State Route 84

Corridor System Management Plan

December 2010

CALTRANS DISTRICT 4

corridor system management plans

state route 84
corridor system management plan

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stakeholder acknowledgment

District 4 wishes to acknowledge the time and contributions of its partner agencies. Current and continuing Corridor System Management Plan (CSMP) development is dependent upon such participation. This CSMP represents a cooperative commitment to develop a corridor management vision for the SR-84 Corridor. The partners include:

- Alameda County Transportation Commission
- Contra Costa Transportation Authority
- San Mateo City/County Association of Governments
- Solano Transportation Authority
- Metropolitan Transportation Commission

A website, www.corridormobility.org has been created to support the development of the CSMPs and to provide stakeholders and the public with more information and an opportunity to provide input and review documents.

Disclaimer: The information, opinions, commitments, policies and strategies detailed in this document are those of Caltrans District 4 and do not necessarily represent the information, opinions, commitments, policies and strategies of partner agencies or other organizations identified in this document.

dedication

To Patricia “Pat” Weston (1951-2009)

Caltrans District 4 Planners dedicate this Corridor System Management Plan (CSMP) to the memory of Pat Weston, Chief, Caltrans Office of Advance System Planning, whose seemingly limitless energy and passion for transportation system planning in California has been an inspiration to countless transportation planners and engineers within Caltrans and its partner agencies. Pat's efforts elevated the importance of corridor-based system planning, performance measurement for system monitoring, and the blending of long-range planning with near-term operational strategies. This has resulted in stronger planning partnerships with Traffic Operations in Caltrans and led directly to the requirement to conduct comprehensive corridor planning through CSMP documents. This is but one of a long list of major achievements in Pat's lengthy Caltrans career. She generously shared her knowledge, wisdom and guidance with us over the years. She will be sorely missed as a planner, mentor and friend.

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executive summary

State Route 84 (SR-84) is technically a North-South route that within the San Francisco Bay Area serves as an East-West route connecting communities from the Peninsula to the inland areas of the East Bay and Delta areas. The route bisects four Bay Area counties (San Mateo, Alameda, Contra Costa, and Solano). North of Solano County it provides an interregional connection to the Sacramento region.

Government Code 65086 requires the California Department of Transportation (Caltrans) to conduct long-range planning to identify future highway improvements and new transportation corridors in cooperation with its planning partners. This CSMP is a transportation planning document that reports on existing and future traffic conditions and proposes traffic management strategies and capital improvements to maintain and enhance mobility within each corridor. CSMPs satisfy requirements for the funding of highway improvements under the Corridor Mobility Improvement Account (CMIA) established after the passage of Proposition 1B in 2006. CSMPs support the Governor's Strategic Growth Plan (SGP), which calls for an infrastructure improvement program that includes a major transportation component (GoCalifornia). The CMIA funded project is the SR-84 Expressway Project in Livermore. The project will accommodate future traffic demand and improve safety and connectivity to I-580 with the new Isabel interchange.

SR-84 is a largely conventional roadway with some expressway and freeway segments. Key trouble spots were identified as (San Mateo County) US 101/Woodside Road, Dumbarton Bridge approaches, Bayfront Expressway; (Alameda County) Dumbarton Toll Plaza, Thornton to Peralta, Sunol Corners and Vallecitos Road at the I-680 Northbound (NB) off-ramp.

The CSMP also describes the current land use, transit, bicycle/pedestrian facilities, and the most recent policy initiatives designed to meet the requirements of Assembly Bill (AB) 32 and Senate Bill (SB) 375 on greenhouse gas emissions reduction. These are provided as context to future development in the corridor. SR-84 traverses environmentally sensitive areas that may also include hazardous materials or facilities, habitats of threatened or potentially threatened species, sensitive wetlands, and the presence of historic bridges or other structures. The corridor also traverses a number of Priority Conservation Areas (PCA) and Priority Development Areas (PDA).

SR-84 connects the Peninsula and East Bay, including the Livermore Valley via the Dumbarton Bridge. SR-84 has a large commute volume along the Dumbarton

Bridge corridor to US 101, as well as along Isabel Avenue, Vallecitos Road, Niles Canyon Road and Thornton Avenue making connections to I-580, I-680 and I-880.

The SR-84 future concept ranges from a two-lane conventional roadway to a seven-lane freeway with a High Occupancy Vehicle (HOV) lane. The primary system management strategy for SR-84 between I-580 and I-680 is to upgrade the facility to expressway standards. Other recommended strategies to improve portions of corridor in key trouble spots include curve corrections, addition of truck climbing lanes, improving HOV connectivity and other operational improvements. In addition, increasing and/or establishing new bus and rail services would complement the entire transportation system. Increasing Transit Oriented Developments (TODs) in key locations would also support a stronger connection of land use to transportation. It is also important to maintain and enhance the bicycle and pedestrian networks in the corridor by implementing Metropolitan Transportation Commission (MTC's) Bicycle Plan and expanding trail systems.

I. CORRIDOR PLANNING PROCESS

CSMP Overview

Government Code 65086 states that "the Department of Transportation as owner-operator of the State Highway System (SHS) shall carry out long-term State highway system planning to identify future highway improvement." These reports are currently identified as Corridor Plans (CPs) or Corridor System Management Plan (CSMPs). Guided by regional, State, and federal policies and guidelines, this CSMP is focused on anticipating future improvements primarily needed to address a 25-year horizon of future growth.

CSMPs are being developed throughout the State for corridors within which funding is being used from the Corridor Mobility Improvement Account (CMIA) and Highway 99 Bond Programs created by the passage of the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, approved by the voters as Proposition 1B in November 2006. The intent is to eventually develop CSMPs for all urban freeway corridors.

The CSMP transportation network is defined to include, but is not limited to, State Highways, major arterials, intercity and regional rail service, regional transit services, and regional bicycle facilities. In order to recommend specific corridor improvements, a corridor assessment is performed based on current and forecasted demand and growth in the corridor (current and planned land uses, existing operating conditions, and planned and programmed improvements). Long-range performance expectations and potential deficiencies are identified. Conclusions are reached in conjunction with internal and external partners.

While considering the transportation network of the corridor as a whole, including alternative modes, Caltrans recognizes that its authority generally lies within the SHS. This report's emphasis is on State highway facilities.

Purpose and Need Statement

On March 15, 2007, the CTC adopted Resolution CMIS-P-0607-02. In Sections 2.12 and 2.13 of this resolution, the California Transportation Commission (CTC) resolved that "…the Commission expects Caltrans and regional agencies to preserve the mobility gains of urban corridor capacity improvements over time that will be described in CSMPs, which may include the installations of traffic detection equipment, the use of ramp metering, operational improvements, and other traffic management elements as appropriate…" and "…the nominating agencies including the installations of detection equipment and other supporting elements, to the (CMIA) project delivery council on a semiannual basis…."

The immediate purpose of preparing CSMPs is to satisfy the requirements to qualify for funding highway improvements under the CMIA and Highway 99 Bond programs, and to preserve the mobility gains of highway improvements funded through this program. The CTC adopted guidelines and a program of projects for funding. CSMPs are prepared based on the need to efficiently and effectively use all transportation modes and facilities in congested corridors so as to maximize mobility, improve safety and reduce delay costs.

Another purpose of a CP or CSMP is to define the "concept" or configuration of a State owned/operated facility, projecting to a 25-year planning horizon. It describes corridor characteristics such as the existing transportation network and land use, and projects the long-range corridor travel needs. A CP or CSMP is not meant to be an encyclopedia of corridor information, but rather a statement by California Department of Transportation (Caltrans) on what the future facility should be to better manage projected travel demand and other considerations such as interregional needs, State and regional policies, as well as local concerns.

CPs or CSMPs are developed for all 56 statutorily identified State Routes in District 4. This document provides a concept for State Route 84 which traverses San Mateo, Alameda, and Solano counties within District 4.

First Generation CSMP

This CSMP represents a "first generation" of corridor plans informing the transportation planning process, using a "modified transportation concept report" format for highway facilities that are largely conventional or expressway in nature. Since Caltrans and the Regions launched this first cycle of corridor system management planning in 2007 (called *first generation CSMPs*), the statewide plan-

ning policy context has evolved significantly. Assembly Bill (AB) 32 policy on reducing greenhouse gas emissions has moved into implementation with passage of Senate Bill (SB) 375, landmark legislation requiring the regions to meet state-designated greenhouse gas (GHG) emissions reduction targets. The CTC has developed guidance on how the regions will develop a Sustainable Community Strategy (SCS) in their next Regional Transportation Plan (RTP) cycle; Metropolitan Transportation Commission's (MTC) next RTP is slated for completion in 2013. The SCS will promote strategies to reduce GHG emissions through more efficient land use patterns, reduce vehicle travel, support transit, bicycle and pedestrian mode choices, and improve supply and affordability of housing within the Bay Area to reduce commuting into the region.

The *second generation* CSMPs will reflect the SCS and the 2013 RTP, and will grapple with the issue of providing mobility and reducing highway congestion within the context of a new regional planning framework. The second generation CSMP scope will expand to include integrated land use and transportation (in the context of SCS required by SB 375) and a more comprehensive look at transit and non-motorized travel strategies and options.

State's Interregional Responsibility

The SHS serves primarily interregional and regional travel demand. While this is not to preclude SHS access to specific destinations such as public facilities or major tourist attractions, development and modification of the SHS is conducted in the context of the mobility of regional and statewide to-and-through movement of people and goods.

California SB 45 of 1998 stipulates that the State will nominate transportation improvements that facilitate the movement of people and goods between the State's 43 transportation regions as well as to and through the State. To this end the State is responsible for developing highway system performance standards pertinent to accommodating interregional travel demand, and specifying corridor facility concepts that improve interregional travel through the SHS. The corridor concepts indicated in CPs reflect the State's determination regarding the system accommodation of interregional, regional, and local travel needs.

Consistency of Corridor Planning

Corridor Plan preparation is guided by several levels of government policy and direction. Applicable Federal and State guidelines, such as the Safe Accountable Flexible Efficient Transportation Equity Act (SAFETEA-LU), the California Transportation Plan 2030 (CTP 2030), MTC's RTP, and the Interregional Transportation Strategic Plan (ITSP), provide the policy foundation for this Corridor Plan. The current State Highway Operation and Protection Program (SHOPP), a program of maintenance, safety, and rehabilitation improvements, and the State Transportation Improvement Program (STIP) are also critical inputs to the development of this CSMP.

A full discussion of federal, State, and regional Transportation Planning efforts and policies related to CSMPs and CPs are included as Appendix B.

Corridor Performance Measures and Objectives

Performance measures and objectives serve to focus directed action on desired corridor strategies and improvements. The performance measures, descriptions and corresponding objectives used were: Mobility - reduce delay within the corridor; and Safety - reduce accident and injury rate; and Preservation - reduce distressed lane miles. Performance measures are illustrated in Table 1 below.

Table 1. CSMP Performance Measures

Performance Measure	Performance Measure Description	Objective Desired Outcome
Mobility	LOS, Vehicle Hours of Delay (PeMS*, Probe Vehicles)	Reduce delay within the corridor
Safety	TASAS** Data	Reduce accident and injury rate
Preservation	Distressed Lane Miles	Reduce Distressed Lane Miles

*Freeway Performance Measurement System

**Traffic Accident Surveillance and Analysis System

II. CORRIDOR OVERVIEW

Corridor Description

SR-84 is technically a north-south route that within the San Francisco Bay Area serves as an east-west route connecting communities from the Peninsula to the inland areas of the East Bay and Delta areas. The route bisects four Bay Area counties. There are four subsections identified for this route in the Bay Area:

Coastal—Peninsula

The Coastal–Peninsula section is an east-west two-lane conventional roadway traversing mountainous terrain from San Gregorio to Menlo Park, where the roadway becomes Bayfront Expressway leading to the Dumbarton Bridge.

Dumbarton Bridge-Newark—Fremont-Livermore

SR-84 continues as a six-lane freeway across the Dumbarton Bridge (a toll facility) and through the City of Newark. After I-880 it traverses Fremont city streets as a conventional highway. SR-84 continues across the Diablo Range through Niles Canyon and Sunol as a two-lane highway until it intersects I-680. From I-680 the route continues as a two-lane conventional highway/expressway with truck climbing lanes (Vallecitos Road) before connecting with I-580 in Livermore.

I-580—Brentwood

This section of SR-84 is unconstructed through Alameda County north of I-580 and Contra Costa County to SR-4. There is a route break from SR-4 to the Solano County town of Rio Vista.

San Joaquin—Sacramento Delta

North of Rio Vista SR-84 is a north-south two-lane conventional highway that begins at Route 12 and passes via ferry to Ryer Island where it connects to Route 220, continuing north past the Solano/Yolo county line towards Sacramento.

Figure 1 on the next page illustrates the overall SR-84 corridor in District 4.

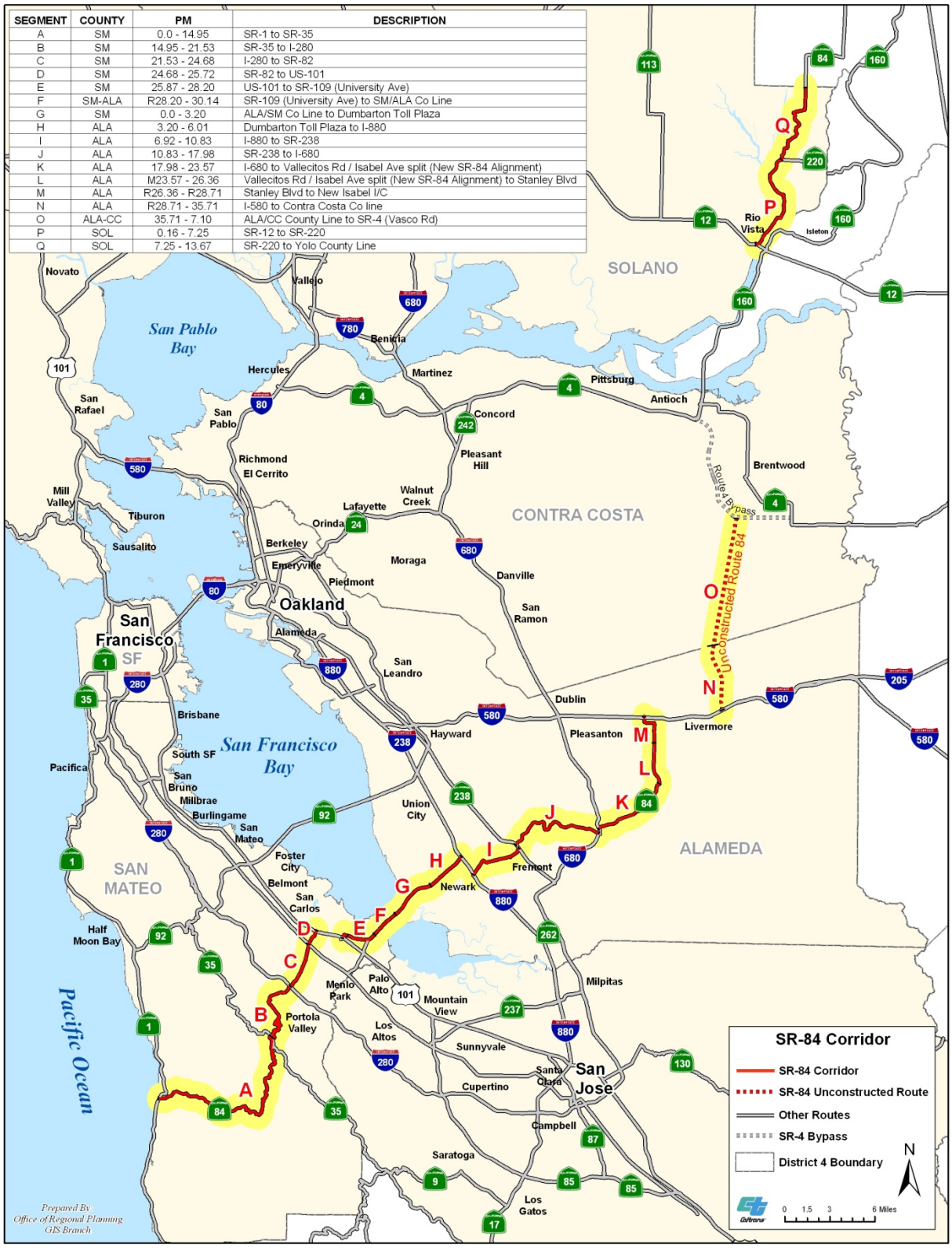


Figure 1. SR -84 Corridor Overview Map.

Alignment and Geometrics

Specific alignment and geometrics information for the SR-84 corridor (Table 2) is described as follows (mileage is approximate):

Table 2. Alignment and Geometrics.

Segment	County	Location and Approx. Post Mile	Facility	Description
A	SM	SR-1 to SR-35 (PM 0-14.95)	2-lane conventional	Mountainous terrain (rural setting)
B	SM	SR-35 to I-280 (PM 14.95-21.53)	2-lane conventional	Mountainous terrain (rural setting)
C	SM	I-280 to SR-82 (PM 21.53-24.32)	4-lane conventional	Rolling to Flat terrain (rural/ urbanized setting)
D	SM	SR-82 to US 101 (PM 24.32-25.72)	4-lane expressway	Flat terrain (urbanized setting)
E	SM	US 101 to Univ. Ave (SR-109) (PM 25.87-28.20)	6-lane expressway	Flat terrain (urbanized setting)
F G H	SM/ALA	Univ. Ave to I-880 (DB Bridge) (PM SM 28.20- ALA 6.01)	6-lane freeway	Flat terrain (urbanized setting)
I	ALA	I-880 to Fremont/Peralta (PM 6.01-8.45)	4-lane conventional	Flat terrain (urbanized setting)
I	ALA	Fremont/Peralta to SR-238 (PM 8.45-10.83)	2-lane conventional	Flat terrain (urbanized setting)
J	ALA	SR-238 to I-680 (PM 10.83-17.98)	2-lane conventional	Rolling terrain (rural setting)
K	ALA	I-680 to east of Vallecitos at Atomic (PM 17.98-21.04)	2-lane conventional	Rolling terrain (rural setting)
K	ALA	East of Vallecitos at Atomic to Isabel Ave. (PM 21.04-23.29)	2-lane conventional + 1 TCL	Rolling terrain (rural setting)
L	ALA	Isabel Ave to Stanley Blvd. (PM 23.29-R26.35)	2-lane conventional 4-lane w/ project *	Flat terrain (urbanized setting)
M	ALA	Stanley Blvd. to I-580 (PM R26.35-27.3)	2-lane conventional 6-lane w/ project *	Flat terrain (urbanized setting)
N	ALA	PM R28.71-35.71	Unconstructed	Mountainous (rural setting)
O	CC	PM 0.0-7.10	Unconstructed	Mountainous to Flat terrain (rural setting)
P	SOL	SR-12 to SR-220 (PM 0.16-7.25)	2-lane conventional	Flat terrain (rural setting)
Q	SOL	SR-220 to SOL/YOL County Line (PM 7.25-13.67)	2-lane conventional	Flat terrain (rural setting)

* EAs 297611 and 297621 (84 Widening south of Ruby Hill Dr to Jack London Blvd)

Additional corridor segment description is located in Appendix A. A Highway/Freeway Inventory Map, which illustrates state highway interchanges along the SR-84 corridor, is located in Appendix D.

Demographics

Alameda County is the most populous county along the SR-84 corridor. Its population and the number of households are forecasted to grow by 30 percent by 2035 (see Table 3). Job growth is expected to equal population growth in the county. Vehicle ownership (per household) ranges from 1.75 in Alameda County to 2.0 in San Mateo County (US Census Bureau 2008).

Due to its central location in the region, Alameda County is traversed by many of the region's interregional and regional links. Trips originating outside the county constitute a considerable percentage of the total number of users of the county road system. Alameda County's freeways therefore are significantly impacted by regional population growth. There is a low percentage of vehicle trips on Solano County's section of SR-84; it is primarily used as a local route rather than an interregional route. A significant number of commuters use the Dumbarton Bridge between Alameda County and the Peninsula.

Land Use

Multiple land uses exist along the SR-84 corridor. The western portion of the corridor land use begins with rural-agrarian farmland and ascends to recreational and protected open space in the Santa Cruz Mountains. As SR-84 descends towards the city of Woodside, low density residential land use is prevalent. As SR-84 crosses I-280 and enters Redwood City, the land uses change to include medium to dense commercial and residential uses. Local shopping centers (such as Woodside Plaza and Woodside Manor) exist along the corridor.

Along Bayfront Expressway, SR-84 provides access to major employers such as Tyco Electronics and Sun Microsystems in Menlo Park, as well as access to business and residential uses in both Menlo Park and East Palo Alto. Environmentally sensitive San Francisco Bay wetlands exist along SR-84 in Redwood City, East Palo Alto and Menlo Park as well as on the eastern side of the Dumbarton Bridge (Newark and Fremont).

Protected areas in the vicinity of SR-84 in the City of Fremont include Coyote Hills Regional Park, Ardenwood Historic Farm, and Don Edwards National Wildlife Refuge — all with access from SR-84. As the route continues East through Fremont the land uses change to medium density commercial and residential. Continuing east, SR-84 enters Niles Canyon, where this section of SR-84 is designated as a scenic highway and the land uses are regional park and rural grazing.

SR-84 continues through the Vallecitos Hills/Pigeon Pass area with primarily rural land uses. The route then enters the Livermore Valley and transitions to suburban residential

Table 3. Bay Area Population, Housing and Jobs Forecasts.

