14).
- 37. wBART - Operate rail services from Hercules to the Richmond BART station. (Exact alignment TBD.)
- 38. Ultimate I-80/SR-4 interchange improvements - Widen I-80 WB on-ramp from 1 to 3 lanes at John Muir Parkway and construct flyover connector ramps from NB I-80 to WB SR-4 and from SB I-80 to EB SR-4.
- 39. Willow Ave Ramp Replacement - reconstruct the WB ramps as diagonal ramps.
- 40. State Route 4 West, Phase 2 - Upgrade SR-4 from an expressway to a freeway between I-80 and Cummings Skyway.

Legend:

- Existing Roadway
- Existing Passenger Rail
- Existing Park & Ride Facility
- Priority Development Area (PDA)
- Roadway Improvement (Short-Term)
- Roadway Improvement (Long-Term)
- Transit Improvement (Short-Term)
- Transit Improvement (Long-Term)
- Intersection/Interchange Improvement (Short-Term)
- Intersection/Interchange Improvement (Long-Term)
- Transit Improvement (Station)

Figure 2 - West and Central County Project Strategies 1-14

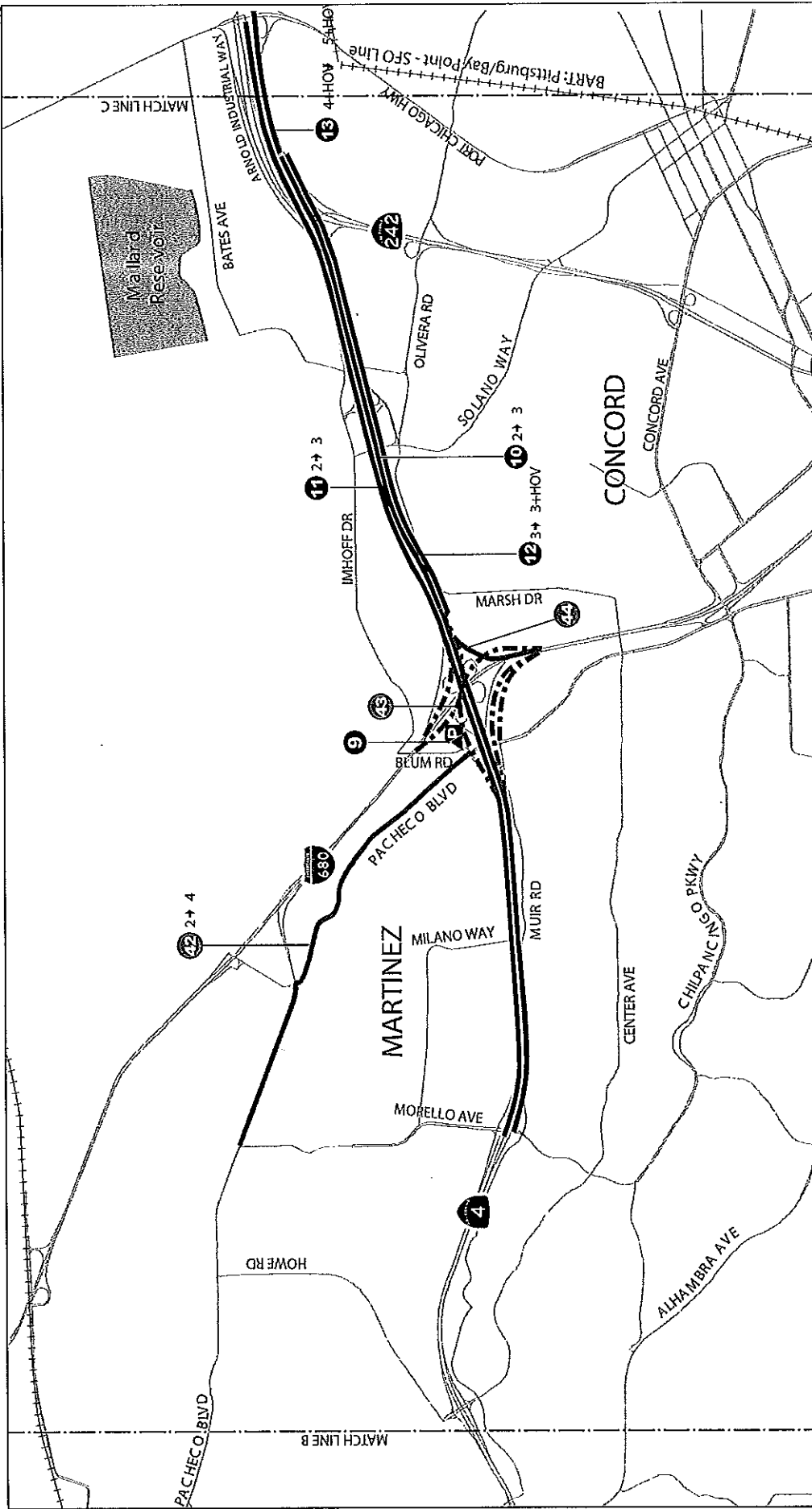


- Short-term:**
- <Not illustrated> Fill gaps in the current and programmed ITS installations, and extend ITS coverage to the full corridor (FPI/CSMP #1-3).
 - Increased Hercules-Martinez service along the existing Capitol Corridor rail line.
 - Martinez Intermodal Station (Phase 3) - 425 parking spaces, vehicles, and pedestrian bridges.
 - Martinez Ferry Service between Martinez and San Francisco.
- Long-term:**
- <Not illustrated> SR-4 EB and WB Ramp Metering between I-80 and I-680 (FPI/CSMP #13-14).
 - State Route 4 West, Phase 2 - Upgrade SR-4 from an expressway to a freeway between I-80 and Cummings Skyway.
 - Alhambra Ave Safety Improvements: Construct a 2nd SB lane from Walnut Ave to Franklin Canyon Rd.

- Existing Roadway
- Existing Passenger Rail
- Existing Park & Ride Facility
- Priority Development Area (PDA)
- Roadway Improvement (Short-Term)
- Roadway Improvement (Long-Term)
- Transit Improvement (Short-Term)
- Transit Improvement (Long-Term)
- Intersection/Interchange Improvement (Short-Term)
- Intersection/Interchange Improvement (Long-Term)
- Transit Improvement (Station)

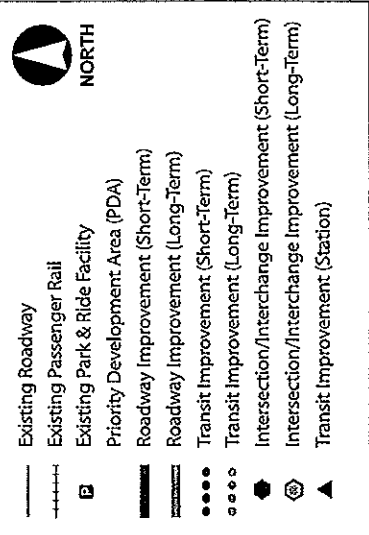
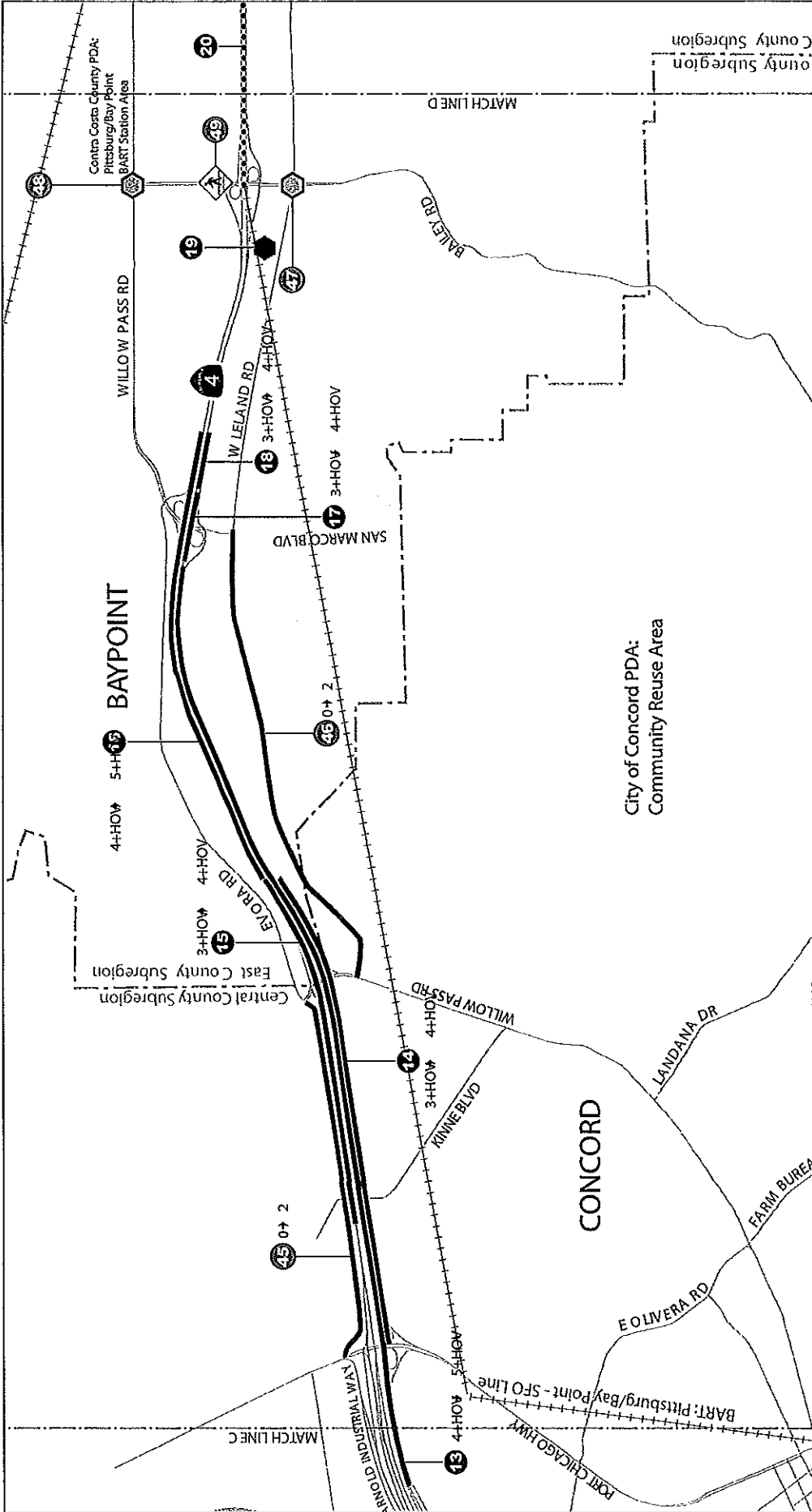


Figure 3 - Central County Project Strategies



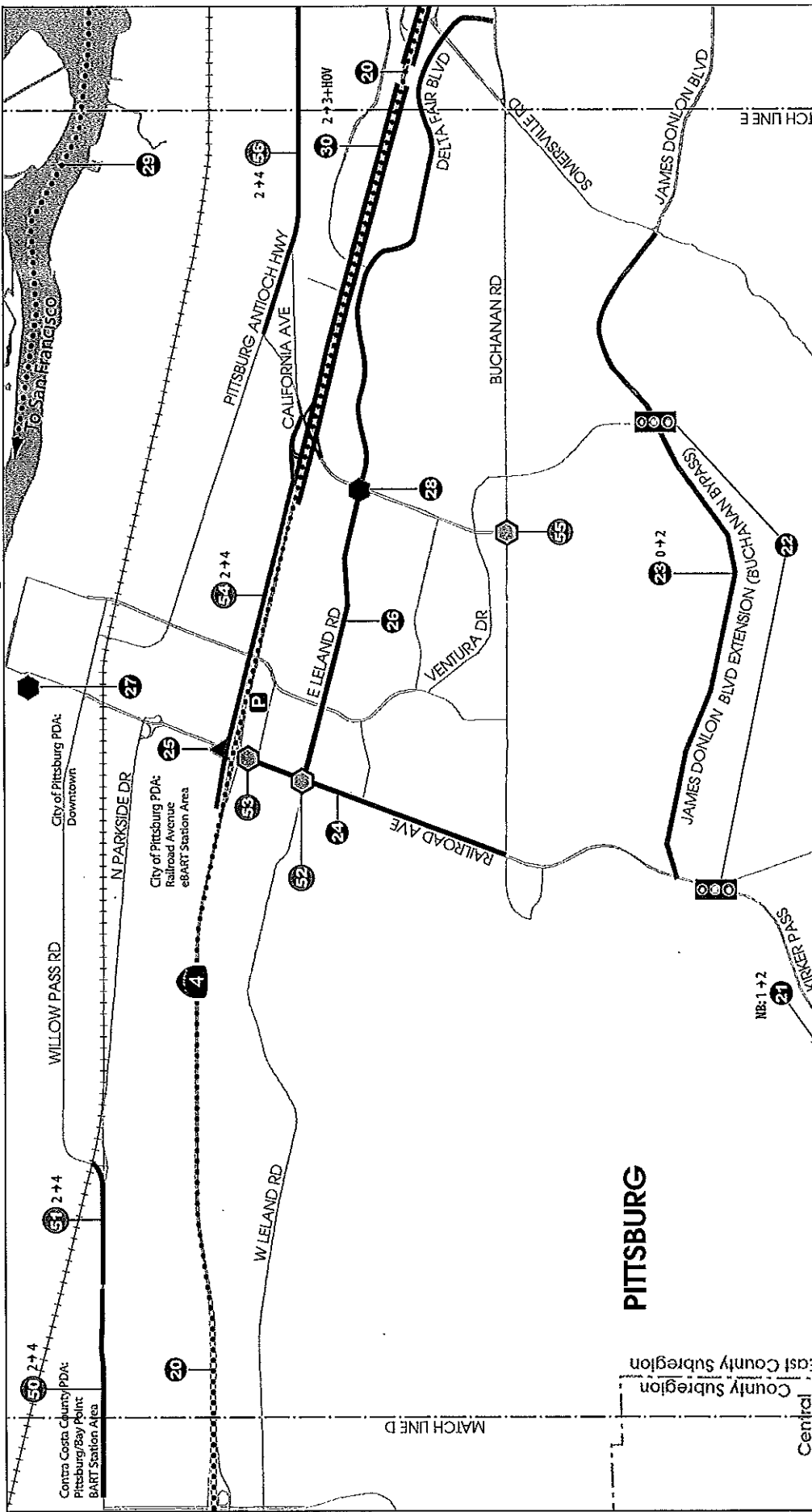
- Short-Term:**
- <Not illustrated> Fill gaps in the current and programmed ITS installations, and extend ITS coverage to the full corridor (FPI/CSMP #1-3).
 - <Not illustrated> SR-4 EB and WB Ramp Metering between I-680 and SR 160 (FPI/CSMP #4, #7).
 - Pacheco Transit Hub - construction of a transit hub with 6 bus bays and 110 parking spaces.
 - I-680/SR-4 Interchange Improvement Project - Interim Phase III ("sooner, cheaper") - 3rd EB inside mixed-flow lane (inside from Morello Ave to east of SR 242.
 - I-680/SR-4 Interchange Improvement Project - Add a 3rd WB mixed-flow lane from the SR-242 off-ramp to Morello Ave.
- Long-Term:**
- EB HOV lane from NB I-680 on-ramp to the start of the HOV lane 1,500 feet west of Port Chicago Highway off-ramp. (Scenario 5)
 - EB mixed-flow lane from east of SR-242 on-ramp to San Marco Blvd off-ramp. (Scenario 5)
 - <Not illustrated> SR-4 EB and WB Ramp Metering between I-80 and I-680 (FPI/CSMP #13-14).
 - Pacheco Boulevard Widening from 2 to 4 lanes from Blum Rd to Morello Ave with a new railroad overcrossing.
 - I-680/SR-4 Interchange Improvement Project - Phases I, II, IV, V - Construct direct connector ramps for the interchange.
 - I-680/SR-4 Interchange HOV direct connector ramp. (NB I-680 to EB SR-4)
- Legend:**
- Existing Roadway
 - Existing Passenger Rail
 - Existing Park & Ride Facility
 - Priority Development Area (PDA)
 - Roadway Improvement (Short-Term)
 - Roadway Improvement (Long-Term)
 - Transit Improvement (Short-Term)
 - Transit Improvement (Long-Term)
 - Intersection/Interchange Improvement (Short-Term)
 - Intersection/Interchange Improvement (Long-Term)
 - Transit Improvement (Station)