County	Population		# Households		#Jobs	
	2005	**2035**	**2005**	**2035**	**2005**	**2035**
Alameda	1,505,300	1,966,300	543,790	707,960	730,270	1,039,680
Contra Costa	1,023,400	1,322,900	368,310	480,480	379,030	555,650
Marin	252,600	274,300	103,180	112,170	135,370	158,280
Napa	133,700	148,800	49,270	54,640	70,690	91,480
San Francisco	795,800	969,000	338,920	415,000	553,090	806,830
San Mateo	721,900	893,000	260,070	322,620	337,350	505,860
Santa Clara	1,763,000	2,431,400	595,700	827,330	872,860	1,412,620
Solano	421,600	506,500	142,040	171,290	150,520	211,880
Sonoma	478,800	561,500	181,800	211,290	220,460	325,110
Total	7,096,500	9,073,700	2,583,080	3,302,780	3,449,740	5,107,390

Source: ABAG Projections 2009.

and commercial uses as it continues through Livermore to I-580. The CTC has adopted a temporary conventional alignment of SR-84 near the new Isabel Avenue interchange. Once the expressway project is opened, the temporary alignment will be rescinded. Livermore Municipal Airport is in the vicinity and serves as a General Aviation Airport handling private, business, and corporate tenants and customers.

After a break in the route, SR-84 continues through the Sacramento-San Joaquin Delta at Rio Vista. Low density residential, commercial and industrial uses exist from Rio Vista northward. Land uses transition to an agricultural focus along the levee road until the Yolo county line.

Regional Blueprint Planning Program

The Regional Blueprint Planning Program supports the smart growth element of the SGP by promoting focused land use choices at the regional and local levels. The Regional Blueprint Planning Program is a voluntary, competitive grant program that supports Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Agencies (RTPAs) to conduct comprehensive scenario planning. Using consensus-building and a broad-based visioning approach its goal is to envision future land use patterns and their potential impacts on a region's transportation system, housing supply, jobs/housing balance, resource management and other protections.

The San Francisco Bay Area participates in the Regional Blueprint planning program through grants funding the Focusing Our Vision Program (FOCUS). This program seeks to work with local governments and others in the Bay Area to collaboratively address issues such as high housing costs, traffic congestion, and protection of natural resources. The primary goal of FOCUS is to encourage future growth near transit and in the existing communities that surround the San Francisco Bay. The goal is also to enhance existing neighborhoods and provide housing and transportation choices for all residents.

Priority Development Areas

Beginning in 2007, local governments in the Bay Area through the FOCUS program have applied for regional designation of an area within their community as a Priority Development Area (PDA). PDAs are infill development opportunities within existing communities. They are committed to creating more housing choices in locations easily accessible to transit, jobs, shopping and services. To be eligible to become a PDA, an area had to be within an existing community, near existing or planned fixed transit or served by comparable bus service, and planned for more housing. A planned area is part of an existing plan that is more specific than a general plan, such as a specific plan or an area plan. A potential 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 needs changes.

The SR-84 corridor has the following approved PDAs:

- City of Redwood City—Downtown Area
- City of Fremont—Centerville
- City of Fremont—Central Business District (area around Fremont BART Station)
- City of Union City—Intermodal Station District (area around Union City BART Station)
- City of Livermore—Downtown

The SR-84 corridor has the following potential PDAs:

- City of Menlo Park—El Camino Real Corridor and Downtown
- City of Newark—Dumbarton Transit Area

Figure 2 illustrates these PDAs in the SR-84 corridor.

Sustainable Communities Strategy

SB 375 requires each region to meet State-established GHG emission targets for automobiles and light trucks for 2020 and 2035. MPOs must accurately account for the environmental benefits of more compact development and reduced vehicle miles traveled. If regions develop integrated land use, housing and transportation plans that meet the SB 375 targets, new projects in these regions can be relieved of certain review requirements of the California Environmental Quality Act (CEQA). The targets apply to the regions in the State covered by MPOs.

The next update of the MTC RTP 2013 will include an SCS as required by SB 375. The bill synchronizes the regional housing needs assessment (RHNA) process with the RTP process, requires local governments to rezone their general plans consistent with the updated housing element within three years of adoption, and provides that RHNA allocations must be consistent with the development pattern in the SCS. The SCS will lay out how GHG emissions reduction targets will be met for cars and light trucks. This will impact land use and travel patterns in the long-range planning horizon.

Environmental Factors and Constraints

Figure 3 on the next page illustrates known environmental constraints for the SR-84 corridor. These may include the presence of hazardous materials or facilities (large concentrations in Redwood City, Menlo Park, Fremont, Livermore and Rio Vista), habitats of threatened or potentially threatened species, sensitive wetlands (Redwood City, Menlo Park, Fremont, and north of Rio Vista) and/or the presence of historic bridges or other structures. Niles Canyon Road (Segment J) has an especially large concentration of historic bridges.

Priority Conservation Areas

As part of the FOCUS program, Priority Conservation Areas (PCAs) are areas of regional significance that have broad community support and an urgent need for protection. These areas provide important agricultural, natural resource, historic, scenic, cultural, recreational, and/or ecological values and ecosystem functions. The purpose of designating PCAs through the FOCUS Program is to accelerate protection of key natural resources. Toward this effort, regional agencies are working with state agencies and funding entities. The SR-84 corridor passes through PCAs where it intersects the Bay Trail and the Bay Area Ridge Trails, as well as Coyote Hills Regional Park and South Livermore.

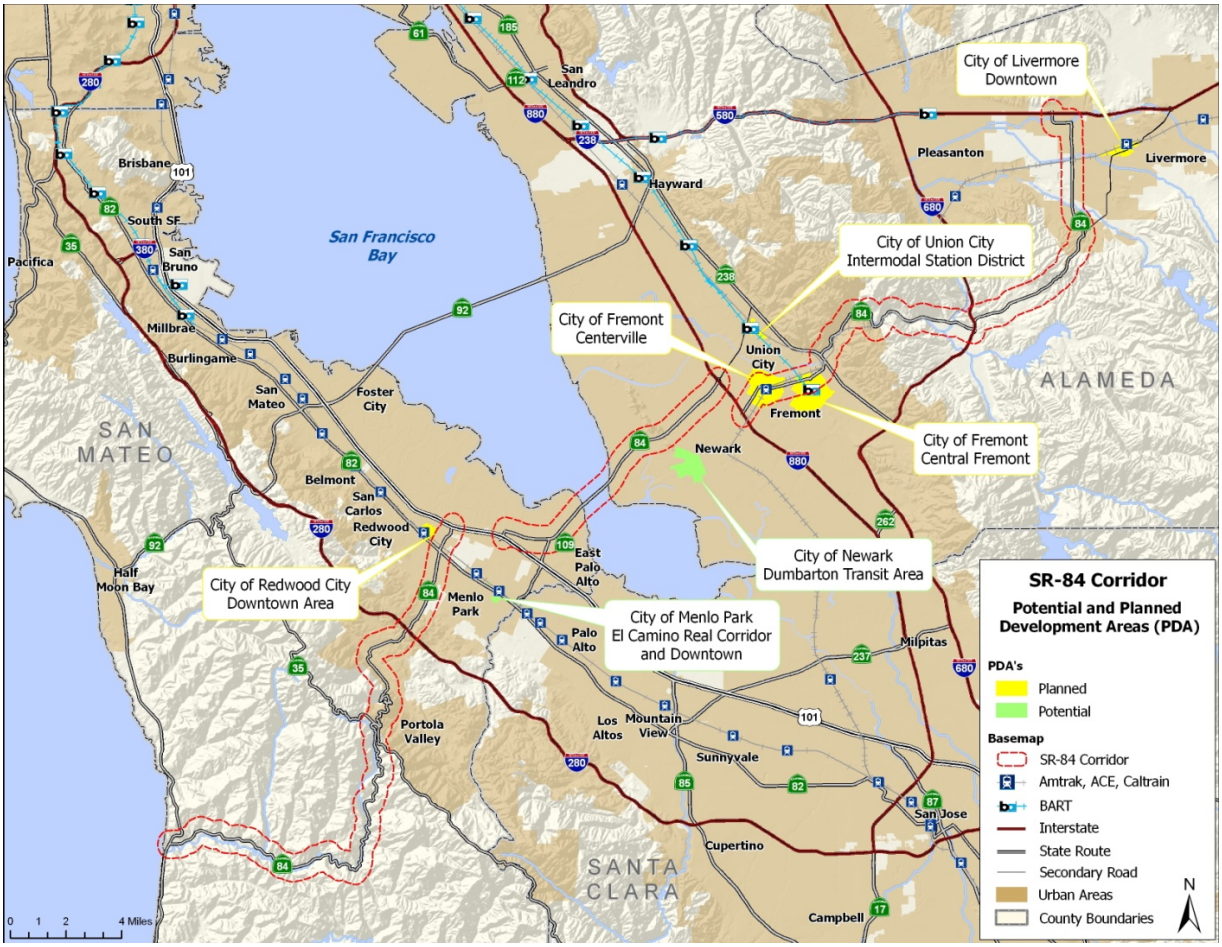


Figure 2. Priority Development Areas in the SR-84 Corridor.

Unconstructed SR-84 in Alameda and Contra Costa counties (Segments N and O) passes through the North Livermore PCA as well as two PCAs in Contra Costa County: the East Contra Costa County Habitat Conservation Plan/ Natural Community Conservation Plan area, as well as the Contra Costa County Agricultural Core.

This information needs to be taken into consideration when proposing any improvements or modifications to state facilities within the corridor.

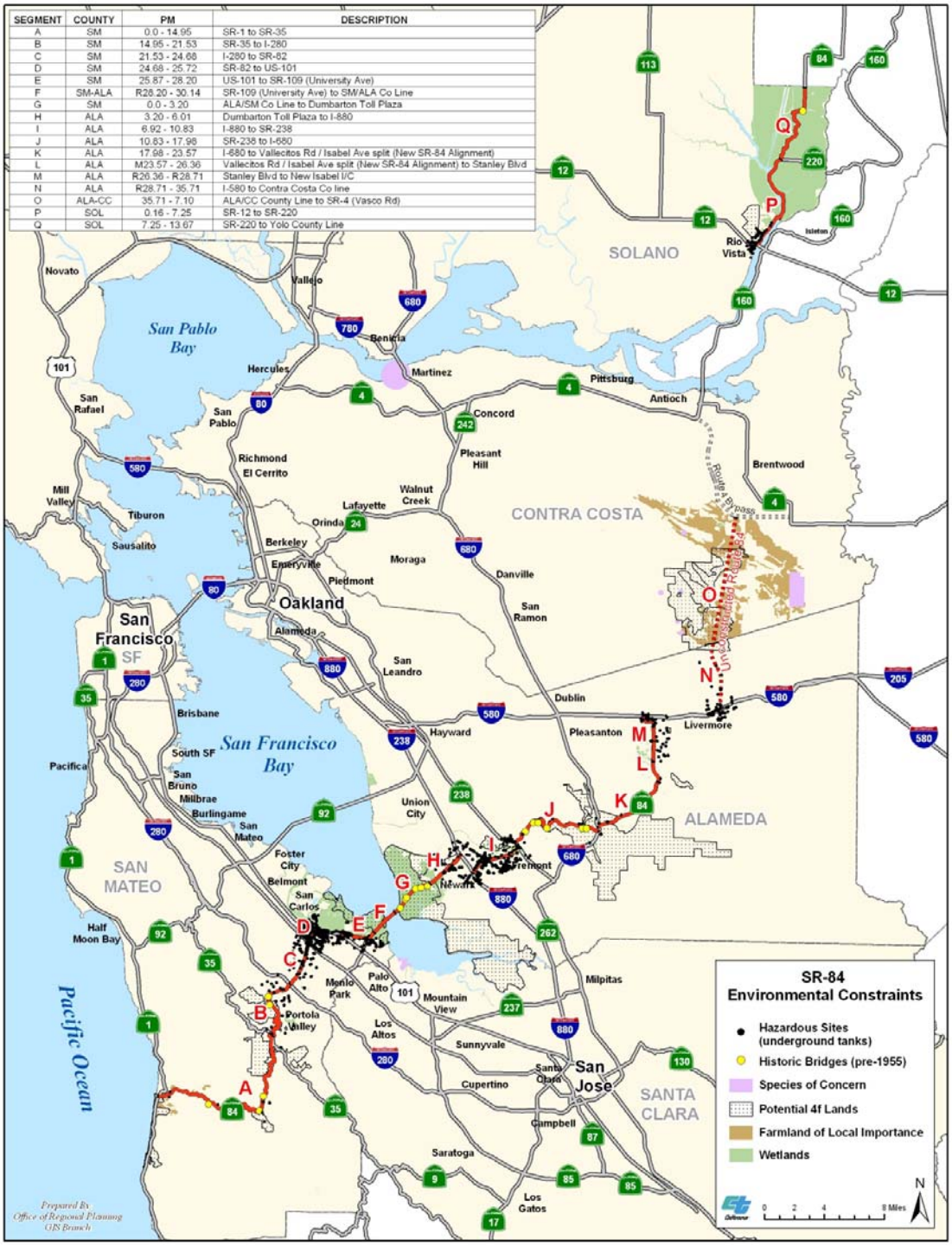


Figure 3. SR-84 Environmental Factors and Constraints.

Sea Level Rise

Sea level rise and storm surge, more frequent and severe heat waves, and multiple changes concerning precipitation are among the three anticipated climate changes of particular significance to the transportation system. Caltrans emphasizes a dual approach to managing climate risks with measures to reduce GHG emissions from transportation and minimizing the impacts on the essential transportation infrastructure through adaptation strategies.*

Adaptation strategies related to corridor planning include:

- Prioritize long-term improvements needed to reduce vulnerability.
- Identify at-risk facilities on particular route segments.
- Evaluate climate impacts on travel, modes, and emergency response.
- Integrate information on climatic events into transportation operational systems.

According to the Caltrans *Vulnerability of Transportation Systems to Sea Level Rise Preliminary Assessment* (February 2009) up to 13 miles of SR-84 (7.4 miles in San Mateo County and 5.6 miles in Alameda County) would be at risk given a 55-inch sea level rise by the year 2100.

Route Designations

Table 4 notes various route designations for SR-84. Additional corridor data is provided in Appendix A.

Table 4. SR-84 Corridor Route Designations.

Freeway and Expressway (F&E)	SR-84 from: (a) The westerly approach to the Dumbarton Bridge to Route 880. (b) Route 880 to Route 238. (c) Route 680 near Scotts Corners to Route 580 in Livermore. (d) Route 580 in Livermore to Route 4 near Brentwood. (e) Route 12 at Rio Vista to Yolo County Line (as defined in California Streets and Highway Code Section 253.5)
Functional Classification	Freeway/Expressway, Major Collector, Principal Arterial
Trucking Designations	STAA Terminal Access Route (SM PM R27.66 – R30.15/ALA PM 3.75 – 6.01, PM 17.99-19.93, PM 24.36-29.71) Access Restriction ALA PM 10.83-17.99 (No Hazardous Materials).
Trucking Facilities	None
National Highway System (NHS)	Yes ALA PM 0.0 – 6.01 (Dumbarton Bridge to I-880)
Scenic Highway	Yes ALA PM 10.8 – 17.9 (Niles Canyon Road)
Lifeline Corridor	No
Traffic Operations System (TOS) elements	Changeable Message Signs, Highway Advisory Radio, and vehicle detectors on Dumbarton Bridge segment
Interregional Road System (IRRS)	No
Metropolitan Planning Organization (MPO)/ Congestion Management Agency (CMA)	MPO : Metropolitan Transportation Commission (MTC) CMA: San Mateo City/County Association of Governments (C/CAG), Alameda County Transportation Commission (Alameda CTC), Contra Costa Transportation Authority (CCTA), Solano Transportation Authority (STA)

*A Report from: California Department of Transportation and Business, Transportation and Housing Agency. California's Changing Climate Assessing Potential Risks and Adaptation Strategies for the State Transportation Infrastructure Preliminary Report, Final Draft (February 2009).

Trip Information

Commuting

SR-84 makes many significant connections for commute purposes: connecting to I-280 and US 101on the Peninsula, connecting the Peninsula to the East Bay via the Dumbarton Bridge, as well as connecting the Livermore Valley and Tri-Valley area to I-580, I-680 and I-880. Given the number of people who live in the East Bay and work in San Mateo and Santa Clara Counties, SR-84's largest commute volume is along the Dumbarton Bridge corridor. Origin/Destination forecasts were conducted for 2035 to illustrate future high-level commuting trends. This analysis focused on two screenlines: the Dumbarton Bridge and north of Stanley Boulevard:

- Dumbarton Bridge: the majority of traffic will access US 101or I-280 after crossing the bridge westbound in the AM; traffic accessing I-880 or I-680 vs. local roads will be split evenly after crossing the bridge eastbound in the PM.
- North of Stanley: the majority of traffic will access I-580 traveling northbound in the AM, and access local roads traveling southbound in the PM.

The Origin/Destination diagrams for this analysis are located in Appendix I.

In some segments this route is used as an alternative to the Bay Area's congested regional freeway system. Bicycles are allowed on the entire route (including the Dumbarton Bridge via a bicycle/pedestrian path).

Goods Movement

Goods movement is an integral element of the Bay Area economy and transportation system. Related businesses and industries function within the region's transportation infrastructure to supply, produce, warehouse/store, sell, transport, and deliver goods. Transportation by truck is the most common mode used, and throughout the Bay Area truck volume is expected to increase by 16 percent by 2035. Table 5 lists the truck restrictions along SR-84 in District 4. Regarding freight rail, an active Union Pacific freight rail line is utilized parallel to SR-84 in Niles Canyon between Fremont and Sunol. There are seven trains per day that traverse this section (four through trains and three local). Along the Dumbarton Bridge corridor a parallel rail line exists but is not currently utilized.

Recreational

SR-84 in San Mateo County is highly used for recreational purposes. It is a well known bicycle route connection to the Pacific Coast. There are numerous recreational opportunities adjacent to SR-84 through the Santa Cruz Mountains. In Alameda County, the Niles Canyon segment of SR-84 sees a large number of weekend recreational cyclists. In addition, the Niles Canyon Railway operates a weekend excursion train between the Niles District of Fremont and Sunol. SR-84 in the Livermore area accesses a number of commercial wineries open to public tasting.

Table 5. SR -84 Truck Restrictions.

County	BEG PM	END PM	BEGIN LOCATION	END LOCATION	DESIG*	KPRA**	COMMENT
SM	0.000	21.537	Jct Rte 1	Jct Rte 280	A	<30	
SM	21.537	25.721	Jct Rte 280	N Jct 101	CL	40	Route break: PM 25.721 to R25.810.
SM	R25.81	R27.659	N Jct 101 Via Marsh Road	Jct Rte 114	CL	40	
SM	R27.659	R30.149	Jct Rte 114	San Mateo/ Alameda County Line	TA		
ALA	R0	R3.747	San Mateo/Alameda County Line	Thornton Ave. in Newark	TA	40	
ALA	R3.747	R6.014	Thornton Ave. in Newark	N. Jct 880	TA		R6.014 = 6.922
ALA	6.922	10.820	S Jct 880 - Thornton Ave	S Jct Rte 238	A	<30	
ALA	10.830	17.987	Rte 238 (Mission Blvd.)	S. Jct Rte 680	A	32	Trucks restricted from transporting hazardous materials/waste due to adjacent drinking water source. (Otherwise, route is Advisory 32.)
ALA	R17.987	19.930	N Jct Rte 680	Vallecitos Nuclear Center ~2 miles north of Jct 680	TA		
ALA	19.930	24.360	Vallecitos Nuclear Center ~2 miles north of Jct 680	Vineyard Ave. - 4.4 miles north of Jct 680	A	30	
ALA	24.360	R29.711	Vineyard Ave. - 4.4 miles north of Jct 680	W. Jct. Rte. 580	TA		
SOL	0.134	1.455	Jct Rte 12	1.3 miles north of Jct Rte 12	CL	40	
SOL	1.455	13.672	1.3 miles north of Jct Rte 12	Solano/Yolo County Line	A	<30	

* Segment Type:

TA	Terminal Access Route (STAA)
CL	California Legal Only = 65 foot overall 40 KPRA
A	KPRA Advisory (only CA Legal Allowed)

** Kingpin to Rear Axle Advisory (KPRA):

40	KPRA Maximum
32	KPRA over 32ft not advised
30	KPRA over 30ft not advised
<30	KPRA less than 30ft

Transit Service

SamTrans provides bus service along the SR-84 corridor in San Mateo County (Routes 72, 85, 295), with the Peninsula Traffic Congestion Relief Alliance (in conjunction with numerous cities in San Mateo County) providing shuttles to connect businesses with Bay Area Rapid Transit (BART) and Caltrain stations. AC Transit provides bus service (routes 99, 210, 212, 216, 251, 264, 275, 332, 345, 801) along segments of SR-84 in Fremont, with the transbay Dumbarton Express service providing Express Bus service across the Dumbarton Bridge between Union City and Palo Alto. The Livermore Amador Valley Transit Authority (LAVTA) bus service Route 18 uses SR-84 in Livermore.

The SR-84 corridor is intersected by Amtrak's Capital Corridor line serving Fremont between Sacramento and San Jose. The Altamont Commuter Express (ACE) runs heavy rail commuter service between Stockton and San Jose with a stop in Fremont (utilizing the freight rail line through Niles Canyon). A planned BART extension to Livermore, along the I-580 corridor, is expected to provide a transportation alternative that will result in a reduction of cut through traffic in Pleasanton and congestion on I-580, between SR-84 and I-680.

The California High-Speed Rail Authority (CHSRA) has specified a corridor preference via San Jose for high-speed rail service between San Francisco and Southern California and for using the current Capital Corridor tracks for future supplemental high-speed commuter rail to Oakland. The CHSRA is also planning a joint use regional rail corridor for intercity passenger rail and commuter rail services between Stockton and San Jose via the Altamont Pass and the Tri-Valley area, providing connecting links with the statewide High-Speed Rail service.

The Capital Corridor Service Expansion Program (which is a part of a system-wide rail program designed to enhance Capital Corridor train service and provide greater connector frequency to the planned California High-Speed Rail service) has identified two track upgrade projects in the SR-84 Corridor in Niles Canyon. These would provide more frequent service between Oakland and San Jose. Mainline track improvements would also smooth conflicts with existing freight traffic in the vicinity.

Bicycle and Pedestrian Facilities

Bicycle facilities on SR-84 range from a shared roadway to designated bike lanes and a Class I bike path. In most of the corridor, bicyclists share the roadway with motor vehicles. A separated parallel Class I bike path provides access for non-motorized travel on the Dumbarton Bridge, while access on the freeway segment between the western approach to the Dumbarton Bridge and I-880 is prohibited. The Bay Trail runs along the SR-84 Corridor from Marsh Road along the Bayfront Expressway in San Mateo County to the toll plaza in Alameda County. A planned Bay Trail gap closure would continue the trail in San Mateo County from Marsh Road to Seaport Boulevard. There is a Class II bike lane in Segment I (I-880 to SR-238) and Segment M (Jack London Boulevard to I-580). Pedestrian access from SR-84 is available near the Bayfront Expressway to the San Francisco Bay Trail. The Bay Area Ridge Trail crosses the corridor at SR-35 in the Santa Cruz Mountains. The Don Edwards San Francisco Bay National Wildlife Refuge Trail crosses the corridor on the Alameda County side of the Dumbarton Bridge as well as the Coyote Hills Regional Park Trail.

Maintenance

Pavement and roadside maintenance are critical components of protecting and preserving the investment in the SHS, including the SR-84 corridor in San Mateo, Alameda, Contra Costa and Solano Counties. A map of pavement conditions illustrates that the majority of distressed pavement on SR-84 is located in rural San Mateo and Solano County. Caltrans' annual State of the Pavement Report describes more detailed pavement condition by postmile. The pavement conditions map for 2008 is located in Appendix F.

Pavement Management Plans

Table 6 lists the pavement-related projects planned from 2009 through 2019 in the SR-84 corridor. The complete 10-Year Pavement Management Plan for SR-84 is located in Appendix G.

Table 6. Planned Pavement-Related Projects on SR-84.

Year	Location	Project Description
2009	SOL PM 7.5/13.7	EA 1E1601 Scrub and Digout roadway
2009	ALA PM 6.2/7.0	EA 1A350K Roadway improvement and replace bridge
2009	ALA PM 13.6/18.0	EA 2A3300 Upgrade shoulders and curve correction
2012	ALA PM R3.94/R6.01	CAPM
2012	ALA PM 13.3/13.4	EA 16030K Replace Bridge
2012	ALA PM 18.0/29.7	EA 29760K Upgrade and widening
2014	ALA PM R6.01/10.3	CAPM
2015	SM PM 14.95/29.2	CAPM
2016	SM PM 0.0/14.95	RAC
2017	ALA PM 10.3/18.0	CAPM
2018	ALA PM 18.0/29.7	CAPM

Source: 10-Year Pavement Management Plan, Caltrans District 4 Maintenance (2008).

Additional Corridor Issues

Relinquishment

Legislation from the 1995-96 session (AB2259) included SR-84 (SR-12 to I-80) (Segments P and Q within District 4) as a candidate for relinquishment. This section of the route is also on District 4's list for potential relinquishment, but no formal action has been taken.

In 2006, Caltrans, Alameda County Transportation Authority (ACTA), and Cities of Fremont and Union City entered into a Memorandum of Understanding (MOU) that established, among other things, the framework for the relinquishment of existing SR-84 from I-880 to SR-238 (Mission Boulevard) to the City of Fremont. The relinquishment would be subject to funding availability derived from the sale of state owned excess property originally purchased for the SR-84 Historic Parkway project. It is anticipated that the relinquishment will occur in 2012.

East-West Connector

In 1958, Caltrans proposed the SR-84 Historic Parkway Project. Funding challenges and the lack of local consensus impeded the development of various alternatives. However, the connector between Fremont and Union City — significantly impacted by increasing populations and traffic congestion — was eventually identified as needing improvement. The ACTA worked with Caltrans and the Cities of Fremont and Union City to develop alternative alignments. Several alternative alignments were studied further. In 2008 Option 2 was selected to become the East-West Connector project. It is located in Segment I.

The primary objectives of the East-West Connector project are to reduce local traffic delays and to provide improved access between I-880 and Mission Boulevard/ I-238 in the cities of Fremont and Union City. Other objectives are improved access to transit facilities and businesses, improved transit operations and flood control, increased use of non-motorized transport, and maximized use of publicly-owned rights-of-way in the Historic Corridor for transportation needs. This project would provide congestion relief similar to the Route 84 Historic Parkway Project and is an Alameda County Measure B funded project.

Local Alternative Transportation Improvement Program (LATIP) for State Route 84

Passage of AB1462 and SB709 provided legislation authorizing the use of revenues from the sale of state-owned excess property (originally purchased for improvements for the SR-84 Historic Parkway project which are no longer feasible) to fund an LATIP. The LATIP identifies a prioritized list of state highway projects that provide congestion relief in the same Southern Alameda County corridors that would have benefited from the SR-84 Historic Parkway project. The LATIP consists of nine projects of which the top four in priority order (highest to lowest) are: (1) Land disposition fees related to the sale of state-owned excess lands purchased for the Route 84 Historic Parkway project; (2) I-880/Mission Boulevard interchange project; (3) Relinquishment of existing SR-84 between I-880 and SR-238 (Mission Boulevard); and (4) the East-West Connector project. The CTC approved the LATIP in January 2010. The projects identified here are located in Segment I.

SR-84 Realignment from Downtown Livermore (First+ Street) to Isabel Avenue

In 2003, Caltrans approved realignment of SR-84 away from its historic alignment through downtown Livermore to Isabel Avenue. In partnership with the City of Livermore, this was done in order to improve SR-84 connectivity to I-580 as well as facilitate downtown Livermore revitalization efforts. Other elements of SR-84 corridor improvements in this area are an upgrade of the facility to expressway standards and a new I-580/Isabel interchange currently under construction. Segments L and M are identified as the new alignment.

Unconstructed Route/Vasco Road

California Streets and Highway Code Section 253.5 identifies a segment of SR-84 located between I-580 in Livermore to Route 4 near Brentwood. SB 802 (Torlakson, 2003) made State Route 239 and Route 84 between I-580 and State Route 4 a part of the Interregional Road System. Vasco Road is not a State highway and therefore ineligible to receive Interregional Transportation Improvement Program (ITIP) funding. Additionally, since Vasco Road is not a state highway, it is also not eligible for the SHOPP, which the State uses to fund safety and preservation projects on the State Highway System. In order for Vasco Road to qualify for ITIP and SHOPP funds, the County must first bring Vasco Road to State highway standards at its own cost, request that Caltrans include it as a State highway, and have the CTC amend Vasco Road into the SHS (as State Route 84, which currently does not exist physically between I-580 and State Route 4). Caltrans does not envision its construction within the 25-year planning horizon.

Tri-Valley Bus Rapid Transit (BRT)

Livermore Amador Valley Transit Authority (LAVTA) is currently implementing "Tri-Valley Rapid" transit that will include BRT features, such as transit signal priority and queue jump lanes. Tri-Valley Rapid will connect the Livermore Transit center to Stoneridge Mall. This route will include a short segment on Isabel Avenue (SR-84). Tri-Valley Rapid is scheduled to be complete and operational in 2011.

Tri-Valley Triangle Traffic Study (2007)

The Alameda County Congestion Management Agency (ACCMA — now the Alameda CTC) led development of the Tri-Valley Triangle Traffic Study, which was completed in 2007. The cities of Pleasanton, Livermore, Dublin, and Alameda County, were involved in this study, as well as Caltrans District 4 and MTC. This effort evaluated and prioritized future regional traffic projects in the area bounded by I-580, I-680 and SR-84. A list of recommended projects was developed and approved by the ACCMA. SR-84 widening from Pigeon Pass to I-680 was noted as one of the recommendations.

Dumbarton Rail Proposal

The Dumbarton Rail Corridor (DRC) Project is a proposed passenger rail service that would span the southern portion of the San Francisco Bay, connecting communities in the East Bay (Union City, Fremont, Newark) to communities on the Peninsula (Menlo Park, Redwood City, San Francisco) and the South Bay (San Jose). Four stations would be directly served by DRC trains (Union City Intermodal Station, Fremont Centerville, Willow Street in Newark, and Willow Road in Menlo Park) before serving selected stations along the existing Caltrain line. A refurbished bridge crossing the bay would replace the existing Dumbarton rail bridge which has not been in operation since the mid-1980s. San Mateo County Transportation Authority has served as the lead agency for the Dumbarton Rail Project. Technical analysis of service levels and coordination with related rail projects (ACE, Caltrain, California High-Speed Rail) is ongoing; environmental documents are expected to be completed in 2011 or 2012. When implemented, it will provide a major rail transit alternative in this heavily traveled segment of the SR-84 corridor. A stated goal of the project is to enhance operational efficiency by decreasing delays to existing passenger and freight systems such as ACE, Capitol Corridor, and Union Pacific Rail Road (UPRR).

Saltworks Project

The proposed Saltworks Project (Project) would be located in northeastern Redwood City near the Woodside Road (SR-84) interchange with US 101 on a 1,436-acre

parcel. Currently in the Notice of Preparation (NOP) stage for an Environmental Impact Report (EIR)/ Environmental Impact Statement (EIS), this development has potential for significant impact to the SR-84 and US 101 corridors.

The proposed Project is a mixed-use community, with a new transit system, recreational uses and restored tidal marsh. Residential dwelling units with varying densities (i.e., low-medium density, medium density, and high density) would be the primary development land use at the Project site along with roads, schools and public facilities, and commercial development. Recreational open spaces at the Project site would include city and neighborhood parks, internal waterways, walking and biking trails, sports fields and community areas. These land uses would be mixed throughout seven neighborhoods of varying sizes. The tidal marsh habitat would include 436 acres.

The project construction would be phased over a 20- to 30-year period and as currently proposed would include 8,000-12,000 residential units, one million square feet of office space, 140,000 square feet of commercial space, up to five schools and boost the population of Redwood City by 32,000. The project would reconstruct and enhance Maple Street Bridge to accommodate transit, pedestrian and bicycle access and construct a new bridge across US 101. A perimeter road would be constructed to provide access to the project from Marsh Road and Whipple Road. This road would provide a parallel route to US 101 and Seaport Boulevard, and also connect to Marsh Road/Bayfront Expressway.

III. CORRIDOR PERFORMANCE

Traffic Information

The SR-84 corridor has a varied range of traffic volumes throughout the entire corridor in District 4. As a result, traffic information is broken into four geographic subsections in Table 7 below:

SR-84 is largely a conventional highway throughout District 4. Level of Service (LOS) Monitoring reports from Alameda and San Mateo counties were consulted to determine the problem areas in the corridor. Generally conditions deteriorate as traffic volume increases. LOS A is light free-flow conditions and LOS F is typically congested traffic conditions with lengthy queues. Tables 8 and 9 list key problem areas (LOS E or F); an LOS map of the corridor is located in Appendix E.

Table 7. Traffic Information for SR-84 Corridor Subsections.

Section	AADT Range	AADT Median	Truck Percentage	Truck Percentage Median	5-Axle Range	5-Axle Median
Coastal - Peninsula (US-1 to US 101)	1,773-55,000	26,000	2.9-4.4%	2.9%	0-21.5%	13.6%
Dumbarton - Newark - Fremont –Livermore (US 101 to I-580)	17,600-76,500	27,600	1.6-4.5%	2.8%	0.5% - 65.2%	32.8%
I-580 - Brentwood (I-580 to SR-4)*	8,300-27,000	16,100	2.8%	n/a	15.3%	n/a
San Joaquin – Sacramento Delta (Rio Vista to Yolo County line)	230-1,170	700	6.5-7.4%	6.5%	59-77.8%	65.9%

Note: SM data 2006, SOL data 2007, ALA data 2008. Truck data 2008.

*SB 802 identified unconstructed SR-84 as part of the Interregional Road System (IRRS); Vasco Road could be considered for adoption as SR-84.

SR-84 Corridor LOS Problem Areas

Table 8: SR-84 Corridor LOS Problem Areas.

County	Segment	Post Mile	LOS 2008/2009
San Mateo	S Jct US 101 to Willow Road (SR-114)	R25.83 – R27.66	E
San Mateo	Willow Rd (SR-114) to University Ave (SR-109)	R27.66-R28.20	F
San Mateo/Alameda	University Ave (SR-109) to ALA Co Line	R28.20 – R30.14 (0.0)	F
Alameda	I-880 to Toll Plaza	3.20 – 6.01	E AM (70 VHD) PM (290 VHD)
Alameda	Thornton Rd to Peralta Rd	8.02 – 8.33	E
Alameda	Sunol Rd to Pleasanton/Sunol Rd	16.79 - 17.29	F
Alameda	SR-84 Off-ramp to Vallecitos Entrance	R18.02 – 20.23	F

SR-84 Corridor Key Trouble Spots

Table 9. Key Trouble Spots along SR-84 Corridor

San Mateo County

Location	Primary Cause
US 101/Woodside Road	Interchange cannot handle peak demand
Dumbarton Bridge Approaches (Eastbound PM.)/ Bayfront Expressway	Bottleneck at University Ave (backing up to Willow Rd.)

Alameda County

Dumbarton Toll Plaza (Westbound AM)	High peak hour demand
Fremont: Thornton to Peralta	High peak hour demand
Sunol Corners	Peak PM volumes (EB) intersection is inadequate to handle demand.
Vallecitos Road (SR-84) at NB I-680 off-ramp	Bottleneck at EB 84. PM Peak demand causes backup where EB 84 drops from 2 lanes to 1.

Corridor Performance Issues

US 101/Woodside Road

Operational improvements would benefit this interchange. Currently this interchange cannot adequately handle peak demand.

US 101/Dumbarton Corridor Demands

A major SR-84 corridor issue involves the approaches to the Dumbarton Bridge. The 2020 Peninsula Gateway Study* (completed in 2008) focused on improving the connection of the Dumbarton Bridge to US 101. Various options were evaluated that would improve the US 101 corridor in San Mateo County. The overall study theme for the Dumbarton Bridge approaches was to improve traffic management.

Potential solutions discussed in the study include:

- Bayfront Expressway extension to Woodside Road and US 101 Interchange
- Grade separations at University Avenue (SR-109) and Willow Road (SR-114) to Bayfront Expressway (SR-84)
- Deploy additional Intelligent Transportation Systems (ITS) elements, such as Closed Circuit TV (CCTV) and Changeable Messages signs (CMS)

Dumbarton Toll Plaza

The toll plaza may benefit from open road tolling. Open Road Tolling (ORT) or free-flow tolling is the collection of tolls on toll roads without the use of toll booths. The major advantage to ORT is that users are able to drive through the toll plaza at highway speeds without having to slow down to pay the toll. In some installations, ORT may also reduce congestion at the toll plaza by allowing more vehicles per hour/per lane.

*2020 Peninsula Gateway Corridor Study, City/County Association of Governments of San Mateo County, 2008. http://www.ccag.ca.gov/pdf/gateway pac/2020 Gateway Final Report Jul08c.pdf

High Occupant Vehicle (HOV) Connectivity

Developing an integrated and region-wide HOV system through the San Francisco Bay Area contributes to the improvement of the regional transportation system. Improved HOV connectivity (such as direct connectors) would be beneficial at US 101/SR-84, I-880/SR-84 and I-680/SR-84 interchanges.

Fremont: Thornton to Peralta

Operational improvements at the intersection would benefit this location. High peak hour demand cannot be handled in the current intersection configuration. This segment of SR-84 is anticipated to be relinquished to the City of Fremont.

Sunol Corners

Alameda County received a Traffic Engineering Technical Assistance Program (TETAP) grant in 2006 from MTC to conduct a high-level planning study of options for enhanced intersection control at "Sunol Corners," the intersection of Pleasanton-Sunol Road and SR-84 (Niles Canyon Road/Paloma Way). The study was initiated in response to complaints from Sunol residents concerning the traffic delays and high traffic volumes from Foothill Road through downtown Sunol during peak commute periods. The goals of were to evaluate intersection capacity, congestion, and safety under four alternatives for the study area.

1. **No Build**: leave the existing all-way stop control.
2. **Traffic Signal**: replace the all-way stop with a traffic signal.
3. **Traffic Signal with Roadway Widening**: replace the all-way stop with a traffic signal and widen Route 84 to create an eastbound left turn pocket.
4. **Roundabout**: replace the all-way stop with a modern one lane roundabout.

Note : Roundabout was the least costly and least environmentally damaging build option evaluated.

Isabel Avenue/I-580

SR-84 connectivity to I-580 is being improved through an upgrade of the facility to expressway standards and a new I-580/Isabel interchange currently under construction. While the new I-580/Isabel Avenue interchange is being constructed, an interim SR-84 alignment along Airway Boulevard to I-580 has been utilized. This has caused significant peak period delays along Airway Boulevard.

SR-84 Expressway Widening Project Performance

The CMIA-funded project will upgrade SR-84 in Alameda County to expressway standards (55 mph) from Ruby Hill Drive to Jack London Boulevard. The project is expected to complete construction by 2014.

The purpose of this project is to:

- Improve SR-84 as a regional connection between Route 680 and Route 580 using expressway standards to the maximum extent feasible. This is consistent with other programmed projects by completing a continuous four- to six-lane facility between Pigeon Pass and the I-580/Isabel Avenue interchange.
- Improve local traffic circulation through added capacity on SR-84 and intersection improvements, thereby attracting regional traffic currently using local streets back on to the SR-84 corridor.
- Complete the statutory designation of this section of SR-84 as an expressway facility by providing partial access control and relocating private utilities out of State right-of-way.
- Improve pedestrian and bicycle access along this section of SR-84 by connecting multi-use trails.

Traffic Operations — Intersection Analysis (Final Project Report 2008):

- Most intersections along SR-84 would operate at LOS C or better by 2010 and LOS D or better by 2030 for the Build Alternative. Notable exceptions occur at the project conforms.
- Vallecitos Road and Isabel Avenue (SR-84) intersection in the AM peak period and Ruby Hill Drive intersection during the PM peak period are expected to experience LOS F conditions by 2010. This condition would worsen by 2030, resulting in further delays to traffic.

- The Jack London Boulevard intersection would operate at LOS B or better by 2010. By 2030, the Project would increase traffic volumes and congestion at the SR-84/Jack London Boulevard intersections, which would deteriorate from LOS D conditions in the No Build alternative to LOS F and E during the AM and PM peak hours, respectively. This assumes that SR-84 would have six lanes north of Jack London Boulevard, and Jack London Boulevard would be extended west to El Charro Road. SR-84 would operate at LOS D or better in the AM and PM peak hours.

Traffic Operations — Ramp Analysis (Final Project Report 2008):

- The project would improve the First Street/I-580 eastbound ramps intersection, which is expected to operate at LOS F in the PM peak hour under No Build conditions, such that it operates at LOS D in the PM peak hour.
- The Project would reduce delay at the following ramp terminal intersections expected to operate at LOS F in both No Build and Build alternatives:
  - Isabel Avenue/I-580 WB ramps (PM Only)
  - Livermore Avenue/I-580 EB ramps (PM Only)
  - Livermore Avenue/I-580 WB ramps (AM Only)
  - Vasco Road/I-580 EB ramps (PM Only)
- The project would slightly degrade the operations of the intersection of Livermore Avenue/I-580 WB ramps from LOS D in the No Build conditions to LOS E, during the PM peak hour in the year 2030. This deterioration is from shifts in traffic circulation in the project area. There is a small increase in volume at the Livermore Avenue interchange. The on-ramp demand volume would be higher than the current metering rate, thereby increasing queue lengths that would block through traffic on Livermore Avenue. To address this impact, the metering rate could be increased at this location from 600 to 700 vehicles per hour. This would improve operations at this interchange without degrading freeway or ramp merge/diverge LOS.
- The project would cause minor increases to delay at the following ramp terminal intersections and are expected to operate at LOS F. These delays can be reduced by adjusting ramp metering rates at these locations:
  - Airway Boulevard/I-580 WB ramps (PM Only)
  - First Street/I-580 WB ramps (AM Only)
  - Vasco Road/I-580 WB ramps (AM Only)

Traffic Operations — Mainline Analysis (Final Project Report 2008):

- During the AM peak hour westbound I-580 traffic currently experiences substantial congestion between Vasco Road and El Charro Road. These segments currently operate at LOS F during the AM peak hour, with the exception of the segment between Portola Avenue and Airway Boulevard, which operates at LOS E.
- During the PM peak hour eastbound sections of I-580 east of El Charro Road operate at or near capacity due to tight interchange spacing through Pleasanton and high volumes at associated on-ramps. These factors combine to create a bottleneck at El Charro Road.
- The project would not cause any freeway mainline segments to deteriorate to LOS E or F from LOS D or better conditions within the study area. The proposed project would improve or maintain traffic operations on freeway mainline segments expected to operate at LOS E or F in the No Build scenario.

Traffic Operations — Network Performance (Final Project Report 2008):

- Most intersections along SR-84 would operate at LOS D by 2030 for the Build Alternative. Table 10 summarizes 2030 Network Performance for the Build Alternative.

Table 10. Network Performance for Year 2030 Conditions.

Performance Measures		Build Alternative	
		AM	PM
Vehicle Miles Travelled (VMT)		190,860 (+5%)	209,060 (+5%)
Average Speed (mph)		35.1 (-4%)	33.5 (+13%)
Avg. NB Travel Time	I-680 to I-580	19:28	31:18
	SR-84	18:27	30:54
Avg. SB Travel Time	I-680 to I-580	30:05	23:33
	SR-84	28:08	20:54
Network Demand Volume		74,930 (+13%)	83,920 (+10%)
Network Volume Served		67,660 (+16%)	74,120 (+15%)
Network Percent Served		90.3% (+2%)	88.3% (+4%)

Source: SR-84 Project Report Final September 2008.