Figure 4 - Central and East County Project Strategies



- Short-Term:**
- <Not illustrated> Fill gaps in the current and programmed ITS installations, and extend ITS coverage to the full corridor (FPI/CSMP #1-3).
 - <Not illustrated> SR-4 EB and WB Ramp Metering between I-680 and SR 160 (FPI/CSMP #4, #7).
 - EB mixed-flow lane from east of SR-242 on-ramp to San Marco Blvd off-ramp. (Scenario 5)
 - Extend the EB mixed flow lane from the lane drop at Port Chicago Hwy to Willow Pass Rd (West) on-ramp (FPI/CSMP #8).
 - Extend the WB mixed-flow lane from its start east of Port Chicago Hwy to Willow Pass Rd (West) off-ramp (FPI/CSMP #6).
 - Extend the existing WB mixed-flow lane from the lane drop east of Willow Pass Rd (East) off-ramp to the Willow Pass Rd (West) off-ramp (FPI/CSMP #9).
 - EB mixed-flow lane from San Marco Blvd off-ramp to San Marco Blvd on-ramp. (Scenario 5)
- Long-Term:**
- Extend the existing EB mixed-flow lane from Willow Pass Rd (East) to the lane located east of Willow Pass Rd (East) (FPI/CSMP #12).
 - Pittsburg/Bay Point BART Station Area - Expanded parking.
 - East Contra Costa BART Extension (eBART) from the Pittsburg/Bay Point BART Station to Hillcrest Ave.
 - Parallel Arterial Improvements - Extend Evora Rd from Willow Pass Rd to Port Chicago Hwy.
 - Parallel Arterial Improvements - Extend West Leland Rd to Willow Pass Rd.
 - Bailey Rd/Leland Rd Intersection Improvements.
 - Bailey Rd/Willow Pass Rd Intersection Improvements.
 - Bailey Rd Pedestrian Interchange Improvements and Design Modifications.

Figure 5 - Central and East County Project Strategies



Short-Term:

- <Not illustrated> Fill gaps in the current and programmed ITS installations, and extend ITS coverage to the full corridor (FPI/CSMP #1-3).
- <Not illustrated> SR-4 EB and WB Ramp Metering between I-680 and SR 160 (FPI/CSMP #4, #7).
- East Contra Costa BART Extension (eBART) from the Pittsburg/Bay Point BART Station to Hillcrest Ave.
- Kirker Pass Rd Truck Climbing Lane from Clearbrook Drive to 1000' east of E Hess Rd (NB), (Central County project).
- Control Point Metering at Kirker Pass Rd/Nortonville Rd and James Donlon Blvd/Ventura Rd.
- James Donlon Blvd Extension between Somerville Rd and Kirker Pass Rd. Construct new two-lane roadway, 2.2 miles in length with a 60 mph design speed.
- Arterial Signalization Improvements on Railroad Ave.
- Railroad Ave eBART Station construction, Station area improvements, and transit access improvements.

Long-Term:

- Willow Pass Rd Widening from Bailey Rd to Pittsburg City Limits.
- Willow Pass Rd Widening from Range Rd to Loftus Rd.
- Railroad Ave/Leland Rd Intersection Improvements.
- Railroad Ave/EB SR-4 Ramps Intersection Improvements.
- California Ave Widening from Railroad Ave to Loveridge Rd.
- Buchanan Rd/Loveridge Rd Intersection Improvements.
- Pittsburg-Antioch Hwy Widening from 2 to 4 lanes between Somersville and Loveridge Rd.

26. Communication equipment for signal synchronization on E Leland Rd and Delta Fair Blvd.

27. Downtown Pittsburg connections to future eBART Railroad Ave Station. 28. Loveridge Rd/Leland Rd Intersection Improvements.

29. Antioch Ferry Service to San Francisco.

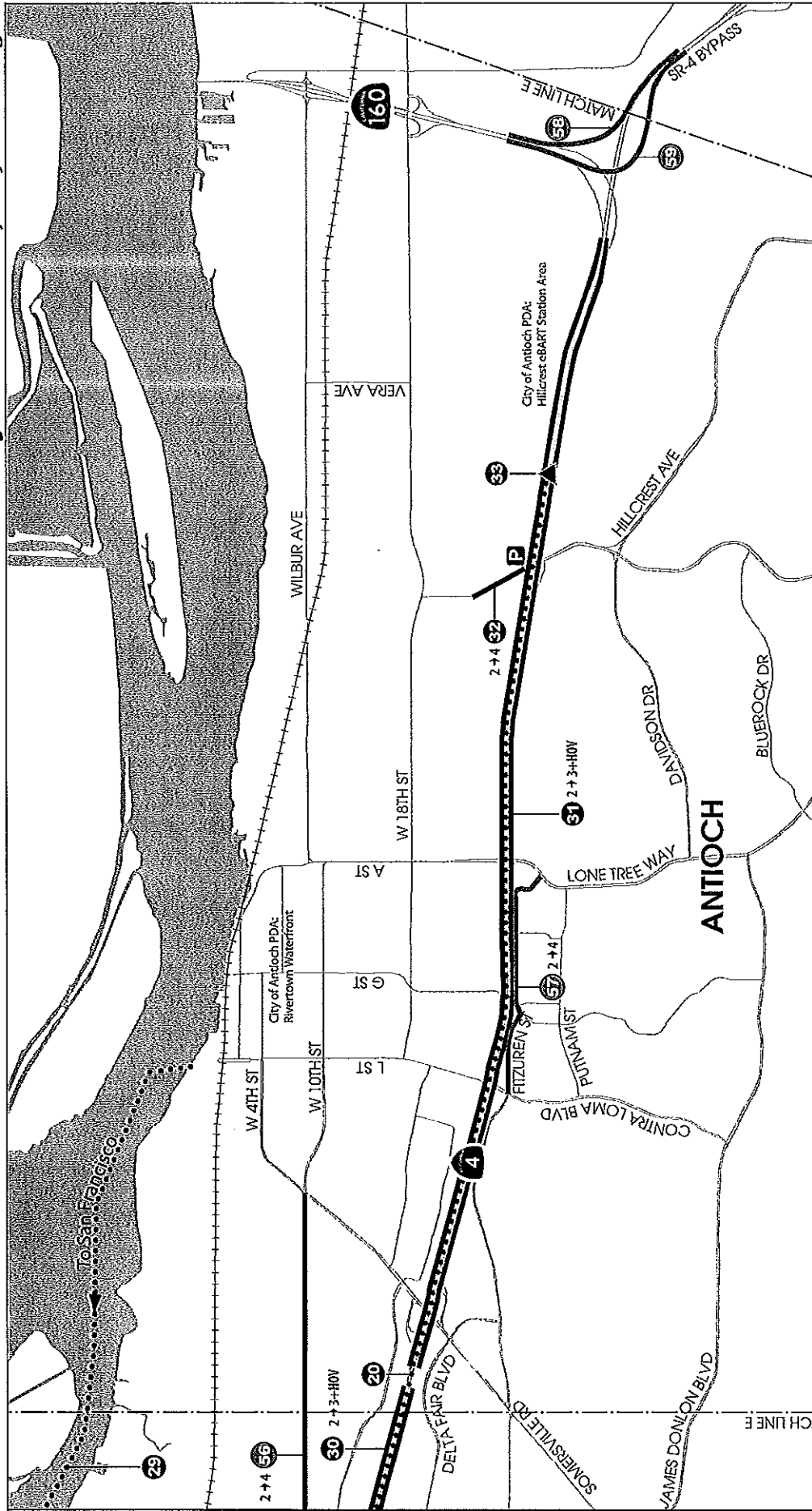
30. SR-4 East Widening from 2 lanes to 3 lanes + 1 HOV lane in each direction between Loveridge Rd and Somersville Rd.

Legend:

- Existing Roadway
- - - - Existing Passenger Rail
- ▢ Existing Park & Ride Facility
- ▬ Priority Development Area (PDA)
- ▬ Roadway Improvement (Short-Term)
- ▬ Roadway Improvement (Long-Term)
- Transit Improvement (Short-Term)
- Transit Improvement (Long-Term)
- ⊕ Intersection/Interchange Improvement (Short-Term)
- ⊕ Intersection/Interchange Improvement (Long-Term)
- ▲ Transit Improvement (Station)

NORTH

Figure 6 - East County Project Strategies 1-18



Legend:

- Existing Roadway
- Existing Passenger Rail
- Existing Park & Ride Facility
- Priority Development Area (PDA)
- Roadway Improvement (Short-Term)
- Roadway Improvement (Long-Term)
- Transit Improvement (Short-Term)
- Transit Improvement (Long-Term)
- Intersection/Interchange Improvement (Short-Term)
- Intersection/Interchange Improvement (Long-Term)
- Transit Improvement (Station)

North Arrow: NORTH

- Short-Term:**
- <Not illustrated> Fill gaps in the current and programmed ITS installations, and extend ITS coverage to the full corridor (FPI/CSMP #1-3).
 - <Not illustrated> SR-4 EB and WB Ramp Metering between I-680 and SR 160 (FPI/CSMP #4, #7).
 - East Contra Costa BART Extension (eBART) from the Pittsburg/Bay Point BART Station to Hillcrest Ave.
 - Antioch Ferry Service to San Francisco.
 - SR-4 East Widening from 2 lanes to 3 lanes + 1 HOV lane in each direction between Loveridge Rd and Somersville Rd.
 - SR-4 East Widening from 2 lanes to 3 lanes + 1 HOV lane in each direction between Somersville Rd and SR 160.
- Long-Term:**
- Widen Hillcrest Ave from 2 to 4 lanes between SR-4 and 18th St.
 - Antioch eBART Station construction and restructuring of Route 300 express service.
 - Pittsburg-Antioch Hwy Widening from 2 to 4 lanes between Somersville and Loveridge Rd.
 - West Tregallas Rd/Fitzuen Rd Widening from 2 to 4 lanes.
 - SR-4 Bypass/SR-160 Northbound Connector.
 - SR-4 Bypass/SR-160 Southbound Connector

Section 2: Performance Assessment Measures

One of the key themes that emerged from the CSMP was the need to evaluate potential improvements in the SR-4 corridor using a broad set of performance measures. There was a clear recognition that quantitative mobility metrics are not the only important decision-making criteria, and that some qualitative measures are also necessary in order to capture the multi-dimensional nature of stakeholders' policy considerations. Through meetings of the C-TAC and C-PAC, stakeholders provided feedback on the proposed evaluation criteria, leading to a final list of fourteen metrics. This chapter provides definitions for each of the criteria and a discussion of the relevant analytical methods used for each item. Performance results, by metric, for each planning area are described in the next chapter.

Quantitative Measures

The quantitative metrics primarily focus on mobility improvements within the corridor and the relative cost of achieving those improvements, also referred to as cost-effectiveness. The mobility metrics described below are computed based on output from FREQ – a traffic operations model that combines forecast traffic volumes and vehicle occupancy⁵ together with roadway geometries to analyze future performance of the mainline facility in real time.

To provide appropriate evaluation of the Short-Term and Long-Term groups of projects, quantitative results were generated for 2015 and 2030, respectively. The current planned and funded improvements in the corridor are included in the default scenario for 2015 and 2030, which is used to produce the baseline performance results for each of the three mobility metrics: average speed, average travel time, and annual person hours of delay.⁶ Each proposed strategy or package is separately tested in FREQ, and the new results are compared to the baseline in order to determine the change in performance that is attributable to each of the projects. The baseline results used for this study are presented below in Table 2.

Table 2 - Future Baseline Conditions

	2015		2030	
	<i>Average Speed (mph)</i>	<i>Average Travel Time (min)</i>	<i>Average Speed (mph)</i>	<i>Average Travel Time (min)</i>
West	50	5	44	6
Central	38	32	31	66
East	53	28	41	55

Average Speed (mph) and Average Travel Time (min)

Average speed is computed by averaging the travel speed during the peak hour from each roadway segment within the county sub area (West, Central, or East). Average travel time is derived by combining the average speed in each planning area and the length of SR-4 located within that planning area. Both figures are composite values for all vehicles on the facility, in both mainline lanes and HOV lanes.

⁵ Future traffic volumes and vehicle occupancy for 2015 and 2030 were obtained from the CCTA travel demand model.

⁶ Annual person hours of delay were calculated for the SR-4 corridor (3,477,138 in the Short-Term) and (13,594,035 in the Long-Term).

Annual Reductions in Total Delay

Total person hours of delay is comprised of both recurrent and non-recurrent delay. Recurrent delay represents the difference between typical projected travel speeds along the corridor and free-flow speeds (70 mph). Non-recurrent delay represents the additional delay incurred due to accidents, incidents, and other unusual conditions which periodically interfere with normal operations of the facility. Delay from both sources is summed across all vehicles over the entire day and then annualized, using occupancy factors to convert vehicle-hours of delay to person-hours of delay. The reduction in annual delay that is attributable to each strategy or package is expressed in hours, and is comparable to the baseline hours of delay.

Project Cost and Cost Effectiveness

As described previously, each project, strategy, or package was assigned a cost estimate, either based directly on published documentation about the proposed improvements or based on study team review. Details about the cost estimates for each project are provided in Appendix B. The evaluation matrix lists the total cost for each project in 2011 dollars. In addition, a cost-effectiveness metric is computed by dividing the total cost by the reduction in hours of delay. The cost-effectiveness metric helps compare different sized projects, because different types of improvements may have disproportionate levels of benefit to the corridor.

The cost-effectiveness analysis expresses benefits (savings in delay) in a format (\$/hour) that can be easily related to a user's perception of their value-of-time which is ephemeral and typically varies by trip purpose. Typically, value-of-time ranges from \$5 to \$50 where the lower end of the spectrum represents trips similar to recreational trips and the higher value represents trips similar to commercial vehicle trips. In general, the average value of-time for travel in the Bay area is between \$14 and \$15. Improvement strategies with an estimated rating of \$15 or less per hour of delay saved can be thought of as cost-effective in that the cost to construct and maintain the strategy is offset by user cost benefits.

Qualitative Measures

Based on consultation with the C-TAC, a list of qualitative measures was developed to capture whether each project has potential benefits that cannot be derived from standard outputs of transportation models. Most of the qualitative measures represent specific aspects of local and regional policy goals, such as improving access or reducing emissions. The evaluation process involved rating each strategy or package on whether it would be "more favorable", "favorable", or "less favorable" to achieving the particular goal.

System Continuity

The goal of system continuity is to achieve a network of roadway, transit, bicycle, pedestrian, and goods movement facilities that is well connected throughout the corridor, allowing for efficient movements by users within each mode and effective connections between modes.

Improve Multimodal Access, Mobility, and Reliability

This category of improvements specifically focuses on calling out mode-specific benefits of particular projects by highlighting benefits in each the following areas:

- Freeway operational improvements
- Transit service enhancements/improvements
- Transit speed improvements
- Efficiency improvements through use of signal timing and ramp metering
- Increases in walking and biking (mode share for public transit and non-motorized modes)

Sustainable Community Strategy (SCS) and Community Goals

As described in the Introduction, two major pieces of state legislation (AB 32 and SB 375) require that MTC and ABAG collaborate to develop an integrated land-use and transportation plan known as SCS, and incorporate it into the Regional Transportation Plan. These regional agencies have recognized that reducing VMT is going to be a necessary and critical component of any plan that is capable of successfully meeting the GHG-reduction targets set in AB 32. As a result, there is increased regional attention on VMT, emissions, and jobs-housing balance, and this study seeks to make a preliminary evaluation of how well the candidate projects can serve these regional goals:

- Better access to jobs and housing
- Reduced Vehicle Miles Traveled (VMT)
- Reduced per-capita CO2 emissions
- Reduced particulate emissions

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Section 3: Corridor Performance Results

This section describes highlights of the corridor performance assessment conducted using the metrics discussed above. The discussion is organized by planning area and divided into Short-Term (2015-2020) and Long-Term (2020-2030) in each planning area. Detailed evaluation matrices are provided in Appendix B.

A few general observations can be made about the results across the entire corridor. First, given its low cost and ability to mitigate non-recurrent delay, ITS projects perform well in all planning areas. Ramp metering also provides cost-effective benefits to both quantitative and qualitative performance.

West County Performance Assessment

Given the relatively low levels of traffic congestion on the west segment of SR-4, projects in this planning area generally do not result in significant changes to baseline performance. Average speed and average travel time for all projects and packages are the same as for future baseline levels. Most projects in West County result in relatively small reductions in delay, but again, this is attributable to the current lack of congestion and delay on this segment of SR-4.

Short-Term 2015 – 2020

All Short-Term projects in West County produce modest reductions in total delay, typically less than 5,000 hours per year, or less than 0.2% of 2015 baseline levels in the SR-4 corridor. All three packages are rated as "more favorable" to at least one of the multi-modal criteria, as shown in Table 3.

Long-Term 2020 – 2030

The Long-Term projects in West County result in somewhat higher absolute levels of delay reduction, but the total level of delay in the SR-4 corridor also increases in the Long-Term, so that most projects still result in less than 1% fewer hours of delay than the 2030 baseline. The one exception is West County Ramp Metering (ID #36), which provides 615,082 hours of delay reduction, an improvement of 4.5% for the corridor. This strategy is also among the most cost-effective projects in the entire corridor, requiring only \$0.30 per person-hour of delay saved. As in the Short-Term group, all projects are "more favorable" to at least one of the multi-modal criteria. In addition, two projects are "more favorable" for all of the SCS metrics: West County Ramp Metering (ID#36) and Willow Ave Ramp Replacement (ID#39), as shown in Table 4.

Many of the transit-related projects in West County do not have a strong impact on performance in the SR-4 corridor. This is largely because the transit network is primarily oriented north-south along the I-80 corridor rather than serving the east-west movements that parallel the SR-4 freeway. To ensure the West County performance assessment results are not interpreted as an indication that transit projects are not important or beneficial for the West County planning area, project rankings for transit project along I-80 are not presented. More details on the West County performance assessment is provided in Appendix B.

Central County Performance Assessment

Results in Central County are highly varied across the different projects and packages, with some items standing out as the best performers in the entire corridor, and others producing only minor changes to baseline conditions.

Short-Term 2015 – 2020

The quantitative results for the Short-Term projects range from a 0.1% reduction to an 83% reduction in annual hours of delay. The latter package is the SR-4 Widening from I-680 to Willow Pass Road (East), and is composed of 10 projects in total (ID#8 and 10-18). This package raises the average speed in the Central County portion of SR-4 from 38 m.p.h. to 59 m.p.h., which is nearly the same as free-flow speeds. In addition, the package reduces average travel time by 50%. This package also performs extremely well on the qualitative analysis, being rated as "more favorable" to all criteria except for "increase walking and biking" which is rated as "less favorable". This package is ranked number 1, see Table 5. The other three Short-Term packages have mixed qualitative results, scoring "more favorable" on at least one of the multi-modal criteria and "favorable" on one or more of the SCS criteria, as shown in Table 5.

Long-Term 2020 – 2030

In the Long-Term group, quantitative results are equally varied, but slightly lower in magnitude. Three sets of projects are related to improving arterial facilities near SR-4. The Parallel Arterial Improvements on Evora Road (ID#45) and West Leland Road (ID#46) together result in nearly 1 million hours of delay reduction, or a savings of nearly 7% for the corridor as a whole compared to the 2030 baseline. The other two arterial projects are Alhambra Ave Safety Improvements (ID#41) and Pacheco Boulevard Widening (ID#42). Neither project results in delay reductions on the SR-4 mainline and they also have relatively low qualitative results, rating as "less favorable" in nearly all categories, as shown in Table 6.

The package of improvements for the I-680/SR-4 Interchange (ID#43 & 44) has strong results on both quantitative and qualitative metrics and is ranked as number 1. Together they improve average speed from the 2030 baseline of 31 m.p.h. to 44 m.p.h., reduce delay by 1,980,000 hours per year, and reduce average travel time by 25%. This package is also rated as "most favorable" on all criteria except signal timing/ramp metering and walking/biking, as shown in Table 6.

More details on Central County projects performance assessment are provided in Appendix B.

Table 3 - Short-Term West County Projects

Year	ID	Project	Performance Measures on SR-4										Quantitative Measures		
			Qualitative Measures					SCS					Mobility Improvements		
			Multi-Modal Access, Mobility, and Reliability		Reduce VMT			Cost Effectiveness		Annual Reductions in Total Delay (Recurrent and Non-Recurrent - hh)					
			System Continuity	Freeway Operational Improvement	Enhance Transit Service	Improve Transit Speed	Improve Efficiency Through Signal Timing and Ramp Metering	Better Access to Jobs and Housing	Reduce per-capita CO ₂ Emissions	Reduce Particulate Emissions	Increase Walking and Biking	Annual Reductions in Total Delay (Recurrent and Non-Recurrent - hh)	Cost Effectiveness		
		West County ITS Installations:	●	●	○	○	●	●	○	○	○	Base: 3,177,133	\$1.26 per person-hour of delay saved		
	1	Fill gaps in the current and programmed, and extend ITS coverage to the full corridor (PPI/CSSMP #1-3).	●	●	○	○	●	●	○	○	○	1,345*	\$1.26 per person-hour of delay saved		
		Capitol Corridor Service:													
	2	Increased Richmond-Hercules service along the existing Capitol Corridor rail line.	●	○	●	●	○	●	○	○	○	1,741	\$1,670 per person-hour of delay saved		
	5	Increased Hercules-Martinez service along the existing Capitol Corridor rail line.													
		Hercules Ferry Service and Intermodal Station:													
	3	Hercules Ferry Service from Hercules to San Francisco.	●	○	○	○	○	●	○	○	○	4,351	\$645 per person-hour of delay saved		
	4	Hercules Intermodal Transit Station construction to serve the Capital Corridor and future Ferry Service.	●	○	○	○	○	○	○	○	○				

Projects may be rearranged in the future as project development occurs and funding plans are identified.

Subject to review by the RTPOs.

LEGEND:

Qualitative:

● "More Favorable" ○ "Loss Favorable"

* Note: Non-recurrent

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Table 4 - Long-Term West County Projects

Year	ID	Project	Qualitative Measures										Quantitative Measures						
			System Continuity	Freeway Operational Improvement	Enhance Transit Service	Improve Transit Speed	Improve Efficiency Through Signal Timing and Ramp Metering	Better Access to Jobs and Housing	Reduce per-capita CO ₂ Emissions	Reduce Particulate Emissions	Increase Walking and Biking	Annual Reductions in Total Delay (Recurrent and Non-Recurrent, hr)	Cost Effectiveness						
		West County Ramp Metering:	●	●	○	○	●	●	○	○	○	○	○	○	○	○	○	○	○
	36	SR-4 EB and WB Ramp Metering between I-80 and I-680 (FP/CSMP #13-14).	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		wBART:	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	37	Operate rail services from Hercules to the Richmond BART station.	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		Ultimate I-80/SR-4 Interchange Improvements:	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	38	Widen I-80 WB on-ramp from 1 to 3 lanes at John Muir Parkway and construct flyover connector ramps from NB I-80 to WB SR-4 and from SB I-80 to EB SR-4.	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		Willow Ave Ramp Replacement:	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	39	Reconstruct the WB ramps as diagonal ramps.	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		State Route 4 West, Construct to full Freeway Standards:	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	40	Upgrade SR-4 from an expressway to a freeway between I-80 and Cummings Skyway.	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Projects may be rearranged in the future as project development occurs and funding plans are identified.

Subject to review by the RTPCs.

LEGEND:

Qualitative:

● More Favorable ○ Favorable ○ Less Favorable

* Note: Non-recurrent

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Table 5 - Short-Term Central County Projects

Year	ID	Project	Performance Measures on SR-4										Rank				
			Qualitative Measures					Quantitative Measures									
			System Continuity	Freeway Operational Improvement	Enhance Transit Service	Improve Transit Speed	Improve Efficiency Through Signal Timing and Ramp Metering	Better Access to Jobs and Housing	Reduce per-capita CO ₂ Emissions	Reduce VMT	Increase Walking and Biking	Annual Reductions in Total Delay (Recurrent and Non-Recurrent-hh)		Cost Effectiveness			
	8	SR-4 EB Widening from I-680 to Willow Pass Rd (East); SR-4 EB and WB Ramp Metering between Alhambra Ave and Willow Pass Rd (FPI/CSSMP #7).															
	18	Extend the existing EB mixed-flow lane from Willow Pass Rd (East) to the lane located east of Willow Pass Rd (East) (FPI/CSSMP #12).															
	17	EB mixed-flow lane from San Marco Blvd off-ramp to San Marco Blvd on-ramp (Scenario 5).															
	14	Extend the EB mixed flow lane from the lane drop at Port Chicago Hwy to Willow Pass Rd (West) on-ramp (FPI/CSSMP #8).															
	13	EB mixed-flow lane from east of SR-242 on-ramp to San Marco Blvd off-ramp (Scenario 5).															
	10	I-680/SR-4 Interchange Improvement Project - Phase III ("sooner, cheaper") - 3rd EB mixed-flow (inside) lane from Morello Ave to east of SR 242.															
	12	EB HOV lane from NB I-680 on-ramp to the start of the HOV lane 1,500 feet west of Port Chicago Highway off-ramp (Scenario 5).															
	11	SR-4 WB Widening from Willow Pass Rd (East) to I-680; I-680/SR-4 Interchange Improvement Project - Phase III - 3rd WB mixed-flow (inside) lane from SR-242 off-ramp to Morello Ave.															
	15	Extend the existing WB mixed-flow lane from the Willow Pass Rd (West) off-ramp to the lane-add east of Port Chicago Hwy off-ramp (FPI/CSSMP #6).															
	16	Extend the existing WB mixed-flow lane from the lane drop east of Willow Pass Rd (East) off-ramp to Willow Pass Rd (West) off-ramp (FPI/CSSMP #8).															
	1	Central County ITS installations: Fill gaps in the current and programmed, and extend ITS coverage to the full corridor (FPI/CSSMP #-1-3).															
	6	Martinez Ferry Service and Intermodal Station; Martinez Intermodal Station (Phase 3) - 425 parking spaces, vehicles, and pedestrian bridges.															
	7	Ferry service between Martinez and San Francisco.															
	21	Kifer Pass Rd Truck Climbing Lane; From Clearbrook Drive to 1000' east of E Hess Rd (NB).															

Projects may be rearranged in the future as project development occurs and funding plans are identified. Subject to review by the RTPCs.

LEGEND:

Qualitative:

● "More Favorable" ○ "Less Favorable"

* Note: Non-recurrent

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Table 6 - Long-Term Central County Projects

		Performance Measures on SR-4										Quantitative Measures		
		Qualitative Measures					SCS					Mobility Improvements		
		Multi-Modal Access, Mobility, and Reliability		Reduce VMT			Annual Reductions in Total Delay (Recurrent and Non-Recurrent- hb)		Cost Effectiveness		Rank			
Year	ID	Project	System Continuity	Freeway Operational Improvement	Enhance Transit Service	Improve Transit Speed	Improve Efficiency Through Signal Timing and Ramp Metering	Factor Access to Jobs and Housing	Reduce per-capita CO ₂ Emissions	Reduce Particulate Emissions	Increase Walking and Biking	Annual Reductions in Total Delay (Recurrent and Non-Recurrent- hb)	Cost Effectiveness	Rank
		I-680/SR-4 Interchange Improvements:	●	●	●	○	○	●	●	○	○	1,980,000	\$16.2 per person-hour of delay saved	1
	43	Project - Phases I, II, IV, V - Construct direct connector ramps for the interchange.	●	●	●	○	○	●	●	○	○			
	44	I-680/SR-4 Interchange HOV direct connector ramp.	●	●	○	○	○	○	○	○	○			
		Parallel Arterial Improvements:	●	●	○	○	○	○	○	○	○			
	45	Extend Evara Rd from Willow Pass Rd to Port Chicago Hwy.	●	○	○	○	○	○	○	○	○	949,363	\$8.92 per person-hour of delay saved	2
	46	Extend West Leland Rd to Willow Pass Rd.	●	○	○	○	○	○	○	○	○			
		Pacheco Boulevard Widening:	●	○	○	○	○	○	○	○	○			
	42	Widen from 2 to 4 lanes from Blum Rd to Morello Ave with a new railroad overcrossing.	●	○	○	○	○	○	○	○	○	0	\$0 person-hour of delay saved	3
		Alhambra Ave Safety Improvements:	●	○	○	○	○	○	○	○	○			
	41	Construct a 2nd SB lane from Walnut Ave to Franklin Canyon Rd.	●	○	○	○	○	○	○	○	○	0	\$0 person-hour of delay saved	4

Projects may be rearranged in the future as project development occurs and funding plans are identified. Subject to review by the RTPCs.

LEGEND:

Qualitative:

● More Favorable ○ Favorable ○ Less Favorable

* Note: Non-recurrent

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East County Performance Assessment

Similar to West County, the future baseline conditions for East County do not have significant levels of traffic congestion. This is due primarily to the completion of major congestion-relieving projects in East County, including the SR-4 widening project and the eBART extension, both currently under construction.

Short-Term 2015 – 2020

As in the other planning areas, ITS Installations and Ramp Metering are some of best performing projects from a quantitative perspective. Similar to West County, the Ramp Metering strategy (ID#8) generates a higher level of delay reduction than ITS Installations (ID#1). However, the relative costs of the two projects lead to better cost-effectiveness for ITS than for Ramp Metering. Both projects rate very well on all of the auto-related qualitative metrics, as shown in Table 7.

The Control Point Metering (ID#22) is notable for the fact that it increases, rather than reduces, the total annual delay on SR-4; it is the only project which serves to lower average speeds on the mainline facility. Also, it is rated as "less favorable" on all qualitative criteria except System Continuity.

Finally, the package of projects for the SR-4 Bypass Widening (ID#34-35) scores very well on all SCS-related qualitative metrics. Unfortunately, it only produces modest reductions in delay, leading to poor performance on cost-effectiveness, as shown in Table 7.

The East County project performance assessment should be viewed as informing potential implementation trade-offs, rather than dictating a particular course of action in the years ahead. Therefore, project rankings are not presented. More details on the East County performance assessment is provided in Appendix B.

Long-Term 2020 – 2030

Some of the best performing projects in the Long-Term group relate to the package of East County Parallel Arterial Improvements (ID#50-51, 54, and 56-57). Together, these projects generate a delay reduction of 912,811 hours per year, a decrease of nearly 7% compared to 2030 baseline conditions. At \$4.67 per person-hour of delay saved, its cost-effectiveness is very good, and the package also rates well on all of the SCS-related qualitative metrics, as shown in Table 8.

There are three other Long-Term packages - East County Intersection Improvements (ID#52-53 and 55), SR-4 Bypass Ramp Metering (ID#60), and SR-4 Bypass (ID#58-59 and 61-64) - all of which have mixed performance results. Quantitative improvements in delay are modest, ranging from 0.2% reduction to 2.1% reduction in annual person-hours saved compared to the 2030 baseline improvements. In terms of qualitative criteria, most projects rate as "least favorable" on all of the auto-related metrics, see Table 8.