Note: Percentages are calculated as compared to No Build condition.

The following summarizes 2030 operations results:

- The project will increase Vehicle Miles Travelled (VMT) within the study area by a combined average of approximately five percent in the AM and PM peak hours.
- More vehicles and a greater percentage of network demand will be served in the peak period under the Build Alternative during both peak hours when compared to No Build conditions, thereby improving overall mobility and reducing peak hour spreading.
- In the AM peak, the amount of traffic on westbound Route 580, east of SR-84, that uses SR-84 would increase by 17 percent, while the amount that uses the 680/580 interchange (travelling SB on I-680) would decrease by 16 percent. The project would allow capacity on freeway segments to be available for other trips that may currently use local streets. The by-product of this shift is an anticipated reduction in traffic volumes off of a number of local facilities, including:
  - Vallecitos Road (east of Isabel): 25 percent reduction in AM peak hour traffic; 15 percent reduction in PM peak hour traffic.
  - Downtown Livermore: 10 percent reduction in AM peak hour traffic; 5 percent reduction in PM peak hour traffic.
  - Vineyard Avenue (west of Isabel): 5 percent reduction in AM and PM peak hour traffic.
  - Stanley Boulevard (east of Isabel): 5 percent reduction in AM and PM peak hour traffic.
  - First Street (south of I-580): 10 percent reduction in AM peak hour traffic; 5 percent reduction in PM peak hour traffic.

IV. CORRIDOR CONCEPT

The Corridor Concept (Table 11 on page 31) conveys Caltrans' vision for a route with respect to corridor capacity and operations for a 25-year planning horizon. The concept takes into account factors that create interregional, regional, and local travel demand, including commuting, freight, recreation and land use.

The corridor concept is informed by:

- Current Caltrans statutes, policies and directives
- Local, regional partnership input and corridor analyses
- California Transportation Plan, Regional Transportation Plan, Interregional Transportation Strategic Plan and other approved transportation plans
- Legacy route and corridor concepts developed by Caltrans System Planning
- Information from Caltrans Traffic Operations plans developed for system-wide strategies
- Caltrans Freeway Agreements

Concept Rationale

Coastal—Peninsula

SR-84 functions as a two-lane conventional highway from the Pacific Coast to I-280. This meets the facility concept for the 25-year time horizon (2035). The curvilinear and narrow nature of SR-84 limits improvement options. The facility changes east of I-280 to four-lane conventional (4C) and functions as a principal arterial through Redwood City to US. Traffic demand recognizes the need for a six-lane expressway (6E) in this location over the 25-year time horizon (2035). Additional Traffic Operations System (TOS) devices are planned for this section of the corridor to improve operations. The existing Bayfront Expressway requires operational improvements to meet the 25-year concept. Protected lands and limited growth in residential, commercial and industrial developments will keep traffic demand stable west of Redwood City.

Segments A and B

Segments A and B consist of a two-lane conventional highway. The concept is appropriate for this section of SR-84. There is limited right-of-way available for future improvements. Steep terrain, protected lands and low traffic volumes contribute to the described 25-year concept.

Segments C and D

Increasing traffic volume in Redwood City (east of SR-82) suggests that improving operations and expanding the facility to six lanes would be appropriate within the 25-year planning horizon. Additionally, grade separations at University Avenue (SR-109) and Willow Road (SR-114), as proposed in the Peninsula Gateway 2020 Study, could benefit traffic operations.

Segment E

Traffic volumes are expected to increase but the facility should accommodate this increase in demand with operational improvements.

Dumbarton—I-580

The freeway section of SR-84 (Dumbarton Bridge) meets the 25-year concept (2035), with the planned addition of ramp metering to increase operational efficiency. The facility would benefit from HOV direct connectors I-880 and I-680 respectively; toll plaza operations may also benefit from open-road tolling. Development constraints exist in the urban arterial section of the route through Fremont. The functional classification of the route is not expected to change, as the City of Fremont is expected to take responsibility of the section of the route from I-880 to SR-238. A new roadway (East West Connector) will not be part of a new SR-84 alignment initially, but could be considered in the future. The Niles Canyon segment has truck restrictions, limited areas for expansion and is environmentally sensitive. Operational improvements are needed at Sunol Corners, which would benefit from an operational improvement such as a roundabout. The I-680 to I-580 segment concept recognizes the increase in traffic volume and goods movement activity, and acknowledges the need for operational improvements at the northbound I-680 on-ramp area of SR-84. The pri-

mary system management strategy for SR-84 between I-580 and I-680 is to upgrade the facility to expressway standards.

Segments F and G
Traffic volumes are expected to increase across the Dumbarton Bridge but the facility should accommodate this increase in demand with operational improvements.

Segments H and I
The 25-year concept acknowledges a future local roadway project (East-West Connector) that will improve the Fremont-Union City connection. The existing SR-84 (through Fremont) is expected to be relinquished to the City of Fremont.

Segment J
While traffic volumes are expected to grow, the existing two-lane facility is appropriate in this location with operational and safety improvements in key areas to preserve SHS connectivity.

Segment K
Expected traffic volume and I-680 connectivity issues warrant operational improvements. Truck traffic will benefit from the climbing lane through this section of SR-84.

Segment L
Expected traffic growth is accommodated with improved alignment of SR-84 through Livermore and an upgrade to expressway standards.

Segment M
The 25-year concept recognizes the widening and expressway upgrade project to six lanes with traffic volumes expected to increase. The new Isabel Avenues interchange at I-580 will improve the connection and movement of local and regional traffic.

I-580—Brentwood

Segment N and O (Unconstructed/Unadopted)
California Streets and Highway Code Section 250-257 identifies SR-84 as connecting I-580 in Livermore to Route 4 near Brentwood; this connection is currently unconstructed. Caltrans does not envision its construction within the 25-year planning horizon. Vasco Road has been considered as a candidate for potential route adoption.

Rio Vista—Yolo County Line
The segment traverses a rural area. Low traffic volumes and limited connectivity to the overall SHS are the primary reasons the current 25-year concept of a two-lane conventional right-of-way is appropriate.

Segments P and Q
Low traffic volumes and limited connectivity to the trunk system justify the 25-year concept. Legislation from the 1995-96 session (AB2259) included SR-84 (SR-12 to I-80) Solano (SOL) as a candidate for relinquishment.

SR-84 Corridor Concept Summary

Table 11. SR-84 Corridor Concept Summary.

Segment	County	Segment Description	Existing Facility	25-yr Concept Facility
Segment A PM 0.0 - 14.95	SM	SR-1 to SR-35.	2C	**2C**
Segment B PM 14.95 - 21.53	SM	SR-35 to I-280.	2C	**2C**
Segment C PM 21.53 -24.68	SM	I-280 to SR-82	4C	**4C**
Segment D PM 24.68 - 25.72	SM	SR-82 to US 101 North Junction (Woodside Rd)	4E	**6E**
Route Overlap with US 101				
Segment E PM 25.87 - 28.20	SM	US 101 South Junction (Marsh Rd) to SR-109 (University Ave)	6E	**6E**
Segment F PM 28.20 - 30.14	SM - ALA	SR-109 (University Ave) to SM/ALA Co Line	6F	**6F**
Segment G PM 0.0 - 3.20	ALA	ALA/SM Co Line to DB Toll Plaza	6F	**6F**
Segment H PM 3.20 - 6.01	ALA	DB Toll Plaza to I-880	7F (1H)	**7F (1H)**
Route Overlap with I-880				
Segment I PM 6.01 - 10.83	ALA	I-880 to SR-238	2C-4C	**Relinquishment**
Segment J PM 10.93 - 17.98	ALA	SR-238 to I-680	2C	**2C**
Segment K PM 17.98 - 23.57	ALA	I-680 to Vallecitos Rd/Isabel Ave split	2C -4C (2TCL)	**4E**
Segment L PM 23.57 - 26.36	ALA	Vallecitos Rd/Isabel Ave split to Stanley Blvd	2C-4C	**4E**
Segment M PM R26.36 R28.71	ALA	Stanley Blvd to New Isabel I/C	2C-6C	**6E**
Segment N PM R28.71 - 35.71	ALA	I-580 to Contra Costa County Line (Vasco Rd)	UNC	**UNC**
Segment O PM 35.71 - 7.10	ALA/CC	ALA/CC County Line to SR-4 (Vasco Rd)	UNC	**UNC**
Route Break				
Segment P PM 0.16 - 7.25	SOL	SR-12 to SR-220	2C	**2C**
Segment Q PM 7.25 - 13.67	SOL	SR-220 to Yolo County Line	2C	**2C**

Legend:

C = Conventional Highway
E= Expressway
F = Freeway
H= HOV or HOT
PM = Postmile
TCL = Truck Climbing Lane
UNC= Unconstructed

Goods Movement Strategy

It is important to maintain SR-84 as a goods movement corridor. Improving the corridor in appropriate areas to facilitate truck traffic is essential. Some examples include truck climbing lanes (which reduce conflicts with vehicle traffic) and curve realignment. Specific goods movement related improvements are listed below by sub area.

Coastal—Peninsula

The concept recognizes the necessity of allowing truck traffic to use this section of SR-84. However, topographical constraints and rural character, combined with established Kingpin Rear Axle (KPRA) length advisories, limits the ability to significantly improve roadway facilities for increased truck use. The proposed grade separations at University Avenue (SR-109) and Willow Road (SR-114) to Bayfront Expressway would improve goods movement operations to and from the Dumbarton Bridge.

Dumbarton—I-580

The concept recognizes the importance of transbay connectivity for goods and services. Manufacturing and distribution centers in Fremont and Newark contribute to the amount of truck traffic using SR-84. Rerouting of trucks away from the existing SR-84 alignment in Downtown Fremont is anticipated with the construction of an East/West Connector, north of existing SR-84. The concept also recognizes the goods movement connection from Fremont to the Livermore Valley (Dublin, Pleasanton and Livermore), as well as environmental constraints of Niles Canyon Road. The future concept for SR-84 along Vallecitos Road is appropriate with a truck climbing lane to address present and future needs.

I-580—Brentwood

Currently not part of the SHS, Vasco Road has been considered a potential candidate for future route adoption. Local agencies in both Alameda and Contra Costa County have made improvements to the roadway including a truck climbing lane, as trucks use the route connecting Livermore to Brentwood.

Rio Vista—Yolo County Line

The future concept is appropriate for this section since truck volume is low and is not expected to increase significantly.

Transit Strategy

Maintaining and enhancing access to all modes of transit is important in the SR-84 corridor, particularly in PDAs.* Increasing and/or establishing new, where feasible, bus and rail services will complement the entire transportation system.

Coastal—Peninsula

Transit services are currently limited to the coastal communities of San Mateo County. Limited opportunities exist for enhancement and/or expansion over the 25-year time horizon.

Dumbarton—I-580

The continuing operation and expansion of the Dumbarton Express bus service as well as the development and expansion of the Dumbarton Rail corridor is a strategy that will mitigate increased traffic volumes and provide additional travel choices. Enhancing linkages with Caltrain, BART, Amtrak, ACE and eventually High-Speed Rail will also be necessary.

I-580—Brentwood

Future transit services would benefit this corridor connecting the inland Delta and Livermore Valley. Vasco Road is a key route connecting these areas.

Rio Vista—Yolo County Line

Transit options are limited in this area and potential improvements are limited due to low volumes of traffic. Existing car ferry provides lifeline service to rural delta communities in this corridor.

Land Use Strategy

There are numerous land use strategies that can benefit from interface with transportation. Transit Oriented Development** (TOD) is one example of coordination of

*Land parcels that have access to public transit and are appropriate for growth as defined by MTC's Regional Blueprint FOCUS Program.

**Transit-oriented development refers to the clustering of homes, jobs, shops and services in close proximity to rail stations, ferry terminals or bus stops offering access to frequent, high quality transit services.

land use with transportation. The Regional Blueprint Planning program in the Bay Area (FOCUS) supports focused growth solutions. This program identifies planned and potential mixed use development near transit in the Bay Area.

Currently, a focus on residential densification, including development of TODs where feasible, is important as well as regional rail stations to facilitate interregional travel demand through Fremont, Newark Redwood City (Dumbarton Rail). The cities of Redwood City, Newark, Union City and Fremont have experienced significant growth since the 1980s and, by virtue of their proximity to major Bay Area economic centers, host significant technology sector activities as well. This has significantly changed the distribution of commute traffic through this portion of the region. The Tri-Valley (Livermore, Dublin and Pleasanton) has seen major residential development within the same period.

Coastal—Peninsula

The dominant strategy in this area is to preserve the rural nature of this subsection of SR-84. The land use is dominated by open space/protected land and numerous agricultural uses. Preserving recreational and natural resources are important; limited growth in both jobs and housing is anticipated.

Dumbarton—I-580

The dominant strategy in this area is infill development. MTC's FOCUS program has identified areas close to transit where densification of the land uses would be appropriate. These areas would contain TODs and additional focused redevelopment activities. Moderate growth is expected in both jobs and housing by 2030.

I-580—Brentwood

The dominant strategy in this area is densification of land uses in areas where urbanization already exists, combined with protection of open space. Population, jobs and housing units are expected to increase at a moderate pace by 2030.

Rio Vista—Sacramento County Line

The dominant strategy in this area is to preserve the agricultural land uses adjacent to SR-84. Limited job, housing and population growth is expected in this vicinity.

Sustainable Communities Strategy

The passage of SB 375 has changed the dynamic of land use and transportation planning in California. Compact development and the reduction of vehicle miles traveled is expected to reduce GHG emissions; the SCS will be implemented through MTC's 2013 RTP.

Regional Blueprint Planning Program

Caltrans supports focused growth solutions at the regional and local level through Regional Blueprint Planning. In the Bay Area the Regional Blueprint Planning program is operated by MTC and Association of Bay Area Governments (ABAG) as the FOCUS program. Its primary goal is to encourage future growth near transit and existing communities. Growth should be monitored both quantitatively and qualitatively so that the SHS responds to this complex and dynamic growth.

Bicycle and Pedestrian Strategies

Maintain and enhance the SR-84 corridor bicycle network through implementation of MTC's Regional Bicycle Plan. Maintaining and expanding access to the San Francisco Bay Trail (segments E, F, G) and Ridge Trail (segment A) enhances opportunities for non-motorized transportation.

The SR-84 bicycle network should be enhanced through implementation of MTC's Regional Bicycle Plan. It is essential to provide direct bicycle and pedestrian connectivity between the path that parallels SR-84 and the adjacent land uses across SR-84. A planned Bay Trail gap closure would continue the trail in San Mateo County from Marsh Road to Seaport Boulevard. Maintaining and expanding access to the San Francisco Bay Trail and Ridge Trail enhances opportunities for non-motorized transportation. The strategies have important transportation benefits, providing a commute alternative for cyclists, and connecting to public transportation facilities.

Complete Streets

Through Deputy Directive 64-Revision #1*, Caltrans provides for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State Highway System (SHS). The Department views all transportation improvements (new and retrofit) as opportunities to improve safety, access, and mobility for all travelers and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system.

A complete street is defined as a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists, appropriate to the function and context of the facility. Complete street concepts apply to rural, suburban, and urban areas. Providing complete streets increases travel options which, in turn, reduces congestion, increases system efficiency, and enables environmentally sustainable alternatives to single driver automotive trips. Implementing complete streets and other multi-modal concepts supports the California Complete Streets Act of 2008 (AB), as well as the California Global Warming Solutions Act of 2006 (AB 32) and SB 375, which outline the State's goals of reducing GHG emissions. With AB 1358 and DD-64-R1, both Caltrans and local agencies are working to address and complete common goals.

Corridor Project List

Table 12a. SR-84 Corridor Planned Project List.

County	Begin/End PM	Source	EA or RTP ID
2008 STIP			
ALA		Widen SR-84 from 2 to 4 lanes from north of Pigeon Pass to Stanley Boulevard, and from 2 to 6 lanes from Stanley Blvd to Jack London Blvd	29760K
ALA	13.2/14.9	Isabel Ave Interchange Construction	171311
2010 SHOPP			
ALA	Var/Var	ADA Pedestrian Infrastructure	
ALA	Var/Var	ADA Curb Ramp retrofit	
ALA	T18.5/R21.0	Install median soft barrier/shoulder widening	
ALA		Ala 13-980 various Bridge Deck MCRYL & RJS	1E4301
ALA		Construct Barr. and Strip	0G430K
ALA		SR-84 Improvement	172401
ALA		PSSR Transfer and Relinquishment/Roadway Rehab	272621
ALA	13.1/19.1	Near Sunol Replace Culverts	
ALA	13.6/18.0	Alameda Creek to I-680 Realign curve and upgrade shoulders also	2A330
ALA	13.3/13.3	Fremont replace bridge #33-36	16030
ALA	12.1/13.3	Realign curve in Union City	17441
ALA	12.1/13.3	Landscape mitigation	17442
SM	5.1/5.9	Storm Damage repair	4S130
SM	20.2/20.2	Sinkhole repair and replace culverts	4S400
SM	22.0/22.1	Repair pavement and drains and construct retaining wall	4S590
SM	10.8/16.4	Repair storm damage	3S672
SM	10.8/10.8	Repair storm damage and replace culvert	3S671
SM	8.3/9.0	Install rumble strips	2L140

*Complete Streets: Integrating the Transportation System (DD-64-R1) was signed on October 2, 2008.

Table 12a. SR‑84 Corridor Planned Project List. (continued)

County	Begin/End PM	Source	EA or RTP ID
SM	Var/Var	ADA Pedestrian Infrastructure	
SM	9.9/9.9	Construct retaining wall	3S820
SOL	3.0/6.0	Repair failed pavement and slopes	3S710
10 year SHOPP			
SOL	12.09/12.09	Miner Slough Bridge #23-0035 Replace superstructure	
ALA	17.2/17.2	Arroyo De La Laguna Br.# 33-0043	
ALA	R25.45/R25.45	Arroyo Del Valle Creek Br #33-0710	
Ramp Meter Development Plan			
SM	24.60	WB at RTE 82 (SB)	
SM	24.63	WB at RTE 82 (SB)	
SM	24.78	EB at RTE 82 (NB)	
SM	24.83	EB at RTE 82 (NB)	
ALA	3.67	WB THORNTON AVENUE SB/PASEO PEDRA PKWY	
ALA	3.68	EB THORNTON AVENUE NB	
ALA	3.68	EB THORNTON AVENUE NB	
ALA*	3.86	EB THORNTON AVENUE SB/PASEO PEDRA PKWY	
ALA*	5.09	EB ARDENWOOD BLVD/NEWARK BLVD	
ALA	5.09	WB NEWARK BLVD	

* Existing Ramp Meter

Table 12b. SR‑84 Corridor Planned Project List.

County	Begin/End PM	Source	EA or RTP ID
2009 Regional Transportation Plan (T2035)			
ALA	R3.2/5.9	WB SR‑84 I‑880 to Toll Plaza Convert HOV Lane to Express Lane	230673
ALA	R4.7	WB HOV on-ramp at Newark Blvd.	21126
ALA	13.2/14.9	Isabel Ave Interchange Construction	21105
ALA/ CC		Vasco Road realignment, widening and installation of median barriers	21139
ALA	22.5/27.3	Widen SR‑84 from 2 to 4 lanes from north of Pigeon Pass to Stanley Boulevard, and from 2 to 6 lanes from Stanley Blvd to Jack London Blvd	22776
ALA	18.5/20.8	Route 84 widening from Pigeon Pass to I‑680	0G440K/230244
ALA		East West Connector New 4-lane Expressway - Fremont, Union City, Hayward from Route 880 to Route 238 (Mission Boulevard). 4 lane expressway on new alignment	94506
SM		Access improvements from Dumbarton Bridge connecting to US 101 (includes fly-overs, interchange improvements and conversion of Willow Road between Route 84 and US 101 to expressway	21612
SM	24.6/25.6	Widen Woodside Road from El Camino Real (SR‑82) to US 101	21892
SM	5.1/6.0	Modify US 101 Woodside Road Interchange	21603
		MTC Regional Bicycle and Pedestrian Plan	
ALA		Bike lane Valacitos Road – From Niles Canyon Rd to Isabel Ave/Portola Ave	
		Fremont Bicycle Plan	
ALA		Class I Bicycle Lane (Adjacent to SR‑84 Realignment East West Connector)	

Additional Projects Recommended for Further Study

In addition to the planned projects noted in Table 12, the potential projects listed in Table 13 are recommended for further study to help achieve the Corridor Concept.

Table 13. Additional Projects Recommended for Further Study.