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Table 8 - Long-Term East County Projects

Year	ID	Project	Qualitative Measures							Quantitative Measures										
			Multi-Modal Access, Mobility, and Reliability				SCS			Annual Reductions in Total Delay (Recurrent and Non-Recurrent) in h	Cost Effectiveness									
			System Continuity	Freeway Operational Improvement	Enhance Transit Service	Improve Transit Speed	Improve Efficiency Through Signal Timing and Ramp Metering	Better Access to Jobs and Housing	Reduce per-capita CO ₂ Emissions			Reduce VMT	Increase Walking and Biking							
		East County Parallel Arterial Improvements:																		
	50	Willow Pass Rd Widening from Bailey Rd to Pittsburg City Limits.	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	51	Willow Pass Rd Widening from Range Rd to Lottus Rd.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	54	California Ave Widening from Railroad Ave to Lovendige Rd.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	56	Pittsburg-Antech Hwy Widening from 2 to 4 lanes between Somersville and Lovendige Rd.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	57	West Tregalies Rd/Fitzuren Rd Widening from 2 to 4 lanes.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		Pittsburg/Bay Point BART Station Area Improvements:																		
	47	Bailey Rd/Leland Rd Intersection Improvements.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	48	Bailey Rd/Willow Pass Rd Intersection Improvements.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	49	Bailey Rd Poestman Interchange Improvements and Design Modifications.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		East County Intersection Improvements:																		
	52	Railroad Ave/Leland Rd Intersection Improvements.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	53	Railroad Ave/EB SR-4 Ramps Intersection Improvements.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	55	Buchanan Rd/Lovendige Rd Intersection Improvements.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		SR-4 Ramp Metering:																		
	60	On the SR-4 Bypass (FPI/CSMP #13).	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		On the SR-4 Bypass (FPI/CSMP #14).	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		SR-4 Bypass:																		
	58	SR-4 Bypass/SR-160 Northbound Connector.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	59	SR-4 Bypass/SR-160 Southbound Connector.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	61	Widen (number of lanes varies) and improve the "old" SR-4 arterial from SR-160 to Marsh Creek Rd.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	62	SR-4 Bypass, Segment 1: Widen from 4 to 6 lanes between SR-160 and Lone Tree Way.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	63	SR-4 Bypass, Segment 2: Widen from 2 lanes to a 4-lane crossway between Sand Creek Rd and Balfour Rd.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	64	SR-4 Bypass, Segment 3: Balfour Rd Interchange Improvements.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		Projects may be reorganized in the future as project development occurs and funding plans are identified. Subject to review by the RTPCs.																		
		LEGEND:																		
		Qualitative:																		
		● "More Favorable"	○ "Favorable"	○ "Less Favorable"																
		● Note: Non-recurrent																		

2020 - 2030

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Section 4: Multimodal Transportation Service Objectives

As described in the Introduction, the RTPCs have each developed Action Plans that include Multimodal Transportation Service Objectives (MTSOs) to use as performance measures for their planning activities. According to the Growth Management Plan Program *Implementation Guide*:

"Action Plans include adopted MTSOs using a quantifiable measure of effectiveness and including a target date for attaining the objective (e.g., minimum intersection Level of Service, maximum travel time delays, auto occupancy targets, and transit use). The adopted MTSOs should also be able to serve as "thresholds of significance" in the CEQA review of a proposed project or General Plan amendment (GPA)."

The following sections discuss existing and future performance related to the MTSOs in each planning area in the corridor.

Overview of Performance Measures

Performance measures are used to monitor transportation systems and are important to the decision-making process. They are used to monitor whether congestion, average speeds, system reliability, and mobility options have changed over time. Level of Service (LOS) and delay index are two performance measures used to monitor the SR-4 corridor.

Level of Service (LOS)

LOS is a measure of traffic operating conditions based on volume and capacity as calculated using the Highway Capacity Manual (HCM). Roadway LOS range from LOS A, which indicates free flow or excellent conditions with short delays, to LOS F, which indicates congested or overloaded conditions with extremely long delays. LOS A through LOS D is considered excellent to satisfactory service levels, LOS E is undesirable, and LOS F conditions are representative of gridlock.

Delay Index

Delay Index is an expression of the amount of time required to travel a segment of road during the peak commute hour as compared to non-peak hours in a single direction. The measure is calculated by dividing peak travel time by non-peak travel time.

Delay Index = Peak Travel Time/Non-Peak Travel Time

A Delay Index of 1.0 indicates that the traffic moves at free-flow speed, unconstrained by congestion and not exceeding the posted speed limit. As congestion increases and average speed decreases, the Delay Index rises. A Delay Index of 2.0 indicates that the trip takes twice as long during peak hours as during non-peak hours.

West County

The MTSO for SR-4 in West County is: **maintain LOS "E" or better on all segments for SR-4**. WCCTAC has also adopted numerous area-wide goals which may have some relevance to the corridor:

- Maintain a drive alone rate during peak periods of less than 75 percent system-wide.
- Increase West County transit ridership by 10 percent between year 2007 and 2012.
- Increase bicycle and pedestrian mode splits to 3 percent for commute trips by 2012.
- Maintain a 3,000/day ridership on the Capitol Corridor route by year 2012.
- Achieve 500/day ridership on the Richmond-San Francisco ferry line by 2012.
- Achieve 500/day ridership on the Hercules-San Francisco ferry line by 2012.
- Maintain 2007 on-time performance for buses.

These quantitative goals apply to the entire planning area, and it is difficult to ascribe a portion of these targets to the SR-4 corridor, particularly for those items related to specific transit routes that are outside of the corridor. Accordingly, the focus for this study is only on the direct facility performance of SR-4.

Current performance on the West County portion of SR-4 is at LOS C Eastbound and LOS B Westbound. Without implementing any of the projects evaluated in this study, future baseline performance on SR-4 in West County is LOS C Eastbound and LOS B Westbound in the Short-Term and LOS D Eastbound and LOS C Westbound in the Long-Term. If the full package of proposed improvements is implemented, the performance would be LOS C Eastbound and LOS B Westbound in the Short-Term and LOS C for both Eastbound and Westbound in the Long-Term, see Table 9.

Table 9 - West County LOS

	Current	Future Baseline		Proposed Improvements	
		Short-Term	Long-Term	Short-Term	Long-Term
Eastbound	C	C	D	C	C
Westbound	B	B	C	B	C

Central County

The MTSO for SR-4 in Central County established by TRANSPAC is to achieve and maintain a Delay Index⁷ of 5.0 from Cummings Skyway (WCCTAC boundary) to Willow Pass (TRANSPLAN boundary).

Current performance on the Central County portion of SR-4 is at a Delay Index of 1.3 Eastbound and 1.3 Westbound. Without implementing any of the projects evaluated in this study, future baseline performance on SR-4 in Central County is a Delay Index of 2.7 Eastbound and 1.7 Westbound in the Short-Term and 4.1 Eastbound and 1.9 Westbound in the Long-Term. If the full package of proposed improvements is implemented, the performance would improve to a Delay Index of 1.2 Eastbound and 1.2 Westbound in the Short-Term and 1.2 Eastbound and 1.3 Westbound in the Long-Term, see Table 10.

Table 10 - Central County Delay Index

	Current	Future Baseline		Proposed Improvements	
		Short-Term	Long-Term	Short-Term	Long-Term
Eastbound	1.3	2.7	4.1	1.2	1.2
Westbound	1.3	1.7	1.9	1.2	1.3

East County

TRANSPLAN has established two MTSOs that related explicitly to SR-4:

- Achieve and maintain a Delay Index of 2.5 in the AM or PM Peak Periods.
- HOV lane utilization should exceed 600 vehicles per lane in the peak direction at peak hour.

The RTPC has also established the following MTSOs for adjacent arterials and nearby transit service:

- Bailey Road: Peak hour V/C ratio at signalized intersections should be less than or equal to 0.99 (LOS E).
- All Other Signalized Suburban Arterials (excepting Bailey Road): Peak hour V/C ratio at signalized intersections should not be worse than 0.85 (mid level-of-service D) based on the Authority's method of LOS analysis.
- Traffic Management Program Sites: Buchanan Road, Railroad Avenue, and Kirker Pass Road: System delay index of 1.54 and corridor delay index for Buchanan Road of 1.88.
- Transit Productivity Target (bus): 12 riders per revenue service hour.
- Transit Productivity Target (BART): 4,000 daily BART riders west of Bay Point Station.

⁷ The Delay Index is an expression of the amount of time required to travel between two points during the peak hour as compared to non-peak hours. The measure is calculated by dividing peak travel time by non-peak travel time.

Current performance on the East County portion of SR-4 is at a Delay Index of 1.5 Eastbound and 2.6 Westbound. Following the completion of the SR-4 widening and e-BART, future baseline performance on SR-4 in East County is a Delay Index of 1.1 Eastbound and 1.9 Westbound in the Short-Term and 1.5 Eastbound and 3.6 Westbound in the Long-Term. If the full package of proposed improvements is implemented, the performance would improve to a Delay Index of 1.1 Eastbound and 1.1 Westbound in the Short-Term and 1.2 Eastbound and 1.3 Westbound in the Long-Term, see Table 11.

Table 11 - East County Delay Index

	Current	Future Baseline		Proposed Improvements	
		Short-Term	Long-Term	Short-Term	Long-Term
Eastbound	1.5	1.1	1.5	1.1	1.2
Westbound	2.6	1.9	3.6	1.1	1.3

Section 5: Recommendations/Conclusions

During the course of this study, a number of new projects were identified for consideration that had not been well defined in earlier planning documents. In particular, several projects related to the interchange of I-680 and SR-4, collectively known as Scenario 5, were designed as an enhancement on earlier proposals for that segment. TRANSPAC recommended that Scenario 5 be established as a project in Contra Costa and added to the Comprehensive Transportation Project List (CTPL) and the Countywide Transportation Plan. Scenario 5 consists of the following projects depicted in Figure 8:

- An eastbound mixed-flow lane from San Marco Blvd off-ramp to San Marco Blvd on-ramp;
- An eastbound mixed-flow lane from east of SR-242 on-ramp to San Marco Blvd off-ramp; and
- An eastbound HOV lane from NB I-680 on-ramp to the start of the HOV lane 1,500 feet west of Port Chicago Highway off-ramp.

Together with the other proposed capacity enhancements on SR-4 in the same general area, these projects perform well on both quantitative and qualitative metrics.

Total Project Costs

As part of this project, the study team documented and updated cost estimates for all of the proposed projects. Estimates were prepared in 2011 dollars, and summed by time horizon (Short-Term vs. Long-Term) for each planning area. The total costs for all projects evaluated in the study are provided below in Table 12.

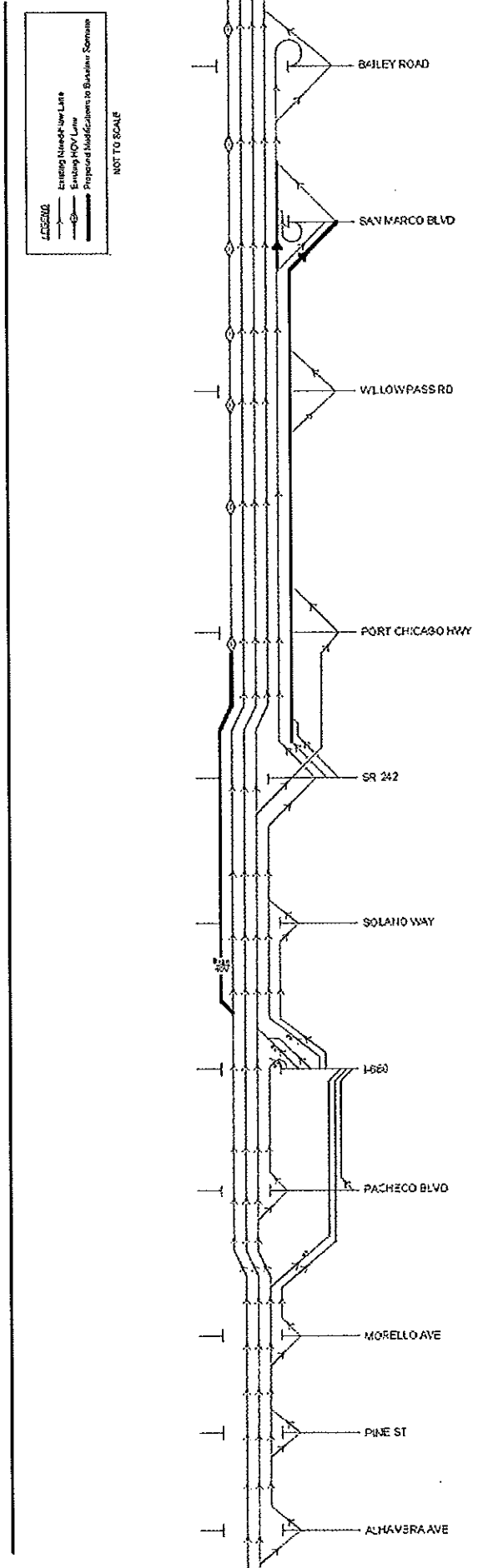
Table 12 - Total Cost for All Projects (2011\$ - millions)

<i>Planning Area</i>	<i>Short-Term: 2015-2020</i>	<i>Long-Term: 2020-2030</i>	<i>TOTAL</i>
West	\$210	\$791*	\$1,002
Central	\$344	\$386	\$730
East	\$164	\$360	\$524
Total	\$718	\$1,537	\$2,256

*Includes \$454 million for wBART

The total cost for these projects (\$2.256 billion) far exceeds available funding for transportation improvements in the corridor. It is likely that obtaining the necessary funding to implement the projects proposed in this study will require coordination with local jurisdictions, regional partners, and potentially state and federal sources as well. The ability to fully fund a particular project may be largely determined by its fit with the priorities and criteria of available funding sources rather than its localized performance ranking in the corridor. However, to the extent that local jurisdictions and decision-making bodies have discretionary authority over expenditures, the results of this study provide information about the relative benefits available by choosing to fund different potential projects. It should be noted that West County total projects costs are higher as more transit projects are proposed for this planning area.

Figure 8 – Lane Diagram of Proposed Scenario 5



Implementation Considerations

In addition to the constraint of funding availability, stakeholders highlighted how other considerations will likely shape the priorities for project implementation within the corridor. These considerations include geographic and modal balance and the network impacts of project phasing.

For example, during the project evaluation, it was quickly recognized that many of the transit-related projects in West County do not have a strong impact on performance in the SR-4 corridor. This is largely because the transit network is primarily oriented north-south along the I-80 corridor rather than serving the east-west movements that parallel the SR-4 freeway. This should not be construed as an indication that transit projects are not important or beneficial for the West County planning area. On the contrary, transit can serve many important purposes, including congestion relief along the I-80 corridor. It is important to balance the needs of multi-modal users in different corridors and this could suggest a slightly different prioritization of projects than highlighted by this study, which was exclusively focused on a single corridor.

Another key point raised by the project stakeholders is the need to prioritize projects based on a logical phasing plan. Specifically, a project that improves operations through capacity expansion may have the largest potential for congestion relief, but if it is located between two other segments that are congested, its utility as a standalone project is diminished. In order to ensure a continuous and smooth traffic flow on the improved segment that does not create new bottlenecks, implementing the middle project may not be advisable until the downstream project is completed. Similarly, reconstructing a major interchange that will include HOV-to-HOV flyover ramps may be premature if the connecting HOV lanes on the mainline are not yet completed. Thus, the project evaluation should be viewed as informing potential implementation trade-offs, rather than dictating the timing for construction in the years ahead.