County	Location	Description
SM	Bayfront Expressway to Woodside Road	Extend Bayfront Expressway to Woodside Road. Referred to Redwood City per Peninsula Gateway Study
SM	US 101 and SR-84 near Dumbarton Bridge approaches	Install trailblazers and/or arterial CMS to provide route guidance information. Recommend move to preliminary design per Peninsula Gateway Study
SM	Bayfront Expressway connections to University Ave. and Willow Road.	Grade Separations at Bayfront/Willow and Bayfront/University. Will require additional analysis per Peninsula Gateway Study
SM	SR-84 connections to US 101	Improved HOV connectivity
ALA	I-880/SR-84 interchange	84 to 880 HOV direct connectors
ALA	I-680/SR-84 interchange	84 to 680 HOV direct connectors
ALA	Niles Canyon Road/Paloma Way/ Pleasanton-Sunol Road (Sunol Corners)	Operational Improvements

appendices

APPENDIX A

CORRIDOR SEGMENT DATA SHEETS A-Q

ADDITIONAL CORRIDOR DATA FOR SR-84

APPENDIX B

PERTINENT FEDERAL, STATE, AND REGIONAL TRANSPORTATION PLANS, PROGRAMS, AND DIRECTIVES

APPENDIX C

STATE ROUTE 84 FREEWAY AGREEMENTS

APPENDIX D

HIGHWAY/FREEWAY INVENTORY MAP

APPENDIX E

LOS MAP

APPENDIX F

PAVEMENT CONDITION MAP

APPENDIX G

10-YEAR PAVEMENT MANAGEMENT PLANS

APPENDIX H

CMIA PROJECT FACT SHEET

APPENDIX I

ORIGIN/DESTINATION DIAGRAMS

APPENDIX A

Corridor Segment Data/Additional Corridor Data

The transportation corridor, for purposes of the CSMP, is divided into segments based on a range of criteria:

- District boundaries
- County boundaries
- Urban/Rural boundaries
- Major changes in traffic volumes
- Changes in the number of lanes
- Significant changes in grade/terrain
- Changes in route function including recreational, trucking, commuting, etc.
- Freeway Agreements

As shown in Table A1, the SR-84 corridor is divided into 17 segments labeled A through Q. Segments N and O are unconstructed and unadopted.

Detailed segment information follows.

Segments A and B

Segments A and B consist of a two-lane conventional highway which begins in the San Mateo coast town of San Gregorio. Much of the adjacent land is classified as rural with farming and environmentally sensitive open space (Sam McDonald County Park and La Honda Creek Regional Open Space). The segment is winding and gains elevation with grades of up to six percent. Trucks are advised that their kingpin to axle ratio is recommended to be less than 30 feet due to the narrow and winding nature and limited sight distances. The speed limit posted along this segment varies from 45 to 50 mph. There is limited right-of-way available for future improvements.

Segments C and D

This section of SR-84 is a four-lane conventional urban arterial through Redwood City, until it intersects SR-82 (El Camino Real), where SR-84 transitions into a four-lane expressway. An expressway section also exists from I-280 to Alameda de Las Pulgas. Typical land uses include commercial and residential. Development has occurred all the way up to the roadway shoulder. Posted speed limits for this section range from 35 to 45 mph.

Segments E, F and G

After an overlap in the route with US 101, SR-84 picks up again east of US 101. This section of SR-84 is known as Bayfront Expressway. This section of SR-84 begins as a four-lane urban arterial for a short distance (Marsh Road). As the roadway continues to the east, it transitions to a six-lane expressway. Land uses include light industrial and commercial businesses. Two large employers are Tyco International and Sun Microsystems (a subsidiary of Oracle Corporation), both with direct access to SR-84. The land use transitions to environmentally sensitive bay wetlands. It continues across the San Francisco Bay via the Dumbarton Bridge, a toll bridge crossing. This is a vital link to the central and south bay. Posted speed limits range from 45 to 50 mph. Beginning at University Avenue, SR-84 transitions to a six-lane freeway and the posted speed limit increases to 55 mph.

Segments H and I

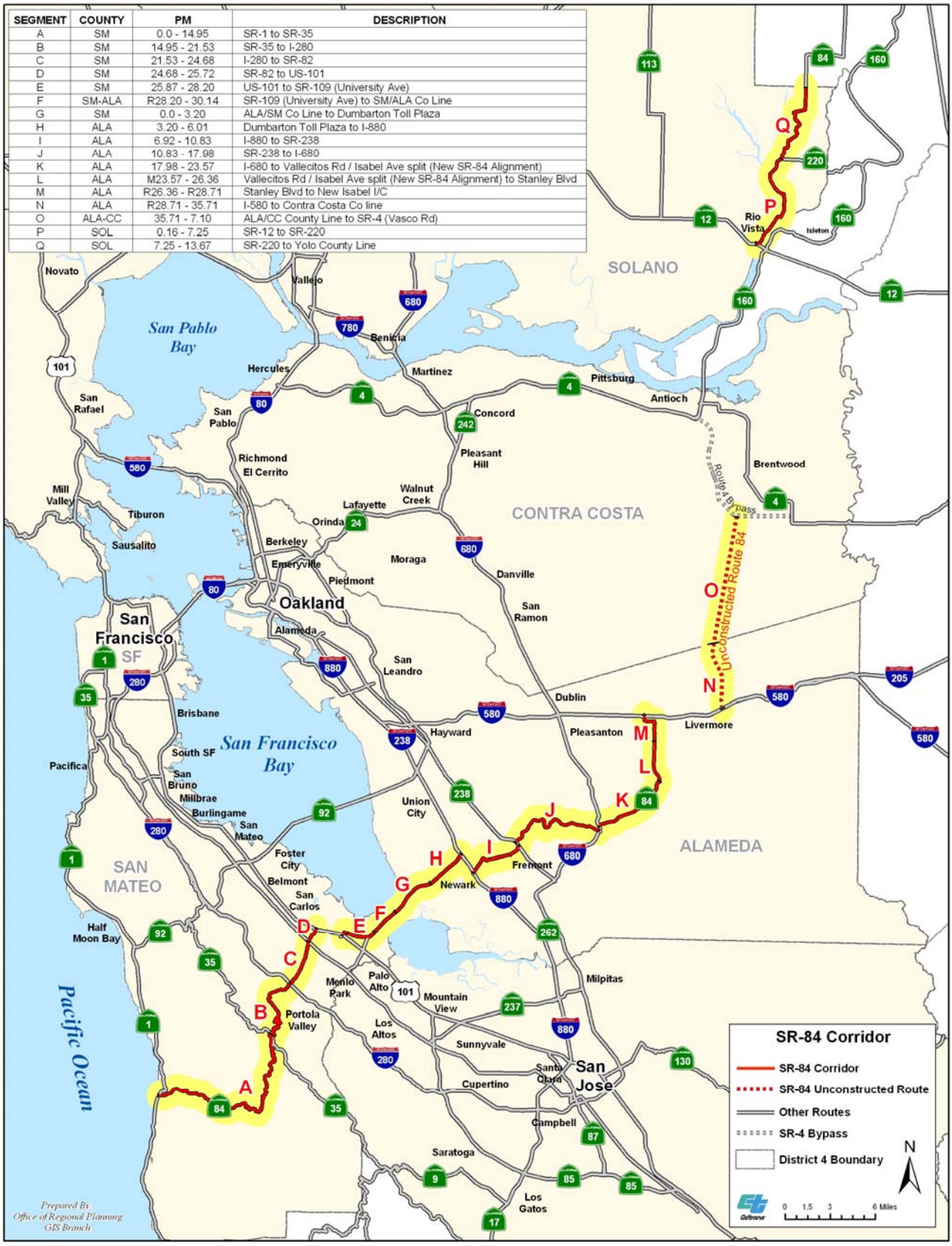
After an overlap in the route with I-880, SR-84 continues east of I-880 in the city of Fremont. This section of SR-84 is a four-lane urban arterial. Commercial and light industrial occupy much of the section. This section of SR-84 has a designated Class II bike lane. There also is a significant portion that has residential uses adjacent to SR-84. There is a section of SR-84 (along Peralta Boulevard) that is a two-lane conventional roadway. There are many driveways that enter the roadway for commercial and residential uses. There is little additional right-of-way available for roadway improvements. The posted speed limit for this section of SR-84 is 30 to 35 mph. This section of SR-84 is expected to be relinquished to the City of Fremont.

Segment J

SR-84 continues as a two-lane conventional roadway through Niles Canyon. The roadway parallels Alameda Creek, which is an environmentally sensitive riparian habitat. This section of SR-84 has been identified as a California Scenic Corridor, where significant roadway im-

Table A1. SR-84 Corridor Segments.

SEGMENT	COUNTY	PM	DESCRIPTION
A	SM	0.0 - 14.95	SR-1 to SR-35
B	SM	14.95 - 21.53	SR-35 to I-280
C	SM	21.53 - 24.68	I-280 to SR-82
D	SM	24.68 - 25.72	SR-82 to US-101
E	SM	25.87 - 28.20	US-101 to SR-109 (University Ave)
F	SM-ALA	R28.20 - 30.14	SR-109 (University Ave) to SM/ALA Co Line
G	SM	0.0 - 3.20	ALA/SM Co Line to Dumbarton Toll Plaza
H	ALA	3.20 - 6.01	Dumbarton Toll Plaza to I-880
I	ALA	6.92 - 10.83	I-880 to SR-238
J	ALA	10.83 - 17.98	SR-238 to I-680
K	ALA	17.98 - 23.57	I-680 to Vallecitos Rd / Isabel Ave split (New SR-84 Alignment)
L	ALA	M23.57 - 26.36	Vallecitos Rd / Isabel Ave split (New SR-84 Alignment) to Stanley Blvd
M	ALA	R26.36 - R28.71	Stanley Blvd to New Isabel I/C
N	ALA	R28.71 - 35.71	I-580 to Contra Costa Co line
O	ALA-CC	35.71 - 7.10	ALA/CC County Line to SR-4 (Vasco Rd)
P	SOL	0.16 - 7.25	SR-12 to SR-220
Q	SOL	7.25 - 13.67	SR-220 to Yolo County Line



provements are discouraged through a Scenic Corridor Protection Plan. An active rail line exists (owned by Union Pacific) in Niles Canyon and shared with the ACE. ACE provides commuter rail service from Stockton to San Jose. The Niles Canyon Railway (a recreational railroad operated by the Pacific Locomotive Association) operates Sunday service throughout the year. Future rail improvements could include California High-Speed Rail connection service to the Central Valley. The posted speed limit for this section of SR-84 is from 40-45 mph.

Segment K

SR-84 shares the alignment with I-680 and continues east of I-680 as a two-lane conventional roadway to Livermore. A project completed in late 2008 realigned the road and provided a soft median with truck climbing lanes over Pigeon Pass. The surrounding land uses consists of rural cattle rangeland. The posted speed limit for this section of SR-84 is 45 to 55 mph.

Segment L

The SR-84 alignment continues along Isabel Avenue in Livermore. The landscape is rural in nature and consists of grasslands suitable for cattle. It begins to transition into suburban land uses with large single family residences. This segment of SR-84 has a programmed project to upgrade and widen the existing facility from a conventional highway to expressway from Ruby Hills Drive to Stanley Boulevard (EA 297621) with adequate right-of-way for the roadway improvement. The posted speed limit for this section of SR-84 is 50 mph.

Segment M

As SR-84 continues, the facility crosses Stanley Boulevard, which is grade-separated, and adjacent land uses (east side of SR-84) are residential, commercial and industrial in nature. There are a few agricultural uses located on the west side of the roadway. Currently there is a project programmed that will upgrade and widen SR-84 from a two-lane conventional highway to a six-lane expressway (EA 297611) from Stanley Boulevard to Jack London Boulevard. Continuing to I-580, the Isabel interchange project (EAs 17131, 17132 and 17133) will improve the connection from SR-84 to I-580. Livermore Airport is in the vicinity and serves as a regional general aviation airfield. The posted speed limit for this section is 45 mph.

Segment N and O (Unconstructed/Unadopted)

California Streets and Highway Code Section 253.5 identifies a segment of SR-84 located between I-580 in Livermore to Route 4 near Brentwood. SB 802 (Torlakson, 2003) made unconstructed SR-239 and SR-84 between I-580 and SR-4 a part of the IRRS. Vasco Road could be a candidate for adoption to help complete this I-580 to SR-4 connection. However, Vasco Road is currently not a state highway and therefore ineligible to receive funding from the ITIP or the SHOPP. In order for Vasco Road to qualify for ITIP and/or SHOPP funds, the County must first bring Vasco Road to state highway standards at its own cost, request that Caltrans include it as a state highway, and have the CTC amend Vasco Road into the SHS. Caltrans does not envision construction of this unconstructed segment within the 25-year planning horizon. Segment N is the Alameda County portion of this unconstructed route; Segment O is the Contra Costa County portion.

Segment P

After a break in the route, SR-84 begins again in Solano County at the town of Rio Vista. The two-lane conventional highway is adjacent to limited residential commercial and industrial land uses. The roadway travels along the Sacramento River levee. This portion of the route includes a state sponsored ferry across the Sacramento River, providing access to Ryer Island. The ferry operates 24 hours a day, seven days a week. The posted speed limit for this section is from 35 to 55 mph.

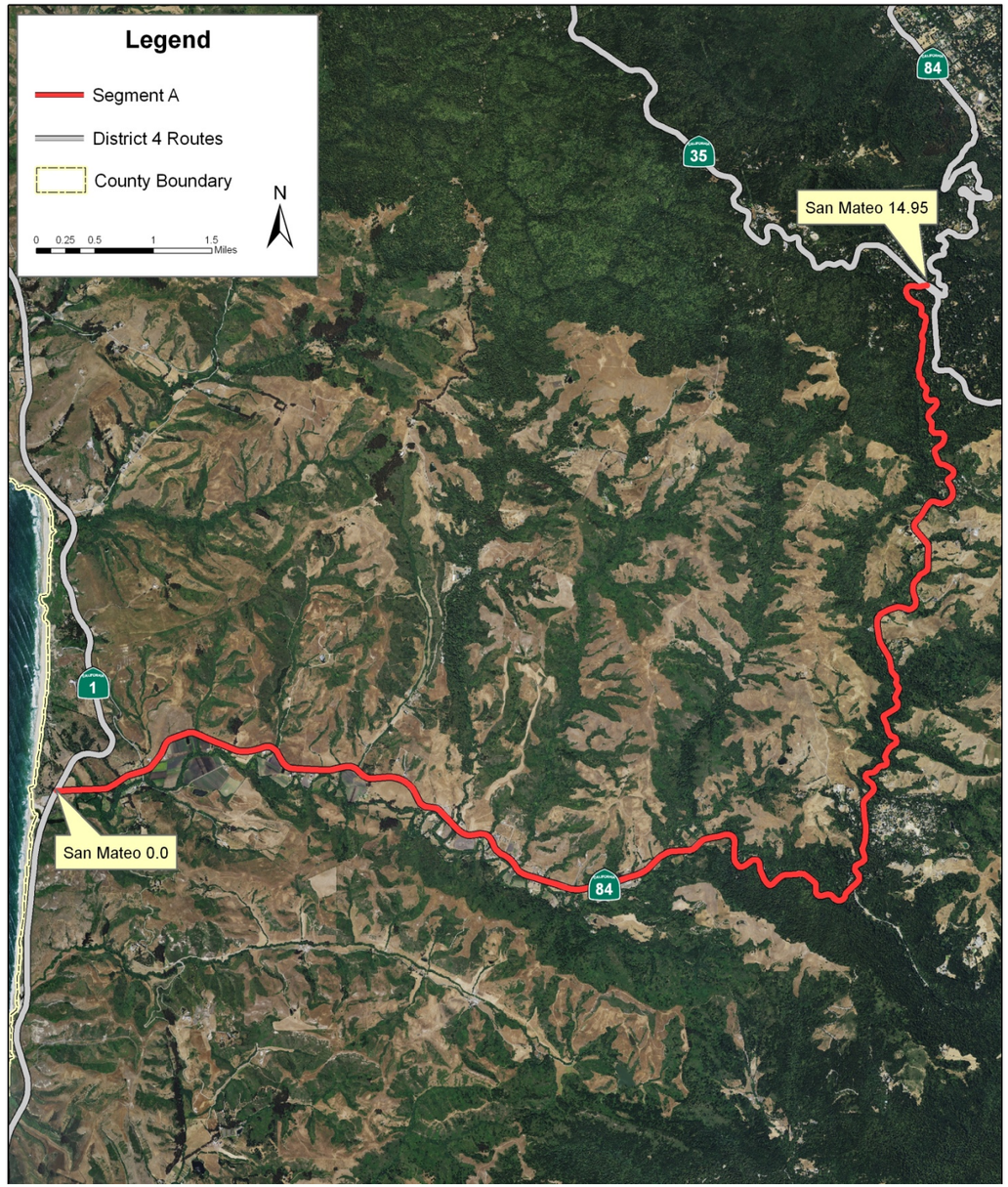
Segment Q

SR-84 continues as a levee road in the Sacramento San Joaquin delta. Surrounding land uses are rural in nature with low traffic volumes. There are areas of the roadway where localized failure of the levee is undermining the integrity of the roadbed. Caltrans Maintenance Division has identified a project in this area to dig out and repair all weak points. The posted speed limit for this section is 55 mph.

SEGMENT A	
Features	**Data**
County, City	San Mateo County, San Gregorio, Skywoods
Facility Type	Conventional route, rural
Existing Facility	2C
25-Year Concept	2C
Segment Characteristics	
Segment Limits	SR-1 to SR-35
Begin/End Post Mile	San Mateo PM 0.0 – 14.95
Length	14.95
Terrain	Mountainous
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	3-6 %
Truck Weigh Stations	No
Truck Parking	No
TOS Element	No
Multi Modal	
Bicycle Facilities	Allowed on the roadway
Transit Oriented Developments (TODs)	None
Park and Ride	None
Traffic Data	
AADT 2006 (Average Annual Daily Traffic)	1284-2262
AADT 2030	1865-3344
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2006 (AM/PM)	66-212/138-217
Peak Hour Volumes 2030 (AM/PM)	111-379/174-275
LOS 2009 (Level of Service)	C
Truck Volumes 2008	56-98
Truck Traffic: Truck Percentage of AADT (range)	4.4%
5+ Axle Truck Percentage of Truck AADT (range)	13.6%
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	2.27 (2 fatal accidents, 80 accidents with injuries)
Statewide Fatality + Injury Rate	0.90
Total Accident Rate	3.44
Statewide Total Accident Rate	1.79

* per million vehicle miles

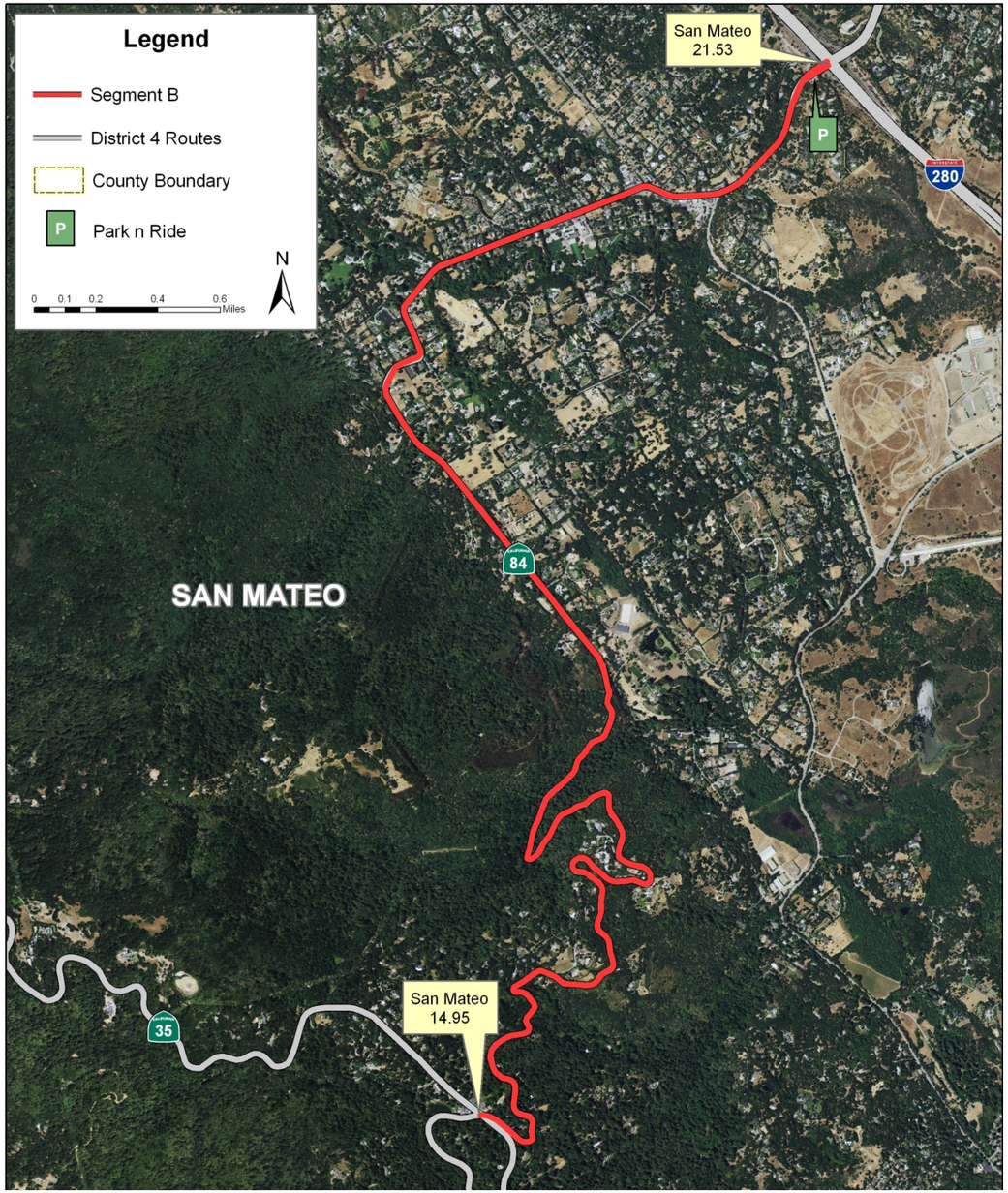
San Mateo County SR-84 PM 0.0 - 14.95
Segment A