MTSOs and Action Plans

At the outset of the SR-4 ICA, it was anticipated that the results of the project evaluation might suggest a re-prioritization of projects within each planning area or across the corridor as a whole. In addition, one of the goals of the study was to see whether the proposed set of projects could enable additional harmonization of MTSOs across the corridor. Harmonization of MTSOs could have required amendments to the Action Plans for Routes of Regional Significance. Instead, this study affirmed that current priorities and metrics within the Action Plans are sufficient for the time being, and that no amendments will be required.

Next Steps

The projects in the SR 4 ICA include traffic and freeway operational enhancements, freeway and interchange improvements, transit projects, and projects that support PDAs. Some projects are "on the books", or recognized by county and regional transportation plans, while others are new projects that evolved through the process of developing the ICA. The projects outlined in the ICA provide a comprehensive vision for the next generation of transportation improvements for the SR-4 corridor.

Regardless of the type of project – freeway, operations or transit – there is a common framework for the next steps that need to be taken. In general this involves prioritizing and recognizing these projects at the RTPC level, incorporating projects into the Authority's Countywide Transportation Plan, conducting any technical studies necessary to prepare strategic funding plans, advancing projects in the regional transportation planning process, and finally, project delivery. Each of these steps is discussed briefly as follows.

RTPC Approval and Prioritization – Three RTPC's – WCCTAC, TRANSPAC, and TRANSPLAN – are located along the SR-4 corridor studied in the ICA. Each is facing unique transportation challenges in the future. For instance East County projects include traffic operational improvements to adjacent arterials and improvements supporting the needs of PDA's while West County is concentrating on multi-modal opportunities that support PDA development in the area of the SR 4 / I-80 interchange. Central County is clearly focused on advancing the important SR 4/I-680 interchange and SR-4 widening.

Because of these varying perspectives, each area of Contra Costa County may look at and prioritize projects by emphasizing, or weighting the performance metrics presented in the ICA differently. RTPC prioritized projects will need to be furnished to CCTA for evaluation in the Countywide Transportation Plan.

Countywide Transportation Plan Evaluation and Technical Studies – Prioritized project lists forwarded by each of three RTPC's located along SR-4 then need to be evaluated from an overall, countywide perspective. To support these evaluations technical studies may need to be conducted for new projects that have been in the plan previously or not previously defined in sufficient detail. The technical studies should be complete enough so that the projects are defined and planning level estimates of probable costs identified.

Strategic Funding Plans and the Regional Transportation Planning Process -- The technical studies will serve as input to the development of strategic funding plans for projects that advance through the Countywide Transportation Plan process. Funding could be local Measure J monies, or more likely a combination of funding through local, regional, state and federal sources. Projects that meet the needs of the RTPC and CCTA planning process, measure well regional transportation planning metrics, and have broad support based on reasonable expectations of joint funding should be eligible for inclusion in the financially constrained element of the Regional Transportation Plan (RTP).

Project Delivery Process – Projects that are included in the RTP can proceed to the appropriate project delivery process which can vary depending on the scope and type of project. Ramp metering projects can be delivered with a minimal project delivery process that includes technical and monitoring studies. More complicated freeway projects will need to comply with the Caltrans project delivery process. For instance the step of the project delivery process for the SR-4 improvements east of the SR4/I-680 interchange referred to as Scenario 5 in this report or identified in the SR-4 FPI/CSMP would be the completion of a Caltrans Project Study Report followed by the preparation of environmental clearance documents, engineering design, right-of-way procurement, and construction. Transit projects that rely upon federal funds will need to be conducted according to the Federal Transit Agency New or Small Starts processes. These processes, which extend through design and the preparation of ready-to-let plans, may be completed by local cities, CCTA, transit agencies, or Caltrans.

Appendix B: Evaluation Matrix

West County Projects		Performance Measure on SR4										Quantitative Measure		Qualitative Measure		Cost Effectiveness		Other				
Year	Project	System Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability		
2015 - 2020	1	West County TTB Installation: Fill gaps in the current and programmed, and extend TTB coverage to the full corridor (FPO/SMP #1-3). Capital Center Services	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	2	Increased Richmond-Hercules service along the existing Capital Center rail line. Increased Hercules-Marinette service along the existing Capital Center rail line	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	3	Hercules Ferry Service and Intermodal Station	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	4	Hercules Intermodal Transit Station construction to serve the Capital Center and Hercules Ferry Service.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	5	West County Ramp Rehabilitation: SR4 EB and WB Ramps between I-80 and I-680 (FPO/SMP #15-16)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
2020 - 2030	36	WBART: Options will be reviewed from Hercules to the Richmond BART station.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	37	Ultimate I-80/SR4 Interchange Improvements: Widening I-80 WB on-ramp from 1 to 3 lanes at John Muir Parkway and on-ramp; lower connector ramps from NB I-80 to WB SR4 and from SB I-80 to EB SR4.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	38	Willow Ave Ramp Replacement: Reconstruct the WB ramps as diagonal ramps.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	40	State Route 4 West, Contract to full Freeway Standard: Upgrade SR4 from an expressway to a freeway between I-80 and Cummings Skyway.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Project may be re-ranked in the future as project development occurs and funding plans are identified.
Evaluation does not dictate a particular action in years ahead. Scores are not included.
Subject to review by the RTPCs.

LEGEND:
Qualitative:
More Favorable = 2 *Favorable* = 1 *Less Favorable* = 0

Quantitative:
cost effectiveness (ca.) <\$5 = 4, ca. \$5 - \$10 = 3, ca. \$10 - \$15 = 2, and ca. 0 - >\$15 or negative = 0

* Note: Non-recurrent

Central County Projects
Performance Measures on SR-4

Project	Qualitative Measures										Quantitative Measures on SR-4									
	System Condition	Priority Operational Performance	Customer Satisfaction	Service Reliability	Improvement Throughput	Travel Time	Cost Effectiveness	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction
1	Fill gaps in the current and proposed and add new ITS coverage to the toll corridor (P/C/SMP #1-3).	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
2	Improve Intermodal Station (Phase 3)-425 parking spaces, vehicles, and pedestrian bridges.	●	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
3	Ferry service between Madison and San Francisco.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
4	SR-4 EB Widening from I-880 to Willow Pass Rd (Eads):																			
5	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
6	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
7	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
8	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
9	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
10	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
11	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
12	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
13	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
14	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
15	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
16	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
17	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
18	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
19	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
20	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			
21	SR-4 EB From I-880 to Willow Pass Rd (Eads)																			

Projects may be renumbered in the future as project development occurs and funding plans are identified. Subject to review by the RTPCs

LEGEND:
Quantitative:
*More Favorable" = 2, "Favorable" = 1, or "Less Favorable" = 0

Quantitative:
cost effectiveness (ca.) < \$5 = 4, ca. \$5 - \$10 = 3, ca. \$10 - \$15 = 2, and ca. > \$15, or negative = 0

* Note: Non-recurrent

East County Projects
Performance Measures on SRA

Year	Project	System Condition	Quality Measures							Baseline 2015	Compliance Measures		Annual Reduction in Delay (per person-hour of delay saved)	Annual Reduction in Cost (per person-hour of delay saved)	Annual Reduction in Delay (per person-hour of delay saved)	Annual Reduction in Cost (per person-hour of delay saved)	
			Travel Time	Travel Time Variability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability	Travel Time Reliability		Travel Time Reliability	Travel Time Reliability					Travel Time Reliability
2015 - 2020	1 East County ITS Installation: Implementation and extend ITS coverage to the full corridor (P2028)P #42).	●	●	●	●	●	●	●	●	53	28	3,477,738	\$ 16.76	\$0.5 per person-hour of delay saved			
	3 East County Ramp Metering: SR-4 EB and WB Ramp Metering between SR 160 and I-805 (P2029)P #47).	●	●	●	●	●	●	●	●	51	26	425,827	\$ 13.20	\$1.17 per person-hour of delay saved			
	22 Control Point Metering: Atkinson Pass, Rafterville Rd and James Dodson Blvd/Sumner Rd.	●	○	○	○	○	○	○	○	45	32	-2,891	\$ 0.89	-\$4.55 per person-hour of delay saved			
	24 Arterial Signalization Improvements: Signal Improvements on Railroad Ave.	●	○	○	○	○	○	○	○								
	26 Communication equipment for signal synchronization on E. Leland Rd and Delta Fair Blvd.	●	○	○	○	○	○	○	○	53	28	0	\$ 0.80	\$0 per person-hour of delay saved			
	28 Lowridge Rd. Arterial Rd Interchange Improvements: Arterial Ferry Service: Ferry service to San Francisco.	●	○	○	○	○	○	○	○	53	28	1,451	\$ 0.20	\$3.08 per person-hour of delay saved			
	29 James Dodson Blvd Extension between Somerville Rd and Kilar Pass Rd. Construct new two-lane roadway, 2.2 miles in length with a 50 mph design speed.	●	○	○	○	○	○	○	○	55	26	132,202	\$ 42.80	\$204 per person-hour of delay saved			
	34 SR-4 Bypass Widening: Widening from 2 lanes to a four-lane roadway from Larned Rd to Sam Creek Rd.	●	○	○	○	○	○	○	○	52	27	28,859	\$ 80.20	\$322 per person-hour of delay saved			
	35 Stand Creek Rd Interchange construction.	●	○	○	○	○	○	○	○								
	2020 - 2030	East County Parallel Arterial Improvements: Weber Pass Rd Widening from Dally Rd to Pilsbury City Limits.	○	○	○	○	○	○	○	○	Baseline 2015	41	55	13,594,035			
51 Weber Pass Rd Widening from Range Rd to Lathrop Rd.		○	○	○	○	○	○	○	○		43	52	\$12,841	\$ 48.40	\$4.57 per person-hour of delay saved		
54 California Ave Widening from Railroad Ave to Lowridge Rd.		○	○	○	○	○	○	○	○								
56 Pilsbury-Artichoke Hwy Widening from 2 to 4 lanes between Somerville and Lowridge Rd.		○	○	○	○	○	○	○	○								
57 West Tropicana Right-of-Way Rd Widening from 2 to 4 lanes.		○	○	○	○	○	○	○	○								

Projects may be reorganized in the future as project development occurs and funding plans are identified. Evaluation does not dictate a particular action in years ahead. Scores are not included. Subject to review by the RTTC.

LEGEND:
Qualitative:
* "More Favorable" = 2, "Favorable" = 1, "Less Favorable" = 0

Quantitative:
cost effectiveness (c.a.) <\$5 = 4, c.a. \$5 - \$10 = 3, c.a. \$10 - \$15 = 2, and c.a. 0, >\$15, or negative = 0

* Note: Non-recurrent

Item	Project	Performance Measures on SR-4										Total Delay (person-hours)	Total Delay Cost (\$)	Cost per person-hour of delay saved	Quantitative Score	Qualitative Score		
		SR-4 Bypass	SR-4 Bypass	SR-4 Bypass	SR-4 Bypass	SR-4 Bypass	SR-4 Bypass	SR-4 Bypass	SR-4 Bypass	SR-4 Bypass	SR-4 Bypass							
47	Palmdale/Point Baker Station Area Improvements:																	
48	Balcor Rd/Smith Rd Intersection Improvements:																	
49	Balcor Rd/Johnson Rd Intersection Improvements, Balcor Rd/Johnson Rd Intersection Improvements and Design Modifications:																	
50	East County Intersection Improvements:																	
51	Railroad Avenue/ SR-4 Tampa Intersection Improvements:																	
52	Balcor Rd/Overlook Rd Intersection Improvements:																	
53	Balcor Rd/Overlook Rd Intersection Improvements:																	
54	SR-4 Bypass:																	
55	SR-4 Bypass/ SR-160 Northbound Connector:																	
56	SR-4 Bypass/ SR-160 Southbound Connector:																	
57	SR-4 Bypass/ SR-160 Southbound Connector:																	
58	SR-4 Bypass/ SR-160 Southbound Connector:																	
59	SR-4 Bypass/ SR-160 Southbound Connector:																	
60	SR-4 Bypass/ SR-160 Southbound Connector:																	
61	SR-4 Bypass/ SR-160 Southbound Connector:																	
62	SR-4 Bypass/ SR-160 Southbound Connector:																	
63	SR-4 Bypass/ SR-160 Southbound Connector:																	
64	SR-4 Bypass/ SR-160 Southbound Connector:																	

Projects may be re-ranked in the future as project development occurs and funding plans are identified. Evaluation does not dictate a particular action in years ahead. Scores are not included. Subject to review by the RTPCs

LEGEND:
 Qualitative:
 * More Favorable = 2 * Favorable = 1 * Less Favorable = 0

Quantitative:
 cost effectiveness (ca.) < \$5 = 4, ca. \$5 - \$10 = 3, ca. \$10 - \$25 = 2, and ca. 0 - \$25 = 1 or negative = 0

* Note: Non-recurrent

Plan BayArea

TO: Policy Advisory Council

DATE: April 4, 2012

FR: Alix Bockelman, Director Programming and Allocations

RE: Update on Proposed OneBayArea Grant — Cycle 2 STP/CMAQ Funding

Background

Staff presented the initial OneBayArea Grant (OBAG) proposal to the MTC Planning Committee / ABAG Administrative Committee on July 8, 2011. At that meeting, the committee directed that staff release the proposal for public review. On January 13, 2012 staff recommended revisions to the OBAG proposal to the Joint Committee addressing comment letters and other concerns expressed by stakeholders, transportation agencies and local jurisdictions at various meetings (Bay Area Partnership working groups; Policy Advisory Council; ABAG Executive Board; ABAG Planning Committee; Regional Advisory Working Group, Regional Bicycle Working Group; and Plan Bay Area workshops). Committee memoranda and comment letters received to date can be viewed on the MTC website at <http://www.mtc.ca.gov/funding/onebayarea/>.

Additional OBAG Policy Program Revisions

At their January meeting, the Joint Planning / ABAG Administrative Committee members were generally supportive of the staff recommended revisions to the OBAG grant program and requested more clarity and adjustments which are outlined below as additional staff recommended revisions. Staff is also recommending to add one year to the OBAG funding cycle to address regional delivery, as described in item #1 below.

1. Add a Fourth Year of Funding to Cycle 2: Project sponsors and MTC staff are experiencing delivery challenges because of insufficient lead time for projects to go through the federal aid process. Sponsors need a minimum of 36 months, and ideally 48 months from the time of program adoption to proceed through the federal-aid process and deliver the projects especially for less traditional projects such as the Climate Initiatives and Safe Routes to School (SR2S) projects.

Recommended Revision: To ensure the region does not lose federal funds due to extended delivery timelines, staff is recommending adding a fourth year of funding to Cycle 2 / OBAG funding which allows the region to better manage the use of federal funds. This adds approximately \$70 million in funding that would go to CMAs for project selection. Funding to the regional programs also increases proportionately. Attachment 1 lays out the proposed new funding levels.

2. Increase Priority Development Area Flexibility: Staff had recommended that a project outside of a priority development area (PDA) count towards the required PDA minimum expenditure if it directly connects to or provides proximate access to a PDA. Further definition was requested.

Recommended revision: Rather than establishing a regional definition of “proximate access”, staff recommends that the CMAs make the determination for projects to count toward the PDA minimum that are not otherwise geographically located within a PDA. CMAs would need to map projects and designate

which projects are considered to support a PDA along with policy justifications. This analysis would be subject to public review when the CMA board acts on OBAG programming decisions. This should allow decision makers, stakeholders, and the public to understand how an investment outside of a PDA is to be considered to support a PDA and to be credited towards the PDA investment minimum threshold requirements. MTC staff will evaluate and report to the Commission on how well this approach achieves the OBAG objectives prior to the next programming cycle. MTC staff has prepared illustrative examples of projects that may count toward the PDA minimum based on direct connection or proximate access (see Attachment 2).

3. North Bay Priority Conservation Areas Pilot Program: There were requests to allow other counties to participate in the pilot outside of the four North Bay counties and an extensive discussion about which priority conservation area components (i.e. farm to market transportation projects versus open space acquisition / access) should be eligible given the limited funds in this program.

Recommended revision: Implement this program as a regionally competitive program with first priority going to the North Bay counties of Marin, Napa, Solano, and Sonoma. Eligible projects would include planning, land/easement acquisition, open space access projects, and farm-to-market capital projects. Priority would be given to projects that can partner with state agencies, regional districts and private foundations to leverage outside funds, particularly for land acquisition and open space access. Funding leveraged by MTC and ABAG beyond the \$5 million program (not including sponsor-provided match) could grow the program budget and open up consideration of projects outside of the North Bay counties. Program guidelines will be developed over the next several months. Prior to the call for projects, a meeting will be held with stakeholders to discuss the program framework and project eligibility. The program guidelines will be approved by the Commission following those discussions. Note that tribal consultation for Plan Bay Area highlighted the need for CMAs in Sonoma and Marin to involve tribes in PCA planning and project delivery.

4. Affordable Housing Production and Preservation: Concerns were expressed that the proposed OBAG fund distribution at the county level does not explicitly recognize an individual jurisdiction's performance in producing affordable housing. Further, MTC was asked to consider specific requirements for local jurisdictions to adopt policies to encourage affordable housing production and preservation.

Recommended revision: MTC will expect CMAs to distribute funds at the county level in a way that balances a variety of objectives, including low-income housing production. The following three measures are intended to support CMA decisions related to low-income housing production and protection of affordable housing.

a) In order to facilitate a discussion among the constituent jurisdictions within a county as part of the project selection process, MTC is publishing data for each county, showing each jurisdiction's contribution to the county's fund distribution based on a formula which includes low-income housing factors (See Attachment 3). For future cycles, staff recommends that housing production data be revised to incorporate the most up-to-date jurisdiction information.

b) CMAs would be required to develop and approve a PDA Growth Strategy that addresses affordable housing strategies (see Attachment 4). The PDA Growth Strategy will be due to MTC and ABAG by October 2012. By that date, CMAs will have completed an inventory of affordable housing policies currently enacted by each local jurisdiction. By October 2013, CMAs would work with their respective jurisdictions to formulate affordable housing strategies and identify which, if any, policies/ordinances are recommended to promote and preserve affordable housing in PDAs. To support the CMAs and local

jurisdictions in these efforts, MTC and ABAG will coordinate with related work conducted through the Housing and Urban Development (HUD) grant awarded to the region in fall 2011. Based on this information and recommendations in the PDA growth strategy, MTC would consider linking the release of future cycle funding (subsequent to FY 2015-16) on local progress to enact locally developed affordable housing policies. MTC expects the share of funding attributable to affordable housing production to increase in future cycles.

c) MTC and ABAG's PDA Planning Grant Program will place an emphasis on affordable housing production, and preservation in funding agreements with grantees.

5. Performance and Accountability: Staff had recommended streamlining the performance and accountability requirements in recognition of the considerable lead time required to implement these requirements as a condition for receiving OBAG funds. The two requirements due by July 1, 2013 are the Complete Streets Act of 2008 compliant general plan circulation element and a 2007-14 RHNA compliant general plan housing element approved by the California Department of Housing and Community Development (HCD). Some of the committee members reported that the time and resources involved for a general plan amendment made the Complete Streets Act deadline in many cases impractical; and others believed that HCD approval process in some cases can be very unpredictable.

Recommended revision: The following provides additional flexibility to jurisdictions to meet these requirements:

a) To be eligible for OBAG funds, a jurisdiction will need to address complete streets policies at the local level through the adoption of a complete streets ordinance no later than October 1, 2012. A jurisdiction can also meet this requirement by already having a general plan that complies with the Complete Streets Act of 2008 or by its adoption by the October 1, 2012 deadline. Staff will provide minimum requirements based on best practices for the ordinances.

b) A jurisdiction is required to have its general plan housing element adopted and approved by HCD for 2007-14 RHNA prior to July 1, 2013. If a jurisdiction submits its housing element to HCD on a timely basis but is facing obstacles in the HCD review process, a waiver may be given by the Joint MTC Planning/ABAG Administrative Committee based on a consideration of the circumstances involved.

6. Lessons Learned: MTC staff will report on the outcome of the CMA project selection process in late 2013. This information will include, but not be limited to, the following:

- Mix of project types selected;
- Projects funded within PDAs and outside of PDAs and how proximity and direct connections were used and justified through the county process;
- Complete streets elements that were funded;
- Adherence to the performance and accountability requirements; and
- Amount of funding to various jurisdictions and how this related to the distribution formula that includes population, RHNA housing allocations and housing production, as well as low-income housing factors.
- Public participation process

The CMAs will also be required to present their PDA Growth Strategy to the Joint MTC Planning/ABAG Administrative Committee in November or December 2012.

7. Safe Routes to School Regional Program: The committee discussed whether the funding for the MTC Safe Routes to School Program (SR2S) should be increased from \$10 million to \$17 million. In Cycle 1, \$15 million was made available to the counties by formula for a three-year period and \$2 million was directed to a regionally competitive Creative Grant Program.

Recommended revision: Staff recommends that the Regional Safe Routes to School Program be funded at \$5 million annually for the four-year period consistent with Cycle 1 but that the regionally competitive program be discontinued. In addition CMAs may choose to provide additional funds to the SR2S program through county OBAG investments.

8. Pavement Technical Assistance Program: The Local Streets and Roads Working Group requested additional funding to continue to carry out the Pavement Technical Assistance Program (PTAP).

Recommended revision: Staff recommends increasing the PTAP program funding level by \$4 million to a revised total of \$7 million. This funding level allows for the reinspection of the majority of each jurisdiction's local street and road network every other year which will result in updated asset management data needed to complete regional condition summaries and needs analyses for planning and programming purposes. In response to Tribal Consultation for Plan Bay Area, staff recommends that PTAP also be made available to assist tribes in conducting road condition inventories on tribal lands within the Bay Area.

Next Steps

The staff proposal has relied to date, on the current 2007-14 Regional Housing Needs Allocations (RHNA) for the proposed OBAG fund distribution. We intend to use the new RHNA 2014-2022 that will be available in May. Staff will revise the county level funding distribution, as appropriate, based on the new RHNA figures. In July, ABAG will finish its consideration of new PDA designation applications, and MTC staff will provide final PDA definitions and maps at that time.

After further discussions with stakeholders and working group committees, staff will prepare Final Cycle 2/OBAG Programming Policies for presentation to the Joint MTC Planning Committee/ABAG Administrative Committee in May and referral to the Commission for final approval. If approved, staff will start working on OBAG Program implementation in June.

Attachment 1

OneBayArea

Proposal

New Act Cycle 2 Program

April 2012

Cycle 2 Funding Commitments

Program Categories (millions \$ - rounded)		4-Year Total	January 2012 Proposal *	Augmentation	4-Year Total
Regional Program					
1	Regional Planning Activities	\$7	\$5	\$2	\$7
2	Regional Operations	\$105	\$74	\$31	\$105
3	Freeway Performance Initiative (FPI)	\$96	\$66	\$31	\$96
4	Pavement Technical Assistance Program (PTAP)	\$7	\$3	\$4	\$7
5	Priority Development Area (PDA) Plans	\$30	\$25	\$5	\$30
6	Climate Initiatives	\$20	\$10	\$10	\$20
7	Safe Routes To School (SR2S)	\$20	\$10	\$10	\$20
8	Transit Capital Rehabilitation	\$150	\$125	\$25	\$150
9	Transit Performance Initiative (TPI)	\$30	\$30		\$30
10	Priority Conservation Area (PCA)	\$5	\$5		\$5
Regional Program Total		\$470	\$353	\$117	\$470
					60%

* Without Lifeline and transit payback which have been advanced and funded in Cycle 1

County Program		4-Year Total	January 2012 Proposal	Augmentation	4-Year Total
One Bay Area Grant (OBAG)					
1	Alameda	\$61			
2	Contra Costa	\$46			
3	Marin	\$10			
4	Napa	\$7			
5	San Francisco	\$38			
6	San Mateo	\$25			
7	Santa Clara	\$84			
8	Solano	\$20			
9	Sonoma	\$24			
OBAG Total		\$320	\$250	\$70	\$320
					40%

Cycle 2 Total Total (**)	\$790	\$604	\$186	\$790
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** Amounts may not total due to rounding

Attachment 2: Examples of Projects That Provide Proximate Access to a Priority Development Area

For illustration purposes, below are examples of projects outside of PDAs which may count towards OBAG minimum expenditures in PDAs, by providing proximate access to a PDA. The intention of these examples is to provide general guidance to CMAs in their discussions with their board, stakeholders, and the public about how to apply this definition.

Project Type	Eligible Examples
Road Rehabilitation Program	<ul style="list-style-type: none"> • A continuous street rehabilitation project that directly connects to a PDA. A road project in the geographic vicinity of a PDA which leads to a PDA. (Ygnacio Valley Road within Walnut Creek both inside and outside of the PDA)
Bicycle / Pedestrian Program	<ul style="list-style-type: none"> • A bicycle lane / facility that is integral to a planned bicycle network (i.e. gap closures) that leads to a PDA (Alto Tunnel in Mill Valley). • A bicycle / pedestrian project that directly connects to a PDA; or in the geographic vicinity of a PDA that leads to a PDA. (Entire Embarcadero Rd Bicycle Lanes alignment in the City of Palo Alto which crosses over the El Camino Real PDA. Georgia Street Corridor Bicycle Improvements in Vallejo, small portion in PDA)
Safe Routes to Schools	<ul style="list-style-type: none"> • A project outside of a PDA that encourages students that reside in a PDA to walk, bike, or carpool to school. (District wide outreach and safety programs)
County TLC Program	<ul style="list-style-type: none"> • For enhancement / streetscape elements, the following projects may be supportive of PDAs although outside of their limits: <ul style="list-style-type: none"> ○ PDA corridor gap closure (El Camino Real segments between PDAs in Sunnyvale and Santa Clara) ○ PDA connection to a nearby significant transit node (North Berkeley BART station to University Avenue PDA)

Attachment 3: OBAG Formula Factors and Distribution Within County
 April 2012

County	Population		2007-2011 RHNA				1999-2006 Housing Production			
	2010 Population	Int'l County Share	Very Low Income Units	Int'l County Share	Total Units	Int'l County Share	Very Low Income Units	Int'l County Share	Total Units (Happet)	Int'l County Share
ALAMEDA COUNTY										
Alameda	73,812	4.9%	811	4.6%	2,046	4.6%	336	6.7%	952	3.0%
Albany	18,539	1.2%	107	0.6%	276	0.6%	15	0.3%	160	0.5%
Berkeley	112,580	7.5%	752	4.3%	2,431	5.4%	496	9.9%	1,269	4.0%
Dublin	46,036	3.0%	1,753	9.9%	3,330	7.4%	506	10.1%	3,832	12.2%
Emeryville	10,080	0.7%	360	2.0%	1,137	2.5%	187	3.7%	777	2.5%
Fremont	214,089	14.2%	2,335	12.7%	4,380	9.7%	503	10.0%	2,971	9.5%
Hayward	144,186	9.5%	1,261	7.1%	3,392	7.6%	57	1.1%	2,602	8.3%
Livermore	80,968	5.4%	1,698	9.6%	3,304	7.6%	461	9.2%	3,746	11.9%
Newark	42,573	2.8%	417	2.4%	863	1.9%	0	0.0%	314	1.0%
Oakland	390,724	25.9%	3,998	22.2%	14,629	32.6%	1,300	25.8%	7,733	24.7%
Piedmont	10,667	0.7%	23	0.1%	40	0.1%	0	0.0%	9	0.0%
Pleasanton	70,285	4.7%	1,804	10.2%	3,277	7.3%	530	10.5%	2,391	7.6%
San Leandro	84,950	5.6%	506	3.4%	1,630	3.6%	108	2.1%	870	2.8%
Union City	69,516	4.6%	982	5.4%	1,944	4.3%	232	4.6%	1,892	5.9%
Alameda County Unincorporated	141,266	9.4%	876	5.0%	2,167	4.8%	303	6.0%	1,878	6.0%
ALAMEDA TOTAL:	1,510,271	100.0%	17,633	100.0%	44,937	100.0%	5,034	100.0%	31,356	100.0%

CONTRA COSTA COUNTY										
Antioch	102,372	9.8%	655	7.9%	2,282	8.4%	838	13.2%	4,459	13.8%
Brentwood	51,481	4.9%	1,152	10.6%	2,705	10.0%	614	9.7%	4,073	12.6%
Clayton	10,897	1.0%	84	0.8%	131	0.6%	84	1.3%	219	0.7%
Concord	122,067	11.6%	1,065	9.8%	3,043	11.2%	286	4.5%	2,319	7.2%
Danville	42,039	4.0%	326	3.0%	583	2.2%	141	2.2%	721	2.2%
El Cerrito	23,549	2.2%	152	1.4%	431	1.6%	5	0.1%	185	0.6%
Hercules	24,060	2.3%	217	2.0%	453	1.7%	164	2.6%	792	2.5%
Lafayette	23,893	2.3%	190	1.8%	361	1.3%	17	0.3%	194	0.6%
Martinez	35,824	3.4%	427	3.9%	1,060	3.9%	0	0.0%	424	1.3%
Moraga	16,016	1.5%	120	1.1%	234	0.9%	21	0.3%	86	0.3%
Oakley	35,432	3.4%	339	3.1%	775	2.9%	461	7.3%	1,208	3.7%
Orinda	17,643	1.7%	118	1.1%	218	0.8%	0	0.0%	157	0.5%
Pinole	18,390	1.8%	132	1.2%	323	1.2%	40	0.6%	172	0.5%
Pittsburg	63,264	6.0%	545	5.0%	1,772	6.5%	628	9.9%	2,513	7.8%
Pleasant Hill	33,152	3.2%	265	2.4%	628	2.3%	164	2.6%	714	2.2%
Richmond	103,701	9.9%	730	6.7%	2,826	10.4%	1,293	20.4%	2,229	6.9%
San Pablo	29,139	2.8%	60	0.6%	298	1.1%	284	4.5%	494	1.5%
San Ramon	72,148	6.9%	1,889	17.4%	3,463	12.8%	564	8.9%	4,447	13.8%
Walnut Creek	64,173	6.1%	758	7.0%	1,958	7.2%	179	2.8%	1,377	4.6%
Contra Costa County Unincorporated	159,785	15.2%	1,413	13.0%	3,508	13.0%	549	8.7%	5,436	16.8%
CONTRA COSTA TOTAL:	1,049,025	100.0%	10,837	100.0%	27,072	100.0%	6,332	100.0%	32,319	100.0%

MARIN COUNTY										
Belvedere	2,068	0.8%	9	0.5%	17	0.3%	0	0.0%	9	0.2%
Corte Madera	9,253	3.7%	104	5.6%	241	5.0%	0	0.0%	99	2.0%
Fairfax	7,441	2.9%	35	1.9%	108	2.2%	0	0.0%	18	0.4%
Larkspur	11,926	4.7%	145	7.9%	382	7.8%	13	1.0%	53	1.1%
Mill Valley	13,903	5.5%	128	6.9%	292	6.0%	97	7.6%	170	3.4%
Novato	51,904	20.6%	446	24.1%	1,241	25.4%	824	64.4%	2,582	52.2%
Ross	2,415	1.0%	14	0.8%	27	0.6%	0	0.0%	21	0.4%
San Anselmo	12,336	4.9%	45	2.4%	113	2.3%	0	0.0%	70	1.4%
San Rafael	57,713	22.9%	469	25.4%	1,403	28.7%	112	8.8%	1,184	23.9%
Sausalito	7,061	2.8%	75	4.1%	165	3.4%	22	1.7%	73	1.5%
Tiburon	8,962	3.6%	57	3.1%	117	2.4%	7	0.5%	151	3.0%
Marin County Unincorporated	67,427	26.7%	320	17.3%	773	15.8%	204	15.9%	521	10.5%
MARIN TOTAL:	252,409	100.0%	1,847	100.0%	4,882	100.0%	1,279	100.0%	4,951	100.0%