SEGMENT B	
Features	**Data**
County/City	San Mateo County
Facility Type	Conventional route, rural
Existing Facility	2C
2035 Year Concept	2C
Segment Characteristics	
Segment Limits	SR-35 to I-280
Begin/End Post Mile	SM PM 14.95 – 21.53
Length	6.58 miles
Terrain	Mountainous
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	4—6%
Truck Weigh Stations	No
Truck Parking	No
TOS Element	None
Multi Modal	
Bicycle Facilities	Allowed on the roadway, Class III
Transit Oriented Developments (TODs)	No
Park and Ride	Woodside Rd and I-280 (29 spaces)
Traffic Data	
AADT 2006 (Average Annual Daily Traffic)	4782-19,362
AADT 2030	6138-24,769
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2006 (AM/PM)	421-1493/472-1630
Peak Hour Volumes 2030 (AM/PM)	624-1923/595-2039
LOS 2009 (Level of Service)	B
Truck Volumes 2008	139-561
Truck Traffic: Truck Percentage of AADT (range)	2.9%
5+ Axle Truck Percentage of Truck AADT (range)	3.3-13.6%
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	0.11 (0 fatal accidents, 6 accidents with injuries)
Statewide Fatality + Injury Rate	0.83
Total Accident Rate	0.22
Statewide Total Accident Rate	2.17

* per million vehicle miles

San Mateo County SR-84 PM 14.95 - 21.53
Segment B



SEGMENT C	
Features	**Data**
County/City	San Mateo, Redwood City
Facility Type	Conventional urban
Existing Facility	4C
2035 Year Concept	4C
Segment Characteristics	
Segment Limits	I-280 to SR-82
Begin/End Post Mile	San Mateo PM 21.53 – 24.68
Length	3.15 miles
Terrain	Flat
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	0 – 3%
Truck Weigh Stations	None
Truck Parking	None
TOS Element	None
Multi Modal	
Bicycle Facilities	Allowed on the roadway, Class III
Transit Oriented Development (TODs)	None
Park and Ride Facilities	None
Traffic Data	
AADT 2006 (Average Annual Daily Traffic)	35,819-42,399
AADT 2030	43,751-51,770
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2006 (AM/PM)	3147-3238/3395-3565
Peak Hour Volumes 2030 (AM/PM)	3861-3973/4129-4322
LOS 2009 (Level of Service)	C
Truck Volumes 2008	1039-1230
Truck Traffic: Truck Percent of AADT (range)	2.9
5+Axle Truck Percentage of Truck AADT (range)	10.5
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	0.47 (2 fatal accidents, 53 accidents with injuries)
Statewide Fatality + Injury Rate	0.69
Total Accident Rate	1.15
Statewide Total Accident Rate	1.69

* per million vehicle miles

San Mateo County SR-84 PM 21.53 - 24.68
Segment C

SEGMENT D	
Features	**Data**
County/City	San Mateo County, Redwood City
Facility Type	Expressway
Existing Facility	4E
2035 Year Concept	6E
Segment Characteristics	
Segment Limits	SR-82 to North Jct US 101
Begin/End Post Mile	San Mateo PM 24.68 – 25.72
Length	1.04 miles
Terrain	Flat
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	0 – 3%
Truck Weigh Stations	None
Truck Parking	None
TOS Element	None
Multi Modal	
Bicycle Facilities	Allowed on the roadway
Transit Oriented Development (TODs)	None
Park and Ride Facilities	None
Traffic Data	
AADT 2006 (Average Annual Daily Traffic)	54,937
AADT 2030	65,252
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2006 (AM/PM)	3400/3737
Peak Hour Volumes 2030 (AM/PM)	4133/4338
LOS 2009 (Level of Service)	E
Truck Volumes 2008	1615
Truck Traffic: Truck Percent of AADT (range)	2.9%
5+Axle Truck Percentage of Truck AADT (range)	21.0%
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	0.76 (0 fatal accidents, 37 accidents with injuries)
Statewide Fatality + Injury Rate	0.43
Total Accident Rate	2.44
Statewide Total Accident Rate	1.05

* per million vehicle miles

San Mateo County SR-84 PM 24.68 - 25.72
Segment D

SEGMENT E	
Features	**Data**
County/City	San Mateo, Menlo Park/East Palo Alto
Facility Type	Expressway
Existing Facility	6E
2035 Year Concept	6E
Segment Characteristics	
Segment Limits	US 101 south junction to SR-109 (University Ave)
Begin/End Post Mile	San Mateo PM 25.87 – 28.20
Length	2.33 miles
Terrain	Flat
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	0 – 3%
Truck Weigh Stations	None
Truck Parking	None
TOS Element	CCTV
Multi Modal	
Bicycle Facilities	Class I off street shared path
Transit Oriented Development (TODs)	None
Park and Ride Facilities	None
Traffic Data	
AADT 2006 (Average Annual Daily Traffic)	54,212
AADT 2030	69,098
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2006 (AM/PM)	3294-4799/2924-4342
Peak Hour Volumes 2030 (AM/PM)	4020-5865/3706-5343
LOS 2009 (Level of Service)	E-F
Truck Volumes 2008	2446
Truck Traffic: Truck Percent of AADT (range)	2.9 – 4.5%
5+Axle Truck Percentage of Truck AADT (range)	14.2 – 41.7%
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	0.45 (1 fatal accident, 39 accidents with injuries)
Statewide Fatality + Injury Rate	0.55
Total Accident Rate	1.04
Statewide Total Accident Rate	1.27

* per million vehicle miles

San Mateo County SR-84 PM R25.87 - R28.2
Segment E

SEGMENT F	
Features	**Data**
County/City	San Mateo/Alameda County
Facility Type	Freeway
Existing Facility	6F
2035 Year Concept	6F
Segment Characteristics	
Segment Limits	SR-109 (University Ave) to SM/ALA Co Line
Begin/End Post Mile	SM PM 28.20 – 30.14
Length	1.94 miles
Terrain	Flat
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	0 – 3%
Truck Weigh Stations	None
Truck Parking	None
TOS Element	CCTV, EMS, CMS
Multi Modal	
Bicycle Facilities	Class II Bike Lane
Transit Oriented Development (TODs)	None
Park and Ride Facilities	None
Traffic Data	
AADT 2006 (Average Annual Daily Traffic)	72,800
AADT 2030	105,800
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2006 (AM/PM)	6237/6636
Peak Hour Volumes 2030 (AM/PM)	9705/9050
LOS 2009 (Level of Service)	F
Truck Volumes 2008	3279
Truck Traffic: Truck Percent of AADT (range)	4.5%
5+Axle Truck Percentage of Truck AADT (range)	41.7 %
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	0.20 (0 fatal accidents, 26 accidents with injuries)
Statewide Fatality + Injury Rate	0.63
Total Accident Rate	0.50
Statewide Total Accident Rate	1.48

* per million vehicle miles

San Mateo/Alameda County SR-84 PM R28.20 - R30.14
Segment F

SEGMENT G	
Features	**Data**
County/City	Alameda County
Facility Type	Freeway
Existing Facility	6F
2035 Year Concept	6F
Segment Characteristics	
Segment Limits	ALA/SM Co Line to Dumbarton Toll Plaza
Begin/End Post Mile	Alameda PM 0.0 – 3.2
Length	3.20 miles
Terrain	Flat
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	0 – 3%
Truck Weigh Stations	None
Truck Parking	None
TOS Element	CCTV, EMS HAR
Multi Modal	
Bicycle Facilities	Class II Bike lane, Not allowed on facility to end of SB I-880 off ramp R5.93 ; parallel path available. SF Bay Trail crosses under bridge at PM 0.61.
Transit Oriented Development (TODs)	None
Park and Ride Facilities	None
Traffic Data	
AADT 2008 (Average Annual Daily Traffic)	72,800
AADT 2030	105,800
Vehicle Hours of Delay 2008	(AM) 70 @ Dumbarton Toll Plaza
Peak Hour Volumes 2008 (AM/PM)	6237/6636
Peak Hour Volumes 2030 (AM/PM)	9705/9050
LOS 2008 (Level of Service)	C
Truck Volumes 2007	3279
Truck Traffic: Truck Percent of AADT (range)	4.5%
5+Axle Truck Percentage of Truck AADT (range)	41.7 %
Accident Data* (Jan. 06 – Dec 08	
Fatality + Injury Rate	0.23 (1 fatal accident, 48 accidents with injuries)
Statewide Fatality + Injury Rate	0.31
Total Accident Rate	0.74
Statewide Total Accident Rate	0.95

* per million vehicle miles

Alameda County SR-84 PM R0 - R3.2
Segment G

SEGMENT H	
Features	**Data**
County/City	Alameda County, Newark, Fremont
Facility Type	Freeway
Existing Facility	7F (1H)
2035 Year Concept	7F (1H)
Segment Characteristics	
Segment Limits	Dumbarton Toll Plaza to North Jct I-880
Begin/End Post Mile	Alameda PM 3.20 – 6.01
Length	2.81 miles
Terrain	Flat
HOV Lanes (PM to PM)	WB HOV I-880 to Dumbarton Toll Plaza
Percent Grade (PM to PM)	0 – 3%
Truck Weigh Stations	None
Truck Parking	None
TOS Element	Ramp Metering, CCTV, CMS
Multi Modal	
Bicycle Facilities	Park and Ride, Class II and III Bike lanes,
Transit Oriented Development (TODs)	None
Park and Ride Facilities	Ardenwood and SR-84 (350 spaces) with transit service.
Traffic Data	
AADT 2008 (Average Annual Daily Traffic)	76,460
AADT 2030	115,100
Vehicle Hours of Delay 2008	AM 70 Dumbarton Toll Plaza PM .290 Newark Blvd to I-880.
Peak Hour Volumes 2008 (AM/PM)	5460/5860
Peak Hour Volumes 2030 (AM/PM)	8174/8873
LOS 2008 (Level of Service)	E
Truck Volumes 2007	3441
Truck Traffic: Truck Percent of AADT (range)	2.8 – 4.5 %
5+Axle Truck Percentage of Truck AADT (range)	11.7 – 34.2 %
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	0.33 (0 fatal accidents, 64 accidents with injuries)
Statewide Fatality + Injury Rate	0.28
Total Accident Rate	0.90
Statewide Total Accident Rate	0.87

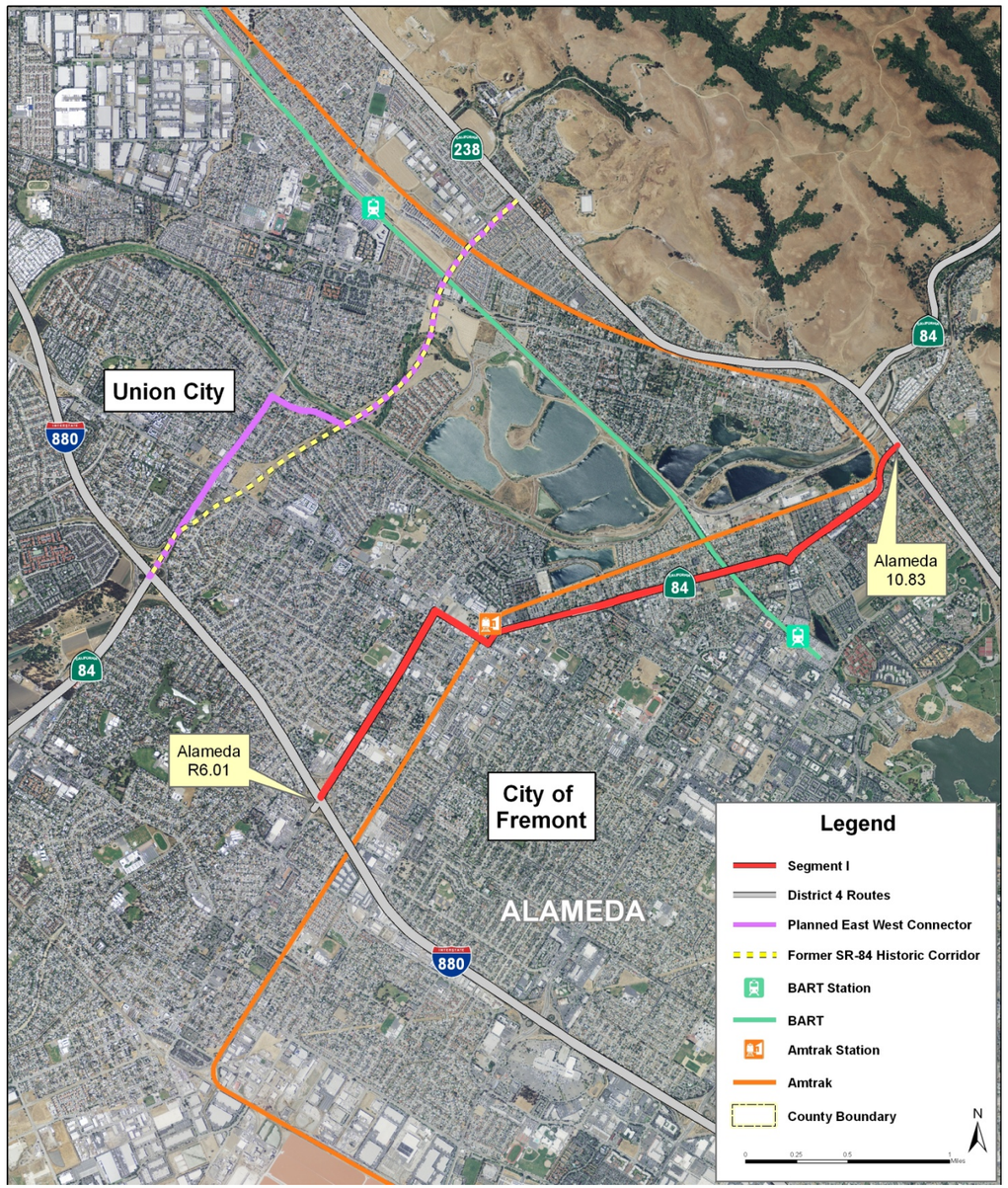
* per million vehicle miles

Alameda County SR-84 PM R3.2 - R6.01
Segment H

SEGMENT I	
Features	**Data**
County/City	Alameda County Fremont
Facility Type	Conventional
Existing Facility	2C-4C
2035 Year Concept	Relinquish
Segment Characteristics	
Segment Limits	South Jct I-880 to SR-238
Begin/End Post Mile	Alameda PM 6.92 – 10.83
Length	4.82 miles
Terrain	Flat
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	0 – 3%
Truck Weigh Stations	None
Truck Parking	None
TOS Element	None
Multi Modal	
Bicycle Facilities	Class II Bike lane
Transit Oriented Development (TODs)	Fremont BART
Park and Ride Facilities	ACE Station
Traffic Data	
AADT 2008 (Average Annual Daily Traffic)	20,000
AADT 2030	44,300
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2008 (AM/PM)	1460/1790
Peak Hour Volumes 2030 (AM/PM)	2010-2780/4370-5230
LOS 2008 (Level of Service)	E
Truck Volumes 2008	700
Truck Traffic: Truck Percent of AADT (range)	3.5 %
5+Axle Truck Percentage of Truck AADT (range)	45.3%
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	1.21 (1 fatal accident, 107 accidents with injuries)
Statewide Fatality + Injury Rate	0.66
Total Accident Rate	1.79
Statewide Total Accident Rate	1.64

* per million vehicle miles

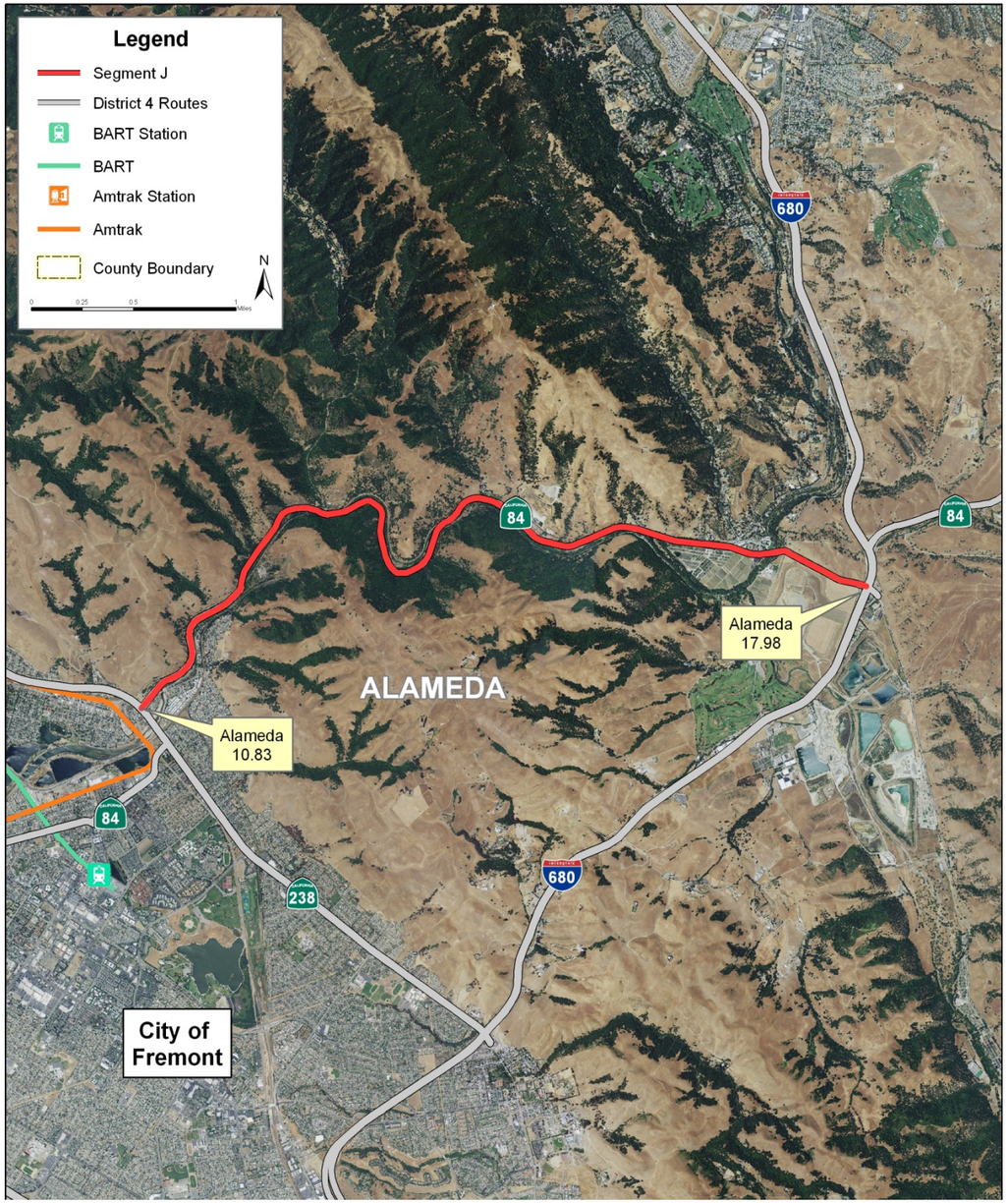
Alameda County SR-84 PM R6.01 - 10.83
Segment I



SEGMENT J	
Features	**Data**
County/City	Alameda County Fremont
Facility Type	Conventional Suburban
Existing Facility	2C
2035 Year Concept	2C
Segment Characteristics	
Segment Limits	SR-238 to South Jct I-680
Begin/End Post Mile	Alameda PM 10.83 – 17.98
Length	7.15 miles
Terrain	Flat roadbed surrounded by rolling hills
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	None
Truck Weigh Stations	None
Truck Parking	None
TOS Element	HAR
Multi Modal	
Bicycle Facilities	Yes, shared on roadway
Transit Oriented Development (TODs)	None
Park and Ride Facilities	None
Traffic Data	
AADT 2008 (Average Annual Daily Traffic)	7170-28,040
AADT 2030	14,000-54,400
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2008 (AM/PM)	680-2300/650-2090
Peak Hour Volumes 2030 (AM/PM)	2050-2920/2810-3280
LOS 2008 (Level of Service)	B (F near Sunol Corners)
Truck Volumes 2008	172-673
Truck Traffic: Truck Percent of AADT (range)	1.6 –2.4 %
5+Axle Truck Percentage of Truck AADT (range)	0.5 – 65.2%
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	0.52 (2 fatal accidents, 54 accidents with injuries)
Statewide Fatality + Injury Rate	0.73
Total Accident Rate	0.82
Statewide Total Accident Rate	1.58