NAPA COUNTY										
American Canyon	19,454	14.3%	285	19.6%	728	19.6%	174	21.3%	1,323	31.3%
Callstoga	5,155	3.8%	28	1.9%	94	2.5%	18	2.2%	78	1.8%
Napa	76,915	56.4%	761	52.4%	2,024	54.6%	528	64.6%	2,397	56.6%
St. Helena	5,814	4.3%	51	3.5%	121	3.3%	20	2.4%	124	2.9%
Yountville	2,933	2.1%	31	2.1%	87	2.3%	2	0.2%	67	1.6%
Napa County Unincorporated	26,213	19.2%	297	20.4%	651	17.6%	75	9.2%	244	5.8%
NAPA TOTAL:	136,484	100.0%	1,453	100.0%	3,705	100.0%	817	100.0%	4,233	100.0%

SAN FRANCISCO COUNTY										
SAN FRANCISCO TOTAL:	805,235	100.0%	12,124	100.0%	31,193	100.0%	5,304	100.0%	17,439	100.0%

Attachment 3: OBAG Formula Factors and Distribution Within County
 April 2012

County	Population		2007-2011 RHNA				1999-2006 Housing Production			
	2010 Population	Intra County Share	Very Low Income Units	Low Income Share	Total Units	Intra County Share	Very Low Income Units	Intra County Share	Total Units (capped)	Intra County Share
SAN MATEO COUNTY										
Atherton	6,914	1.0%	33	0.5%	83	0.5%	0	0.0%	5	0.1%
Belmont	25,835	3.6%	156	2.5%	399	2.5%	44	3.0%	317	3.4%
Brisbane	4,282	0.6%	157	2.5%	401	2.5%	8	0.5%	108	1.2%
Burlingame	28,806	4.0%	255	4.1%	650	4.1%	0	0.0%	104	1.1%
Colma	1,792	0.2%	26	0.4%	65	0.4%	73	5.0%	74	0.8%
Daly City	101,123	14.1%	473	7.7%	1,207	7.7%	33	2.2%	416	4.5%
East Palo Alto	28,155	3.9%	247	4.0%	630	4.0%	212	14.4%	719	7.7%
Foster City	30,567	4.3%	191	3.1%	486	3.1%	88	6.0%	533	5.7%
Half Moon Bay	11,324	1.6%	108	1.8%	276	1.8%	106	7.2%	356	3.8%
Hillsborough	10,825	1.5%	34	0.6%	86	0.5%	15	1.0%	84	0.9%
Menlo Park	32,026	4.5%	389	6.3%	993	6.3%	0	0.0%	215	2.3%
Millbrae	21,532	3.0%	177	2.9%	452	2.9%	0	0.0%	262	2.8%
Pacifica	37,234	5.2%	108	1.8%	275	1.7%	10	0.7%	179	1.9%
Portola Valley	4,353	0.6%	20	0.3%	74	0.5%	15	1.0%	61	0.7%
Redwood City	76,815	10.7%	726	11.8%	1,856	11.8%	106	7.2%	465	5.0%
San Bruno	41,114	5.7%	382	6.2%	973	6.2%	325	22.1%	378	4.1%
San Carlos	28,406	4.0%	235	3.8%	599	3.8%	0	0.0%	208	2.2%
San Mateo	97,207	13.5%	1,195	19.4%	3,051	19.4%	210	14.3%	1,771	19.1%
South San Francisco	63,632	8.9%	641	10.4%	1,635	10.4%	192	13.1%	1,310	14.1%
Woodside	5,287	0.7%	17	0.3%	41	0.3%	0	0.0%	41	0.4%
San Mateo County Unincorporated	61,222	8.5%	590	9.6%	1,500	9.6%	31	2.1%	1,680	18.1%
SAN MATEO TOTAL:	718,451	100.0%	6,169	100.0%	15,738	100.0%	1,468	100.0%	9,286	100.0%
SANTA CLARA COUNTY										
Campbell	39,349	2.2%	321	1.4%	892	1.5%	37	0.3%	617	1.3%
Cupertino	58,302	3.3%	570	2.4%	1,170	1.9%	48	0.4%	1,339	2.7%
Gilroy	48,821	2.7%	536	2.3%	1,615	2.7%	516	4.2%	2,577	5.3%
Los Altos	28,976	1.6%	164	0.7%	317	0.5%	40	0.3%	261	0.5%
Los Altos Hills	7,922	0.4%	45	0.2%	81	0.1%	32	0.3%	83	0.2%
Los Gatos	29,413	1.7%	254	1.1%	562	0.9%	86	0.7%	402	0.8%
Milpitas	66,790	3.7%	1,110	4.7%	2,487	4.1%	701	5.7%	3,318	6.8%
Monte Sereno	3,341	0.2%	22	0.1%	41	0.1%	19	0.2%	76	0.2%
Morgan Hill	37,882	2.1%	566	2.4%	1,312	2.2%	556	4.6%	2,335	4.8%
Mountain View	74,066	4.2%	959	4.1%	2,399	4.3%	123	1.0%	1,484	3.0%
Palo Alto	64,403	3.6%	1,233	5.3%	2,860	4.7%	344	2.8%	1,397	2.9%
San Jose	945,942	53.1%	13,073	55.8%	34,721	57.5%	8,301	67.9%	26,114	53.4%
Santa Clara	116,468	6.5%	2,207	9.4%	5,873	9.7%	758	6.2%	4,763	9.7%
Saratoga	29,926	1.7%	158	0.7%	292	0.5%	61	0.5%	539	1.1%
Sunnyvale	140,081	7.9%	1,781	7.6%	4,426	7.3%	112	0.9%	2,167	4.4%
Santa Clara County Unincorporated	89,960	5.0%	445	1.9%	1,090	1.8%	483	4.0%	1,421	2.9%
SANTA CLARA TOTAL:	1,781,642	100.0%	23,445	100.0%	60,338	100.0%	12,217	100.0%	48,893	100.0%
SOLANO COUNTY										
Benicia	26,997	6.5%	246	4.9%	532	4.1%	182	9.3%	413	2.7%
Dixon	18,351	4.4%	295	5.9%	728	5.6%	0	0.0%	1,017	6.6%
Fairfield	105,321	25.5%	1,435	28.5%	3,796	29.2%	249	12.8%	3,812	24.7%
Rio Vista	7,360	1.8%	389	7.7%	1,219	9.4%	39	2.0%	1,391	9.0%
Suisun City	28,111	6.8%	282	5.6%	610	4.7%	80	4.1%	1,004	6.5%
Vacaville	92,428	22.4%	1,222	24.3%	2,901	22.3%	778	39.9%	4,406	28.5%
Vallejo	115,942	28.0%	1,123	22.3%	3,100	23.9%	553	28.3%	2,965	19.2%
Solano County Unincorporated	18,834	4.6%	42	0.8%	99	0.8%	71	3.6%	427	2.8%
SOLANO TOTAL:	413,344	100.0%	5,034	100.0%	12,985	100.0%	1,952	100.0%	15,435	100.0%
SONOMA COUNTY										
Cloverdale	8,618	1.8%	132	2.4%	417	3.1%	163	3.2%	423	2.3%
Cotati	7,265	1.5%	103	1.9%	257	1.9%	114	2.2%	520	2.9%
Healdsburg	11,254	2.3%	119	2.2%	331	2.4%	188	3.7%	516	2.8%
Petaluma	57,941	12.0%	874	16.2%	1,945	14.2%	451	8.8%	1,144	6.3%
Rohnert Park	40,971	8.5%	602	11.2%	1,534	11.4%	760	14.9%	2,124	11.7%
Santa Rosa	167,815	34.7%	2,516	46.6%	6,534	47.9%	1,929	37.7%	7,654	42.0%
Sebastopol	7,379	1.5%	60	1.1%	176	1.3%	5	0.1%	121	0.7%
Sonoma	10,648	2.2%	128	2.4%	353	2.6%	179	3.5%	684	3.8%
Windsor	26,801	5.5%	328	6.1%	719	5.3%	332	6.5%	1,881	10.3%
Sonoma County Unincorporated	145,186	30.0%	536	9.9%	1,364	10.0%	989	19.4%	3,142	17.3%
SONOMA TOTAL:	483,878	100.0%	5,398	100.0%	13,650	100.0%	5,110	100.0%	18,209	100.0%
Bay Area Total	7,150,739	100.0%	83,940	100.0%	214,500	100.0%	39,513	100.0%	182,121	100.0%

Attachment 4

PDA Growth Strategy

The purpose of a PDA Growth Strategy is to ensure that each CMA's transportation investments will support and encourage development in the region's PDAs. Some of the planning activities noted below may be appropriate for CMAs to consider for jurisdictions or areas not currently designated as PDAs if those areas are still considering future housing and job growth. CMAs should incorporate necessary planning, infrastructure and funding for PDAs, as described below:

(1) **Engagement with Local Jurisdictions** – CMAs are to develop a process to regularly engage local planners, public works staff and encourage community participation throughout the planning process and in determining implementation priorities.

(2) **Planning** - Review existing plans and participate in new planning work¹

- Review adopted land use plans - Specific, precise, or community plans for PDAs (or general plans with adopted transit-supportive zoning), particularly those with programmatic EIRs, contain details about circulation and access, pedestrian guidelines, parking and other development-related standards that can help to determine appropriate investments. These plans have undergone significant community involvement and have been adopted by Planning Commissions & City Councils.
- Take an inventory of transportation, infrastructure and implementation sections in land use plans for jurisdiction priorities and cost estimates for transportation infrastructure projects that serve or provide proximate access to PDAs. These may include streetscapes, bike-pedestrian, transit and road improvements, transit station improvements, connectivity projects and transportation demand management projects, including parking structures. For any TOD parking structure project, it is strongly recommended that a cost/benefit analysis be conducted using pricing, unbundling/cash-out, shared parking, shuttles and other locally appropriate TDM strategies to ensure it is built at an appropriate scale and well-managed.
- Inventory jurisdiction affordable housing policies, strategies, zoning and ordinances designed to encourage affordable housing production and/or preserve existing affordable housing. The three broad objectives for the housing policies are to promote housing production overall, ensure that housing units (planned and built) are balanced across income levels, and to avoid displacement of existing residents of the PDAs.

The policies should be targeted to the specific circumstances of each PDA. For example, if the PDA currently does not provide for a mix of income-levels, the policies should be aimed at promoting affordable housing. If the PDA currently is mostly low-income housing, the policies should be aimed at community stabilization.

Starting in October 2013 and for subsequent updates, PDA Growth Strategies will assess existing and future affordable housing needs and make appropriate recommendations to fill gaps in local policies to achieve these goals. This analysis will be coordinated with related work conducted through the Housing and Urban Development (HUD) grant awarded to the region in fall 2011.

- Review ABAG/MTC PDA Assessment results for details about PDA infrastructure needs and priorities²
- Consider non-transportation infrastructure projects, such as sewer and utility upgrades or site assembly/land banking, as they are often a necessary prerequisite for TOD development projects in PDAs. Facilitate funding exchanges (federal for local dollars) when possible to address these funding gaps.

¹ MTC & ABAG staff are available to assist with the review and inventory of adopted land use plans

² In 2009, MTC/ABAG staff conducted an assessment of planned PDAs and their future development needs. Jurisdictions were asked to estimate infrastructure needs and associated costs.

- Participate as a TAC member in local jurisdiction planning processes funded through the regional PDA Planning Program or as requested by jurisdictions. Assist MTC and ABAG staff with oversight to ensure that regional policies are addressed in PDA plans.
- Help develop protocols with MTC, ABAG and Air District staff to assess emissions, as well as related mitigation strategies, as part of regional PDA Planning Program.
- Potential PDAs that do not have adopted plans, call on regional agency staff to assist in the identification of planning and future transportation infrastructure needs.

(3) Funding - Develop guidelines for evaluating OBAG projects that improve multi-modal transportation connections to housing, jobs and commercial activity, considering the following criteria:

- **Projects in High Impact Areas** - Assessment of the project area in which a project is located should be a key component for investment consideration. Key factors defining high impact project areas include;
 - a. Housing – PDAs taking on significant housing growth in the SCS (total number of units and percentage change), including RHNA income allocations,
 - b. Jobs in proximity to housing and transit (both current levels and those included in the SCS),
 - c. Improved transportation choices for all income levels (reduces VMT), proximity to quality transit access, with an emphasis on connectivity (including safety, lighting, etc.)
 - d. Consistency with regional TLC design guidelines or design that encourages multi-modal access: http://www.mtc.ca.gov/planning/smart_growth/tlc/2009_TLC_Design_Guidelines.pdf
- **Projects located in Communities of Concern (COC)** – favorably consider projects located in a COC see: <http://geocommons.com/maps/110983>
- **PDAs with affordable housing preservation and creation strategies** – favorably consider projects in jurisdictions with affordable housing preservation and creation strategies or policies
- **PDAs that overlap with Air District CARE Communities and/or are in proximity to freight transport infrastructure** - Consider projects located in PDAs with highest exposure to PM and Toxic Air Contaminants. Employ best management practices to mitigate exposure and determine where non-motorized investments would best support additional housing production.

II) RHNA Coordination - Given the OBAG connection to RHNA:

- Monitor development of Housing Elements/zoning updates supportive of RHNA.