* per million vehicle miles

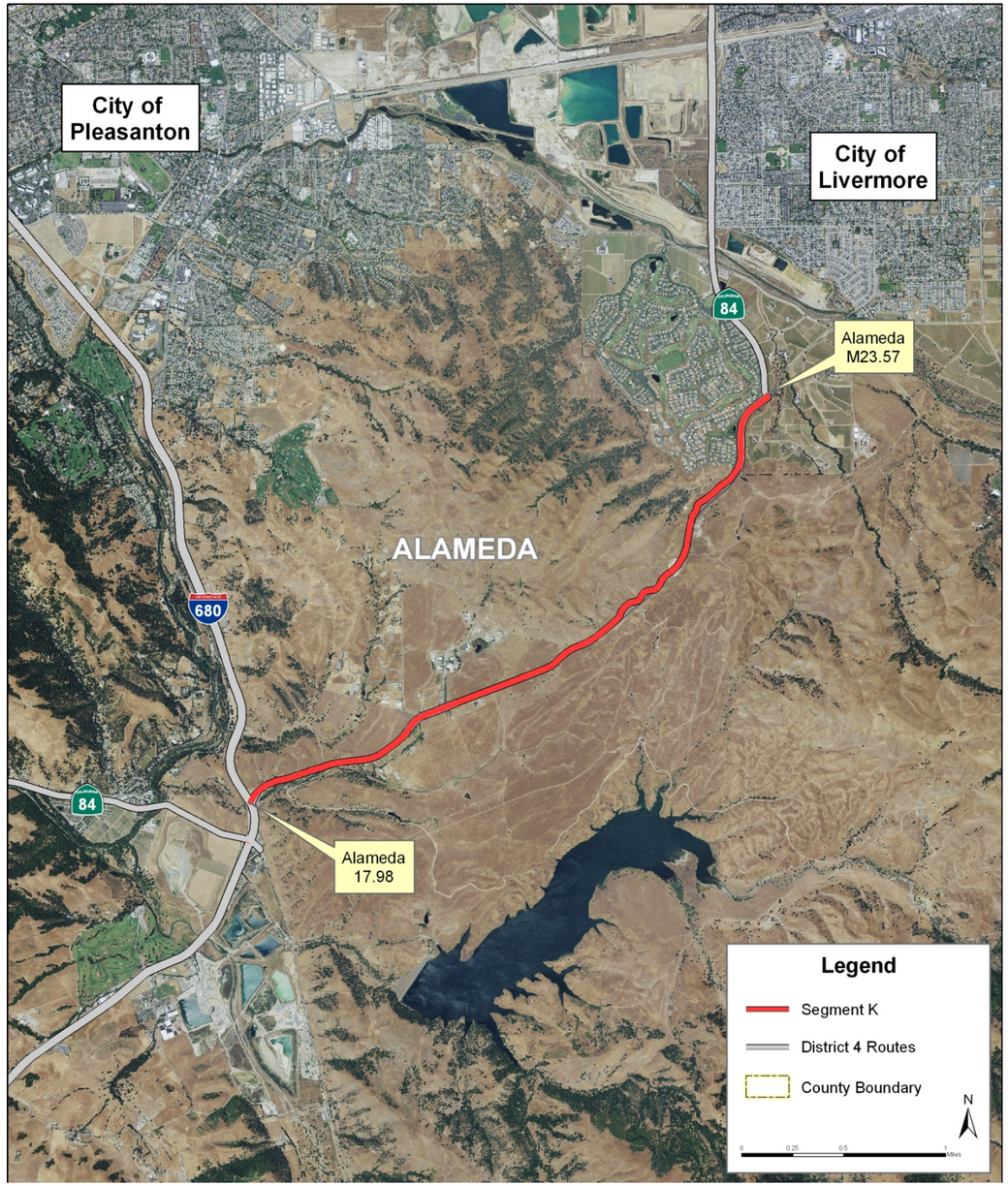
Alameda County SR-84 PM 10.83 - 17.98
Segment J



SEGMENT K	
Features	**Data**
County/City	Alameda County
Facility Type	Conventional rural
Existing Facility	2C-4C (1 TCL)
2035 Year Concept	4E
Segment Characteristics	
Segment Limits	North Jct I-680 to Vallecitos Rd/Isabel Ave split (New SR-84 Alignment)
Begin/End Post Mile	Alameda PM 17.98 – 23.57
Length	5.59 miles
Terrain	Mountainous, rural
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	0 – 6%
Truck Weigh Stations	None
Truck Parking	None
TOS Element	None
Multi Modal	
Bicycle Facilities	Yes, Shared on roadway
Transit Oriented Development (TODs)	None
Park and Ride Facilities	None
Traffic Data	
AADT 2008 (Average Annual Daily Traffic)	27,580
AADT 2030	60,200
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2008 (AM/PM)	2250/2290
Peak Hour Volumes 2030 (AM/PM)	4990/4910
LOS 2008 (Level of Service)	D
Truck Volumes 2007	441
Truck Traffic: Truck Percent of AADT (range)	1.6%
5+Axle Truck Percentage of Truck AADT (range)	15.3%
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	0.32 (4 fatal accidents, 47 accidents with injuries)
Statewide Fatality + Injury Rate	0.53
Total Accident Rate	0.79
Statewide Total Accident Rate	1.16

* per million vehicle miles

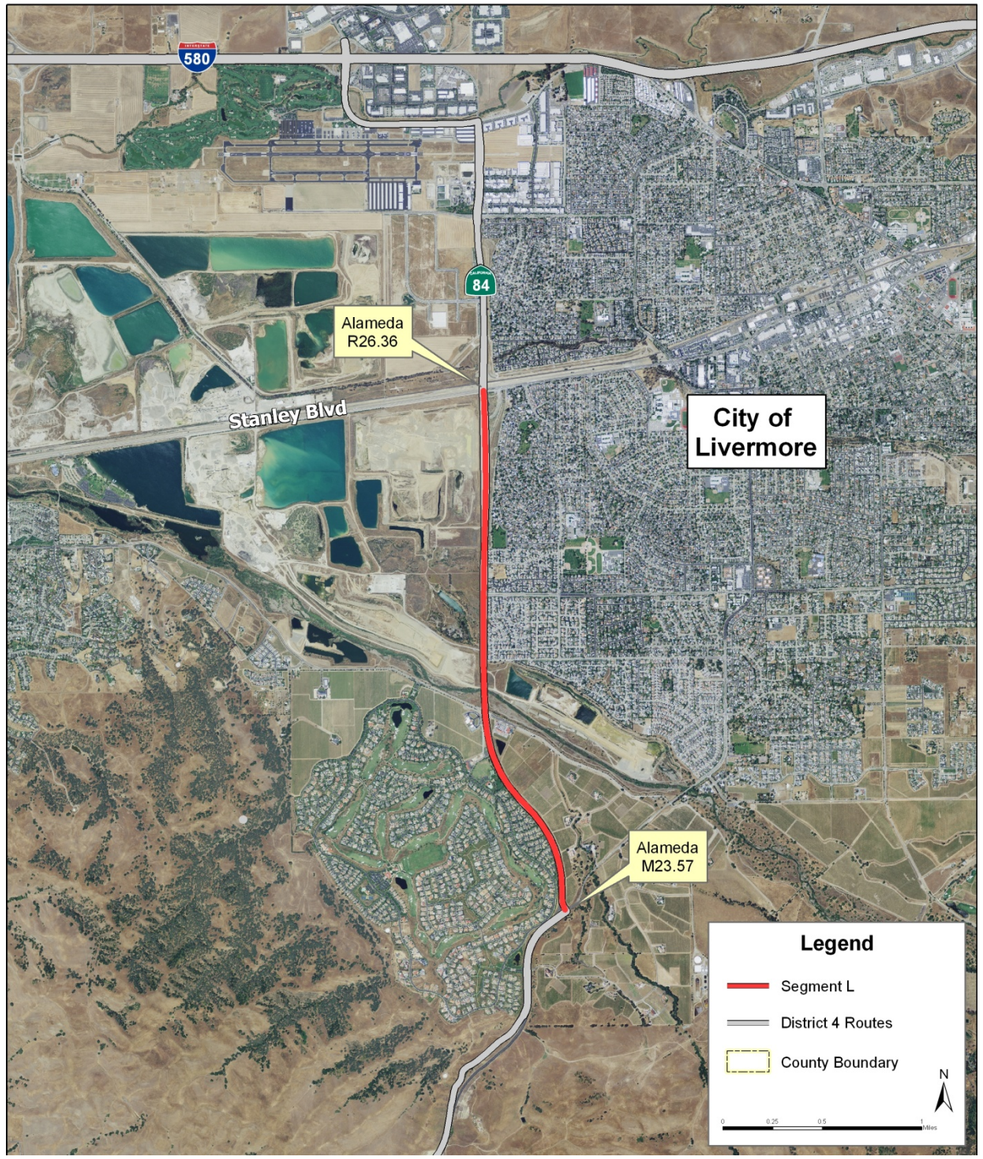
Alameda County SR-84 PM 17.98 - M23.57
Segment K



SEGMENT L	
Features	**Data**
County/City	Alameda County, Livermore
Facility Type	Conventional
Existing Facility	2C-4C
2035 Year Concept	4E
Segment Characteristics	
Segment Limits	Vallecitos Rd/Isabel Ave split (New SR-84 Alignment) to Stanley Blvd
Begin/End Post Mile	Alameda PM 23.57 – 26.36
Length	2.79 miles
Terrain	Rolling hills
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	0 – 3%
Truck Weigh Stations	None
Truck Parking	None
TOS Element	None
Multi Modal	
Bicycle Facilities	Class I, shared use path and also shared on roadway
Transit Oriented Development (TODs)	None
Park and Ride Facilities	None
Traffic Data	
AADT 2008 (Average Annual Daily Traffic)	13,660-22,730
AADT 2030	36,100-47,700
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2008 (AM/PM)	910-2750/860-1780
Peak Hour Volumes 2030 (AM/PM)	3630-5410/3620-5280
LOS 2008 (Level of Service)	C (without widening)
Truck Volumes 2008	314-523
Truck Traffic: Truck Percent of AADT (range)	2.3%
5+Axle Truck Percentage of Truck AADT (range)	10.5-21.0%
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	0.51 (0 fatal accidents, 21 accidents with injuries)
Statewide Fatality + Injury Rate	0.57
Total Accident Rate	1.13
Statewide Total Accident Rate	1.36

* per million vehicle miles

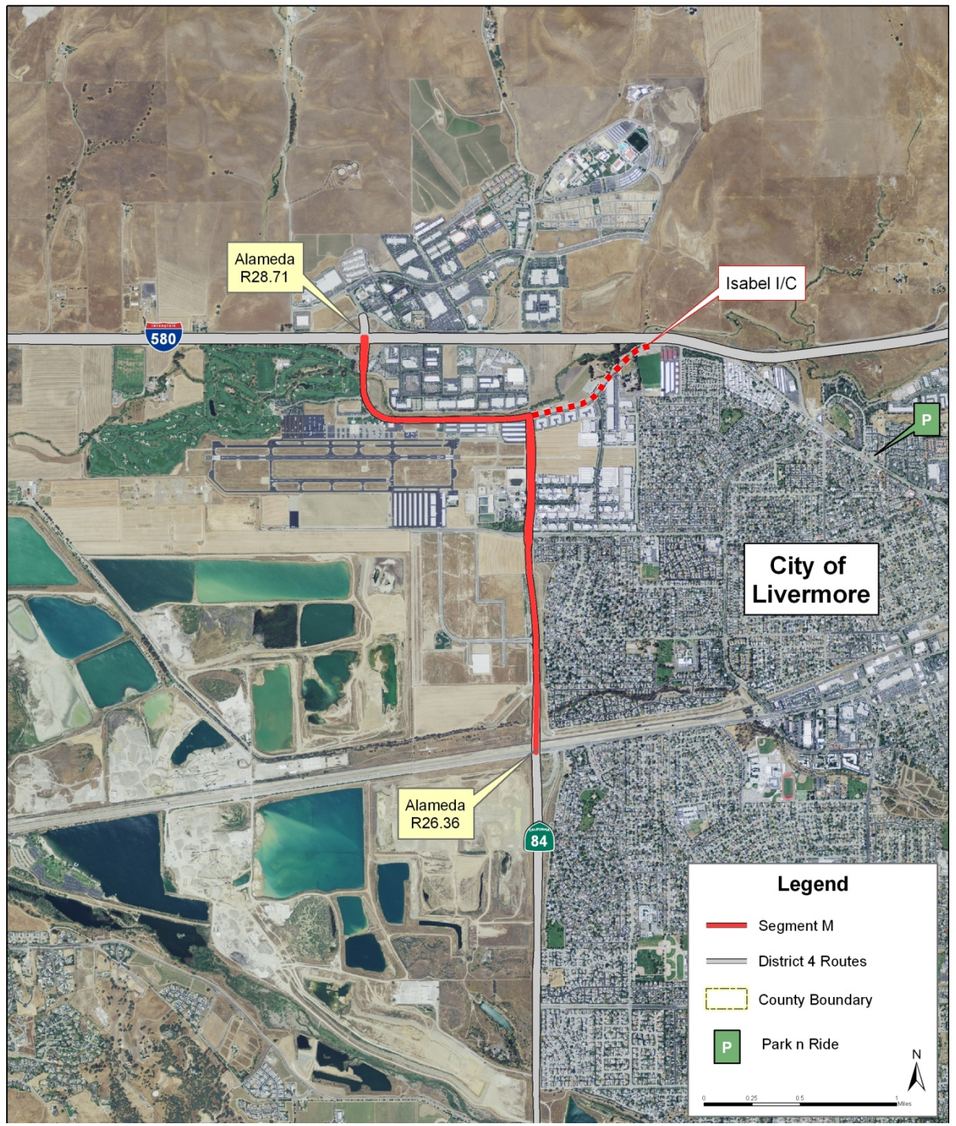
Alameda County SR-84 PM M23.57 - R26.36
Segment L



SEGMENT M	
Features	**Data**
County/City	Alameda County, Livermore
Facility Type	Conventional suburban
Existing Facility	2C-4C
2035 Year Concept	6E
Segment Characteristics	
Segment Limits	Stanley Blvd to New Isabel I/C (once new I/C is completed the existing routing will be recinded.
Begin/End Post Mile	Alameda PM R26.36 – R28.71
Length	2.35 miles
Terrain	Flat
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	None
Truck Weigh Stations	None
Truck Parking	None
TOS Element	None
Multi Modal	
Bicycle Facilities	Park and Ride and Class II bike lane
Transit Oriented Development (TODs)	None
Park and Ride Facilities	Livermore @ East Airway Blvd and Rutan (121 spaces)
Traffic Data	
AADT 2008 (Average Annual Daily Traffic)	21,730
AADT 2030	89,400
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2008 (AM/PM)	1380/1600
Peak Hour Volumes 2030 (AM/PM)	3430/5850
LOS 2008 (Level of Service)	C (without widening)
Truck Volumes 2008	601
Truck Traffic: Truck Percent of AADT (range)	2.7%
5+Axle Truck Percentage of Truck AADT (range)	32.8-41.7%
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	0.40 (0 fatal accidents, 23 accidents with injuries)
Statewide Fatality + Injury Rate	0.60
Total Accident Rate	1.07
Statewide Total Accident Rate	1.47

* per million vehicle miles

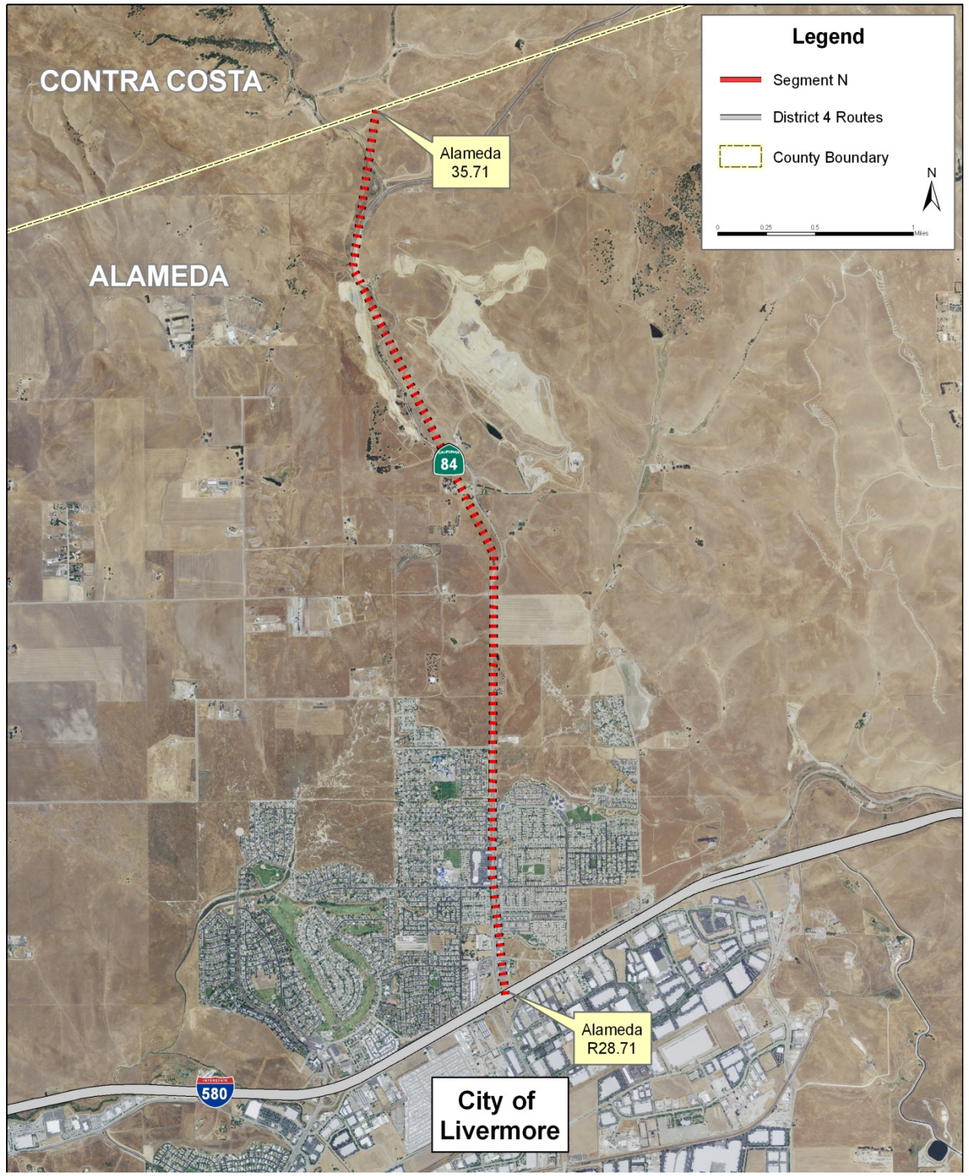
Alameda County SR-84 PM R26.36 - R28.71
Segment M



SEGMENT N (Unconstructed/Unadopted)	
Features	**Data**
County/City	
Facility Type	
Existing Facility	Unconstructed
2035 Year Concept	Unconstructed
Segment Characteristics	
Segment Limits	
Begin/End Post Mile	
Length	
Terrain	
HOV Lanes (PM to PM)	
Percent Grade (PM to PM)	
Truck Weigh Stations	
Truck Parking	
TOS Element	
Multi Modal	
Bicycle Facilities	
Transit Oriented Development (TODs)	
Park and Ride Facilities	
Traffic Data	
AADT 2008 (Average Annual Daily Traffic)	
AADT 2030	
Vehicle Hours of Delay 2008	
Peak Hour Volumes 2007 (AM/PM)	
Peak Hour Volumes 2030 (AM/PM)	
LOS 2008 (Level of Service)	
Truck Volumes 2008	
Truck Traffic: Truck Percent of AADT (range)	
5+Axle Truck Percentage of Truck AADT (range)	
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	
Statewide Fatality + Injury Rate	
Total Accident Rate	
Statewide Total Accident Rate	

* per million vehicle miles

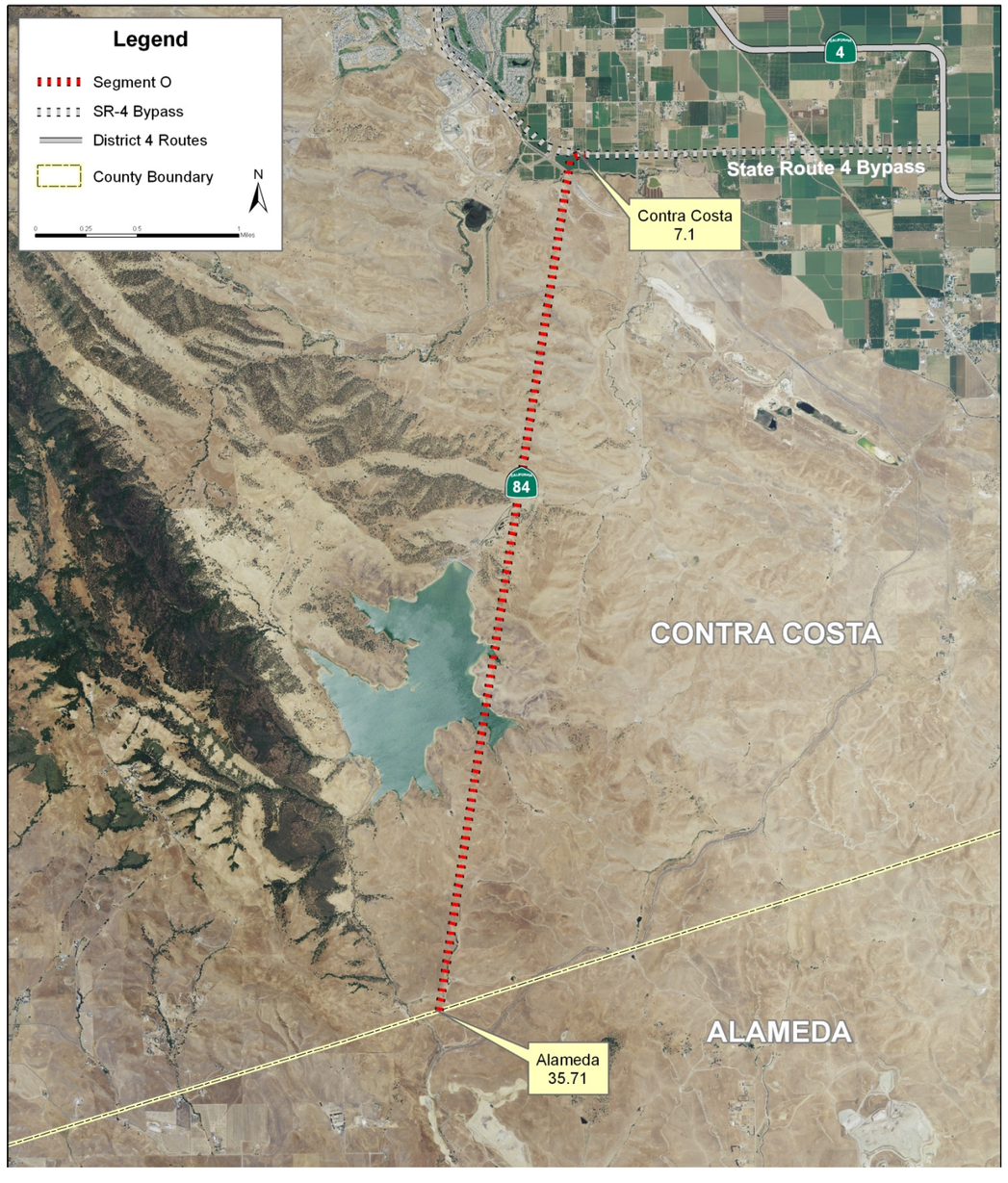
Alameda County SR-84 PM R28.71 - 35.71
Segment N (Unconstructed)