Process/Timeline

CMAs/MTC amend current funding agreements with PDA Growth Strategy tasks/language	Spring 2012
OBAG adopted by MTC	May 23, 2012
Updated CMA agreements ready for signature	July 1, 2012
CMAs develop PDA Growth Strategy	May - October 2012
PDA Growth Strategy Presentations by CMAs to Joint MTC Planning and ABAG Administrative Committee	November 2012 – December 2012
CMAs program OBAG funds	May 2012 – April 2013
CMAs amend PDA Growth Strategy to incorporate follow-up to local affordable housing policies	October 2013
CMAs submit annual progress reports related to PDA Growth Strategies, including status of jurisdiction progress on development/adoption of housing elements and complete streets ordinances.	October 2013, Ongoing

RAFT **Bay Area**

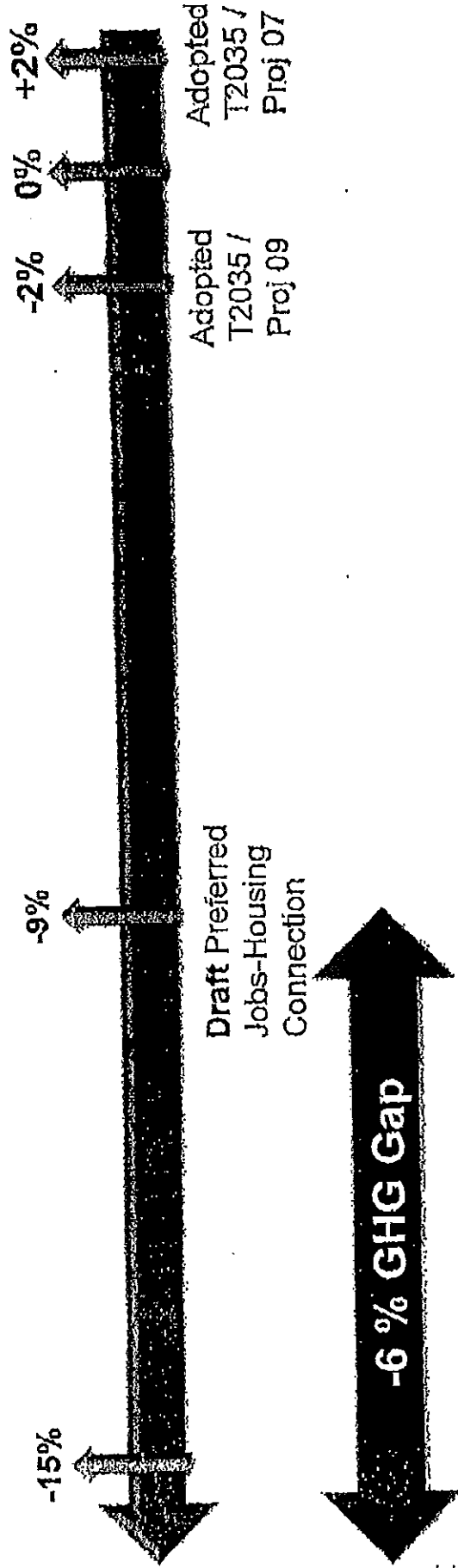
Draft Transportation Investment Strategy

April 13, 2012

Excerpts

April 18, 2012
Authority Meeting
Handout
Agenda Item 4.B.6

GHG Emission Reductions Update - 2035

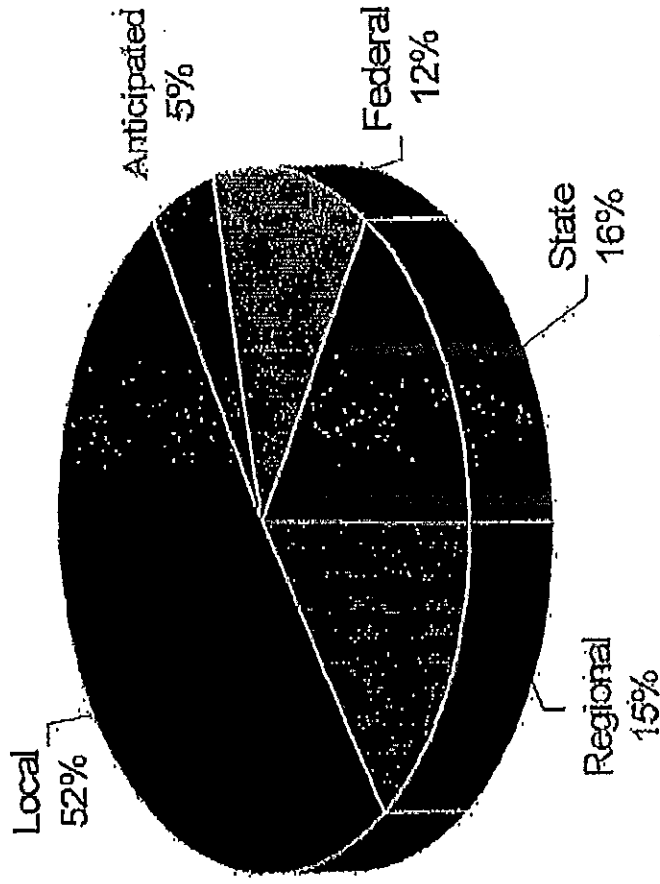


- Bay Area's target for 2020 (-7 %) is achieved
- Planned transportation projects have a marginal effect on GHG emissions
 - Operations & Maintenance
 - Cost: \$242 B (88%)
- GHG: Underpins GHG reductions from land use strategy
 - Capacity-Increasing Projects
 - Cost: \$35 B (12%)
- GHG: regional effects vary slightly by mode and by project

Revenue Forecasts Plan Bay Area 28-Year Revenues -- \$277 Billion*

- Committed Revenue - \$186 B
- Conditioned Discretionary - \$35 B
 - \$34 B (97%) to Transit Operating and Maintenance
 - \$1 B (3%) to Other
- Revenues Available for Trade-Offs - \$56 B
- Total - \$277 B

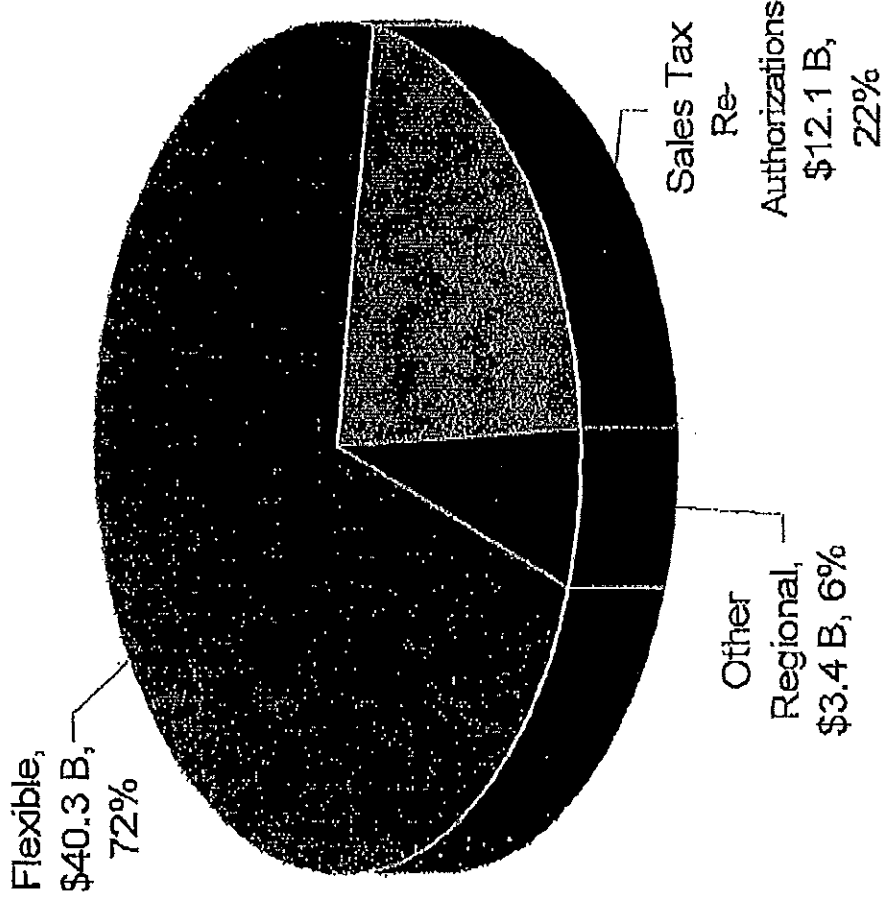
Total Revenue by Source



*represents an \$11 billion increase from February (\$9 billion for regional and Santa Clara express lanes and \$2 billion for San Francisco cordon pricing).

Revenue Forecasts Plan Bay Area Revenue Available for Trade-Offs - \$56 Billion

Trade-Off Revenue by Source



Flexible	\$ Billions, YOES
STIP	8.6
STIP & CMAQ	7.4
Regional Gas Tax	5.1
Anticipated	14.0
New & Small Starts	2.5
New Bridge Tolls	2.7
Subtotal	40.3
Other Regional	\$ Billions, YOES
STIP & APC	3.8
TFCA & AB 434	0.1
High Speed Rail	2.5
Subtotal	6.4
Sales Tax Re-Authorization	\$12.1
Sales Tax	\$12.1
Subtotal	\$56.0

Investment Strategy #1:

Two Investment Options - Option A

Option A Climate Policy Initiatives: Clean Vehicles/Smart Driving Emphasis

Policy Initiative	Cost (in millions of YOES)	Per-Capita CO ₂ Emissions Reductions (2035)
Electric Vehicle Acceleration	\$240	-1%
• Regional Public Charger Network		
Vehicle Buy-Back & Plug-In or Electric Vehicles Purchase Incentives	\$180	-1%
Car Sharing	\$4	-1%
• For Profit and Non-Profit Car Sharing (includes clean vehicle car sharing)		
• Peer-to-Peer Car Sharing (includes clean vehicle car sharing)		
Vanpool Incentives	\$6	-1%
Clean Vehicles Feebate Program	\$25 for admin costs	-1%
Smart Driving Strategy	\$230	-2%
• Tire Pressure Cap Rebate Program		
• In-vehicle Fuel Economy Meters Rebate Program		
• Education Campaign		
Total	\$685	-7%

Investment Strategy #1:

Two Investment Options - Option B

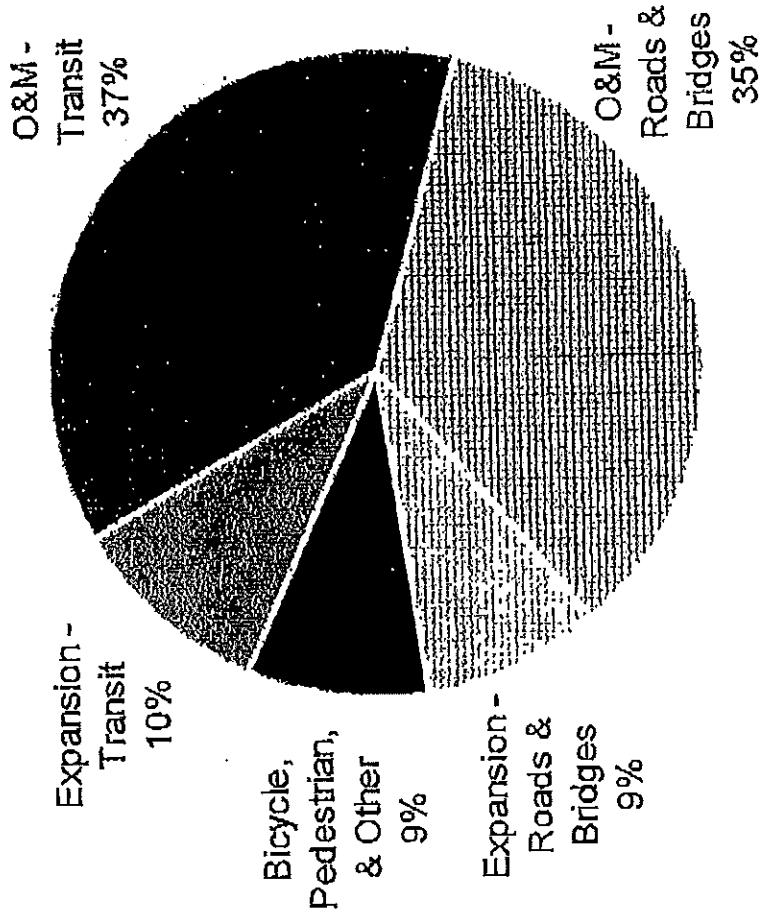


Climate Policy Initiatives: Fuel Efficiency Emphasis

Policy Initiative	Cost (in millions of YOE\$)	Per-Capita CO ₂ Emissions Reductions (2035)
55 mph Speed Limit on Bay Area Freeways	\$260	-6%
Smart Driving Strategy	\$230	-2%
<ul style="list-style-type: none"> • Tire Pressure Cap Rebate Program • In-vehicle Fuel Economy Meters Rebate Program • Education Campaign 		
Total	\$490	-8%

Trade-Off Summary

Proposed Trade-Off Expenditure by Function



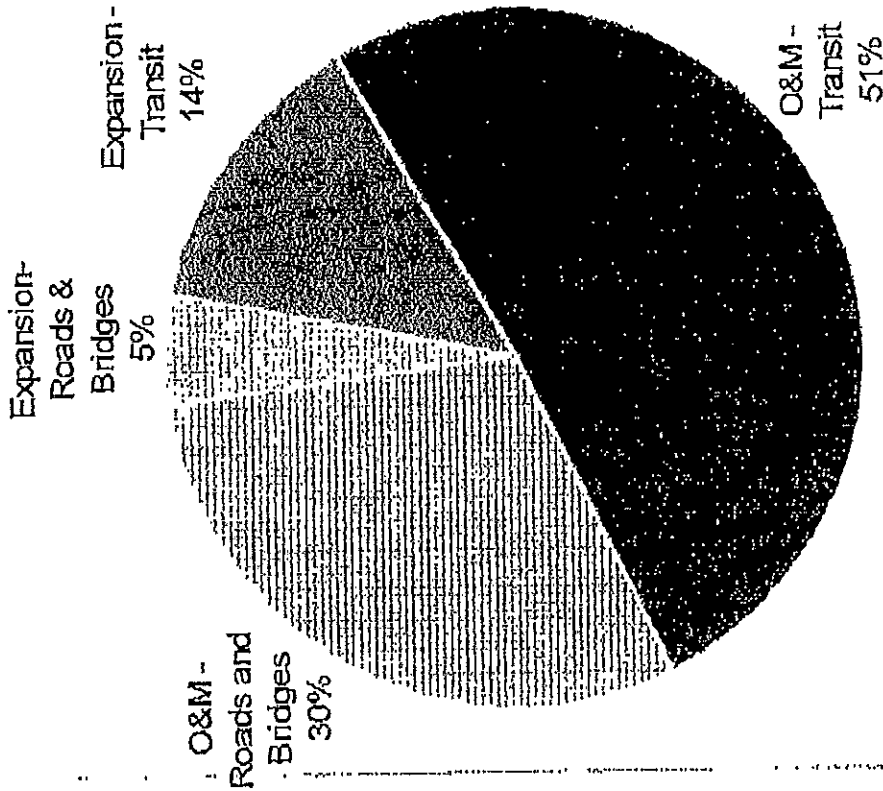
- Proposed Trade-Off Expenditures: \$56 B
- 72% directed to Maintenance & Operations
- 47% directed to Public Transit

BayArea

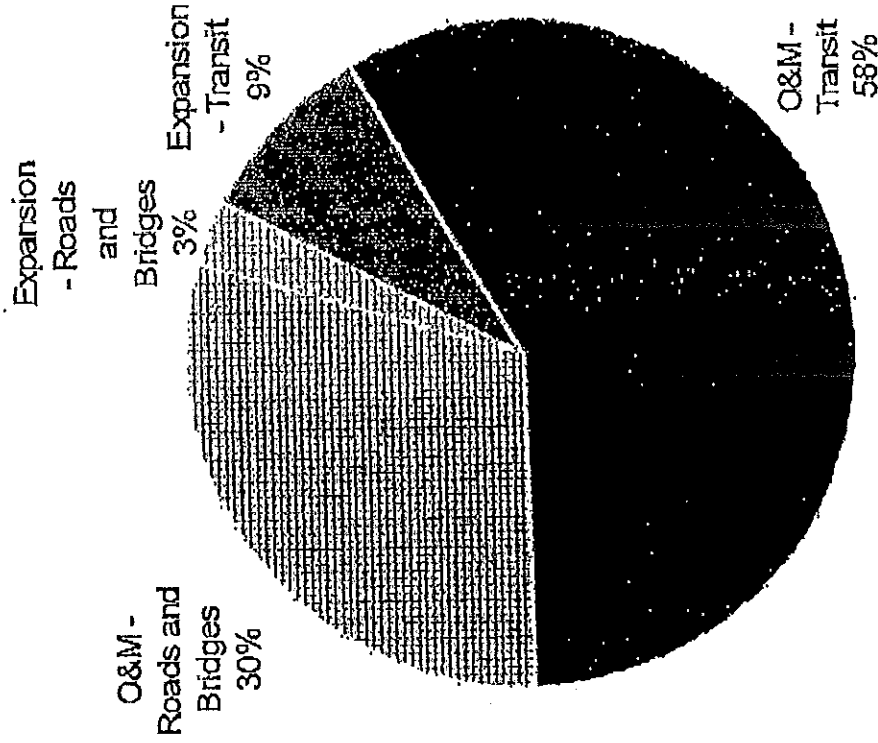
Plan

Plan Bay Area Summary

T2035 by Function - \$218 B



Plan Bay Area by Function - \$277 B



See detail in Appendices 1-3

Next Steps

- 1. Seek ABAG / MTC approval on preferred land use / transportation strategy on May 17
- 2. Present alternatives to be evaluated in Plan Bay Area EIR on June 8
- 3. Release draft Plan Bay Area and EIR in December 2012
- 4. Adopt final Plan Bay Area and certify final EIR in April 2013