SEGMENT O (Unconstructed/Unadopted)	
Features	**Data**
County/City	
Facility Type	
Existing Facility	Unconstructed
2035 Year Concept	Unconstructed
Segment Characteristics	
Segment Limits	
Begin/End Post Mile	
Length	
Terrain	
HOV Lanes (PM to PM)	
Percent Grade (PM to PM)	
Truck Weigh Stations	
Truck Parking	
TOS Element	
Multi Modal	
Bicycle Facilities	
Transit Oriented Development (TODs)	
Park and Ride Facilities	
Traffic Data	
AADT 2008 (Average Annual Daily Traffic)	
AADT 2030	
Vehicle Hours of Delay 2008	
Peak Hour Volumes 2007 (AM/PM)	
Peak Hour Volumes 2030 (AM/PM)	
LOS 2008 (Level of Service)	
Truck Volumes 2008	
Truck Traffic: Truck Percent of AADT (range)	
5+Axle Truck Percentage of Truck AADT (range)	
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	
Statewide Fatality + Injury Rate	
Total Accident Rate	
Statewide Total Accident Rate	

* per million vehicle miles

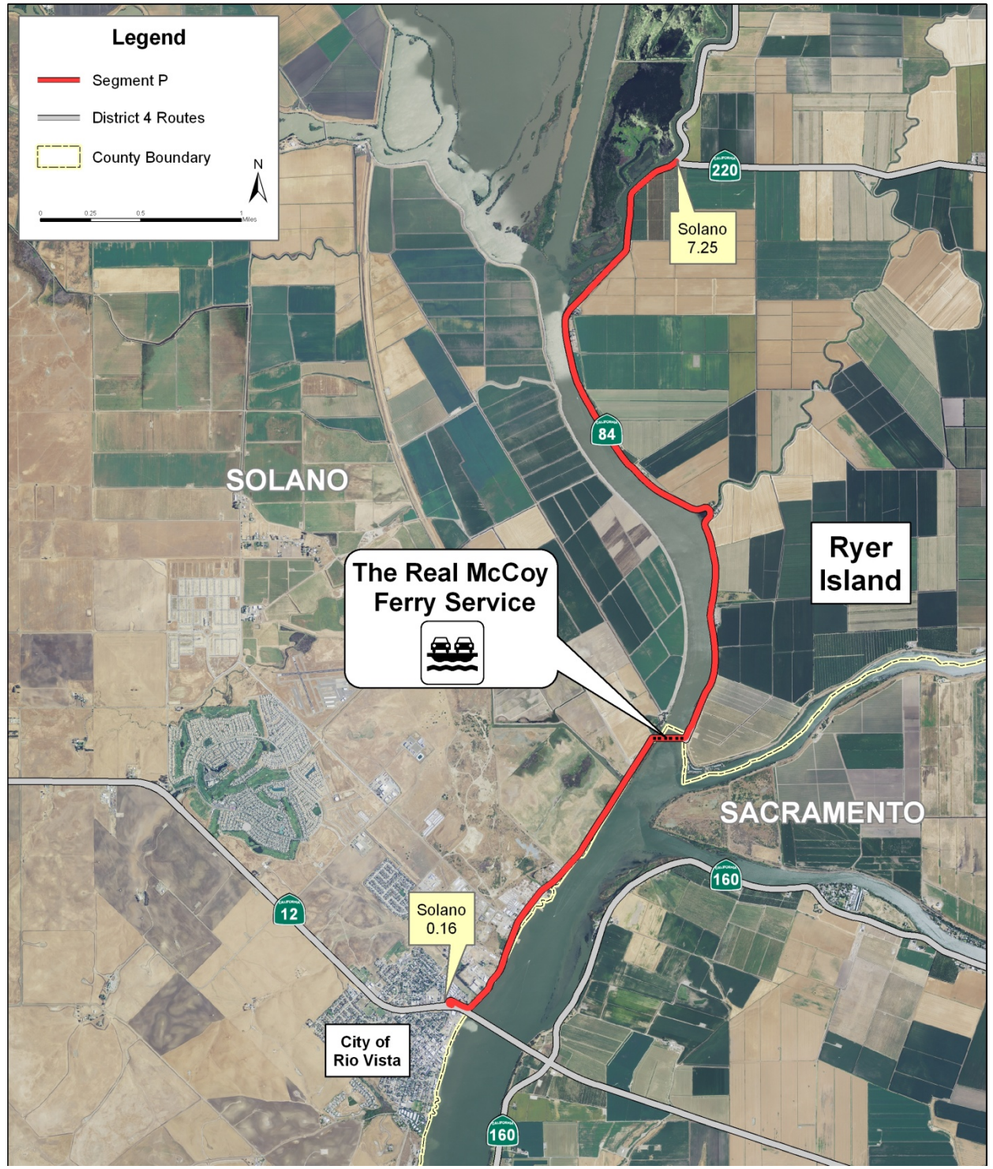
Alameda/Contra Costa County SR-84 PM 35.71 - 7.1
Segment O (Unconstructed)



SEGMENT P	
Features	**Data**
County/City	Solano Rio Vista
Facility Type	Conventional
Existing Facility	2C
2035 Year Concept	2C
Segment Characteristics	
Segment Limits	Rio Vista to SR-220
Begin/End Post Mile	Solano PM 0.16 – 7.25
Length	7.09 miles
Terrain	Flat
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	None
Truck Weigh Stations	None
Truck Parking	None
TOS Element	None
Multi Modal	
Bicycle Facilities	Yes, shared on roadway
Transit Oriented Development (TODs)	No
Park and Ride Facilities	Rio Vista Main St and Front St (10 spaces)
Traffic Data	
AADT 2007 (Average Annual Daily Traffic)	1170
AADT 2030	3200
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2007 (AM/PM)	70/90
Peak Hour Volumes 2030 (AM/PM)	250/310
LOS 2008 (Level of Service)	A
Truck Volumes 2008	90
Truck Traffic: Truck Percent of AADT (range)	7.4 %
5+Axle Truck Percentage of Truck AADT (range)	59 – 77.8 %
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	0.22 (0 fatal accidents, 1 accident with injuries)
Statewide Fatality + Injury Rate	1.02
Total Accident Rate	0.22
Statewide Total Accident Rate	2.54

* per million vehicle miles

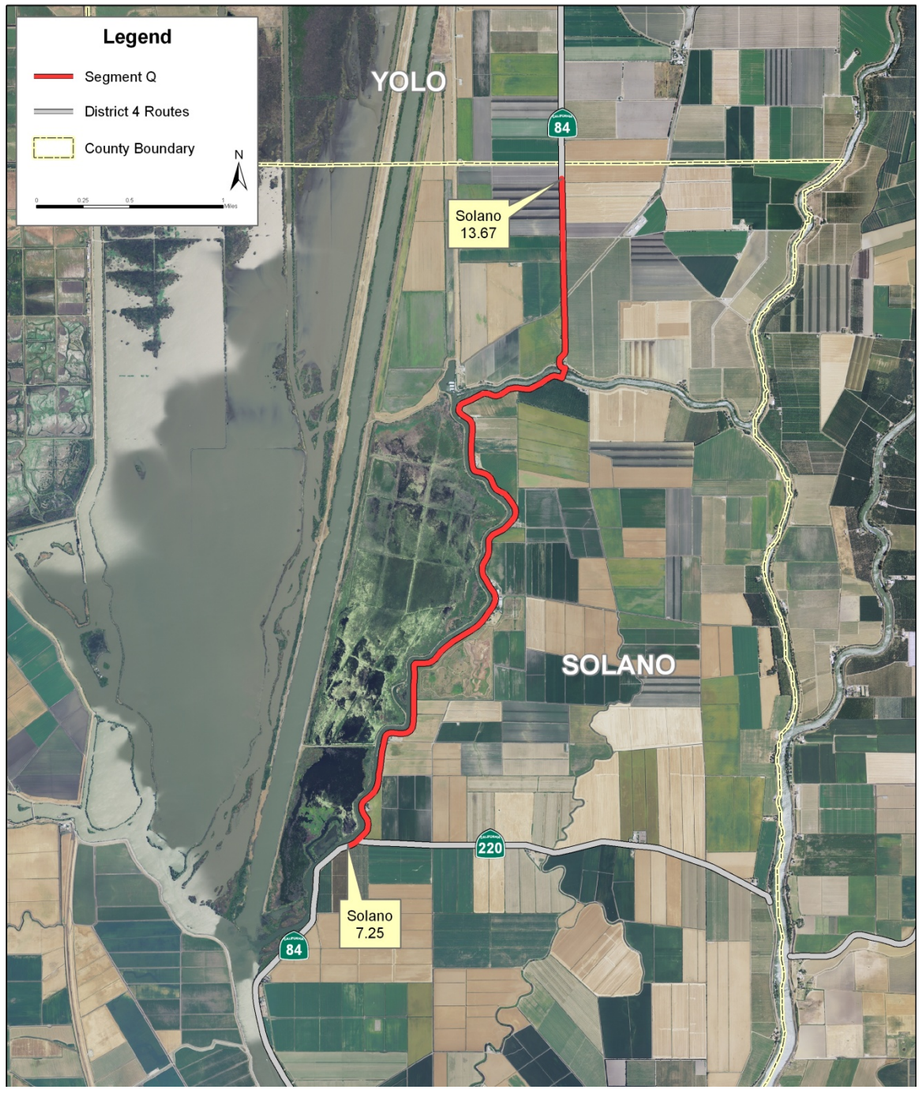
Solano County SR-84 PM .16 - 7.25
Segment P



SEGMENT Q	
Features	**Data**
County/City	Solano
Facility Type	Conventional
Existing Facility	2C
2035 Year Concept	2C
Segment Characteristics	
Segment Limits	SR-220 to Solano/Yolo County line
Begin/End Post Mile	Solano PM 7.25 – 13.67
Length	6.42 miles
Terrain	Flat
HOV Lanes (PM to PM)	None
Percent Grade (PM to PM)	None
Truck Weigh Stations	None
Truck Parking	None
TOS Element	None
Multi Modal	
Bicycle Facilities	Yes, shared on roadway
Transit Oriented Development (TODs)	No
Park and Ride Facilities	No
Traffic Data	
AADT 2007 (Average Annual Daily Traffic)	230
AADT 2030	1070
Vehicle Hours of Delay 2008	n/a
Peak Hour Volumes 2007 (AM/PM)	20/20
Peak Hour Volumes 2030 (AM/PM)	200/250
LOS 2008 (Level of Service)	A
Truck Volumes 2008	15
Truck Traffic: Truck Percent of AADT (range)	6.5 %
5+Axle Truck Percentage of Truck AADT (range)	65.7 – 67.6 %
Accident Data* (Jan. 06 – Dec 08)	
Fatality + Injury Rate	0.71 (0 fatal accidents, 1 accident with injuries)
Statewide Fatality + Injury Rate	1.09
Total Accident Rate	2.13
Statewide Total Accident Rate	2.69

* per million vehicle miles

Solano County SR-84 PM 7.25 - 13.67
Segment Q



Additional Corridor Data for SR-84

Table A2. Additional SR-84 Corridor Data

Route Characteristics	Data
State Route and Interstate Intersections	San Mateo County: SR-35 (PM 14.95), I-280 (PM 21.53), SR-82 (PM 24.68), US 101 North (PM 25.72) US 101 South (PM 25.87), SR-109 (PM 28.20), Alameda County: I-880 (PM 6.01), SR-238 (PM 10.83), I-680 (PM 17.98), I--580 (PM R28.71) Solano County: SR-12 (PM 0.16), SR-220 (PM 7.25)
Cities Traversed	Cities of Woodside, Redwood City, Menlo Park, East Palo Alto, Newark, Fremont, Union City, Livermore, Rio Vista
Parallel Arterials	N/A
Existing Freeway Congestion	AM Peak Period Congestion: 70 hours daily delay (Dumbarton Bridge Toll Plaza)
	PM Peak Period Congestion: 290 hours daily delay SR-84 EB (Newark Blvd to I-880)
Environmental	
Air Quality Basin	San Francisco Bay Area Air Basin
Air Quality District	Bay Area Air Quality Management District
BAAQMD Attained	CO, NO2, SO2, Sulfates, Lead.
BAAQMD Not Attained	Ozone, PM10, PM2.5.
Intermodal	
Park & Ride lots	Woodside Road/I-280, Fremont ACE Station, Livermore
Transit Oriented Developments (TOD)	Fremont BART station
Modal Split (American Community Survey 2008)	
Drive Alone	76.5%
Carpool	8.8%
Public Transit	5.2%
Walk	1.9%
Work at Home	4.8%
Other (including bicycle)	2.8%
Summary of Existing Studies in Corridor	**I-580 East Corridor System Management Plan (2010)** The purpose of a Corridor System Management Plan is to "preserve the mobility gains of urban corridor capacity improvements over time and to describe how they intend to do so in project nominations" (CTC CMIA Program Guidelines, Nov. 8, 2006). **Southern Alameda County SR-84 Historic Parkway LATIP (2009)** The LATIP consists of those projects approved by the local agencies with support from a TAC which will help fill the highway transportation infrastructure need created when the Route 84 Historic Parkway project was no longer pursued, replaced with the East-West Connector Project. **Tri-Valley Triangle Traffic Study (2007)** The Cities of Pleasanton, Livermore, Dublin and Alameda County were involved in this study. This effort intended to evaluate and prioritize future regional traffic projects in the area bounded by I-580, I-680 and SR-84. A PAC was developed to help guide policy direction of study findings.

APPENDIX B

Pertinent Federal, State, and Regional Transportation Plans, Programs and Directives

Federal

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

This federal law authorizes transportation funding through 2009 and establishes new requirements for statewide and metropolitan transportation planning. The act authorizes all federal surface transportation programs for highways, highway safety, and transit for the five-year period 2005-2009.

Federal Transportation Improvement Program (FTIP)

All federally funded projects, and regionally significant projects (regardless of funding), must be listed in the FTIP per federal law. A project is not eligible to be programmed in the FTIP until it is programmed in the State Transportation Improvement Program (STIP) or in the State Highway Operations and Protection Program (SHOPP). Other types of funding (Federal Demonstration, Congestion Mitigation and Air Quality (CMAQ), Transportation Enhancement Activities (TEA), and Surface Transportation Program (STP) must be officially approved before the projects can be included in the FTIP.

State

California Transportation Plan, April 2006

The “CTP 2030” is a statewide, long-range transportation policy plan that provides for the movement of people, goods, services, and information. The CTP offers a blueprint to guide future transportation decisions and investments that will ensure California's ability to compete globally, provide safe and effective mobility for all persons, better link transportation and land use decisions, improve air quality, and reduce petroleum energy consumption.

Interregional Transportation Strategic Plan (ITSP)

Caltrans prepared the 1998 ITSP to consolidate and communicate key elements of its ongoing long- and short-range planning. It serves as a counterpart to the Regional Transportation Plans prepared by the 43 Regional Transportation Planning Agencies in California. Caltrans addresses the State Highway system in detail, with special emphasis on the statutorily-identified Interregional Road System (IRRS). The IRRS serves interregional movement of people and goods. There are currently 87 IRRS routes.

State Transportation Improvement Program (STIP)

The STIP is a listing of all capital improvement projects that are expected to receive an allocation of state transportation funds. The California Transportation Commission (CTC) biennially adopts and submits the STIP to the Legislature and Governor. The STIP is a resource management document to assist state and local entities to plan and implement transportation improvements and to utilize available resources in a cost-effective manner.

Regional Transportation Improvement Program (RTIP)

The Regional Transportation Improvement Program is a sub-element of the State Transportation Improvement Program (STIP). The Metropolitan Transportation Commission is responsible for developing regional project priorities for the RTIP for the nine counties of the Bay Area. The biennial RTIP is then submitted to the California Transportation Commission for inclusion in the STIP.

Interregional Transportation Improvement Program (ITIP)

The ITIP is a sub-element of the State Transportation Improvement Program. The statutes of 1997, Chapter 622-Senate Bill (SB) 45 established the Interregional Improvement Program (IIP) which includes projects to improve State highways, intercity passenger rail system, and projects to improve interregional movement of people and goods.

State Highway Operation and Protection Program (SHOPP)

Caltrans prepares the SHOPP for the expenditure of transportation funds for major capital improvements necessary to preserve and protect the State Highway System. The SHOPP is a four-year funding program. SHOPP projects include capital improvements for maintenance, safety, and rehabilitation of State highways and bridges.

Senate Bill 45

SB 45 establishes guidelines for the California Transportation Commission to administer the allocation of funds appropriated from the Public Transportation Account for capital transportation projects designed to improve transportation facilities.

California Strategic Growth Plan, January 2007

The Governor and Legislature have initiated the first phase of a comprehensive Strategic Growth Plan to address California's critical infrastructure needs over the next 20 years. California faces over $500 billion in infrastructure needs to meet the demands of a population expected to increase by 23 percent over the next two decades. In November 2006, the voters approved the first installment of that 20-year vision to rebuild California by authorizing a series of general obligation bonds totaling $42.7 billion.

Transportation System Development Plan (TSDP)

The TSDP is a listing of Caltrans recommended capacity-increasing improvements on State Highways. The purpose of the TSDP is to identify a comprehensive, reasonable and effective range of transportation improvements in modal categories to improve interregional and regional mobility and intermodal transfer of people and goods on State Highways and major travel corridors.

Goods Movement Action Plan (GMAP), January 2007

The Goods Movement Action Plan is a key component of California's Strategic Growth Plan and will guide allocation of $3.1 billion of the $19.9 billion approved by voters in the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006 (Proposition 1B). The GMAP identifies projects for consideration in the California Transportation Commission's allocation of $2 billion for infrastructure investment. The Air Resources Board will allocate the remaining $1 billion for emission reduction projects related to Goods Movement.

California State Rail Plan, October 2007

California's *Vision for Intercity Passenger Rail: Transportation in California* is guided by the Governor's Strategic Growth Plan, The Global Warming Solutions Act, Assembly Bill (AB) 32, the California Transportation Plan (2025), and the Department of Transportation's Mission/ Vision and Strategic Goals. Caltrans prepares a ten-year Rail Plan that includes both passenger and freight rail elements. The Rail Plan is updated every two years.

Caltrans Deputy Directive 64

Caltrans fully considers the needs of non-motorized travelers including pedestrians, bicyclists and persons with disabilities in all programming, planning, maintenance, construction, operations, and project development activities and products.

State Assembly Bill 32 (AB 32)—Global Warming Solutions Act, September 2006

This bill requires the State's GHG emissions to be reduced to 1990 levels by the year 2020. Caltrans' strategy to reduce global warming emissions has two elements. The first is to make transportation systems more efficient through operational improvements. The second is to integrate emission reduction measures into the planning, development, operations and maintenance of transportation elements.

State Assembly Bill 375 (AB 375)

SB 375 (Steinberg) was passed by the California State Assembly on August 25th, 2008, and by the State Senate on August 30th. The Governor signed it into law on September 30th, 2008. The bill mandates an integrated regional land use and transportation planning approach to reducing GHG emissions from automobiles and light trucks, principally by reducing vehicle miles traveled (VMT). Within the Bay Area, automobiles and light trucks account for about 26 percent of our 2007 GHG inventory and about 64 percent of emissions from the transportation sector. SB 375 explicitly assigns responsibilities to the Association of Bay Area Governments (ABAG) and to the Metropolitan Transportation Commission (MTC) to implement the bill's provisions for the Bay Area. Both agencies are members of the Joint Policy Committee (JPC). The polices in this document were approved by the JPC and provide guidance to the two lead regional agencies in fulfilling their responsibilities in collaboration

with their JPC partners, the Bay Area Air Quality Management District (Air District) and the San Francisco Bay Conservation and Development Commission (BCDC).

Caltrans — Climate Action Plan (2006)

GHG emissions and the related subject of global climate change are emerging as critical issues for the transportation community. Caltrans recognizes the significance of cleaner, more energy efficient transportation. On June 1, 2005 the State established climate change emissions reduction targets for California which led to development of the Climate Action Program. This program highlights reducing congestion and improving efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems (objectives of the State's Strategic Growth Plan). The Climate Action Plan approach also includes institutionalizing energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

Region

Regional Transportation Plan (RTP)

The Metropolitan Transportation Commission is responsible for adopting the RTP for the nine-county San Francisco Bay Area. The RTP defines a vision for the region's transportation network. The Plan is updated every four years. T2035 was adopted in on April 22, 2009.

County

Countywide Plans

- The Alameda County Congestion Management Agency (ACCMA) prepared the Alameda County Transportation Plan in June 2008 (revised 2009).
- The Alameda Countywide Bicycle Plan was adopted by the ACCMA and Alameda County Transportation Improvement Authority (ACTIA) Boards on October 26, 2006.
- The Alameda Countywide Strategic Pedestrian Plan was adopted by ACTIA on September 28, 2006 and by ACCMA on October 26, 2006.
- In July 2010, ACCMA and ACTIA merged to form the Alameda County Transportation Commission.
- The Solano Transportation Authority (STA) adopted the Solano Comprehensive Transportation Plan on June 8th 2005.
- The Solano Countywide Bicycle and Pedestrian Plan was adopted by STA in 2004.

APPENDIX C

State Route 84 Freeway Agreements

A Freeway Agreement documents the understanding between Caltrans and the local agency relating to the planned traffic circulation features of the proposed facility. Agreements are often executed many years before construction is anticipated and they form the basis for future planning, not only by Caltrans but by public and private interests in the community.

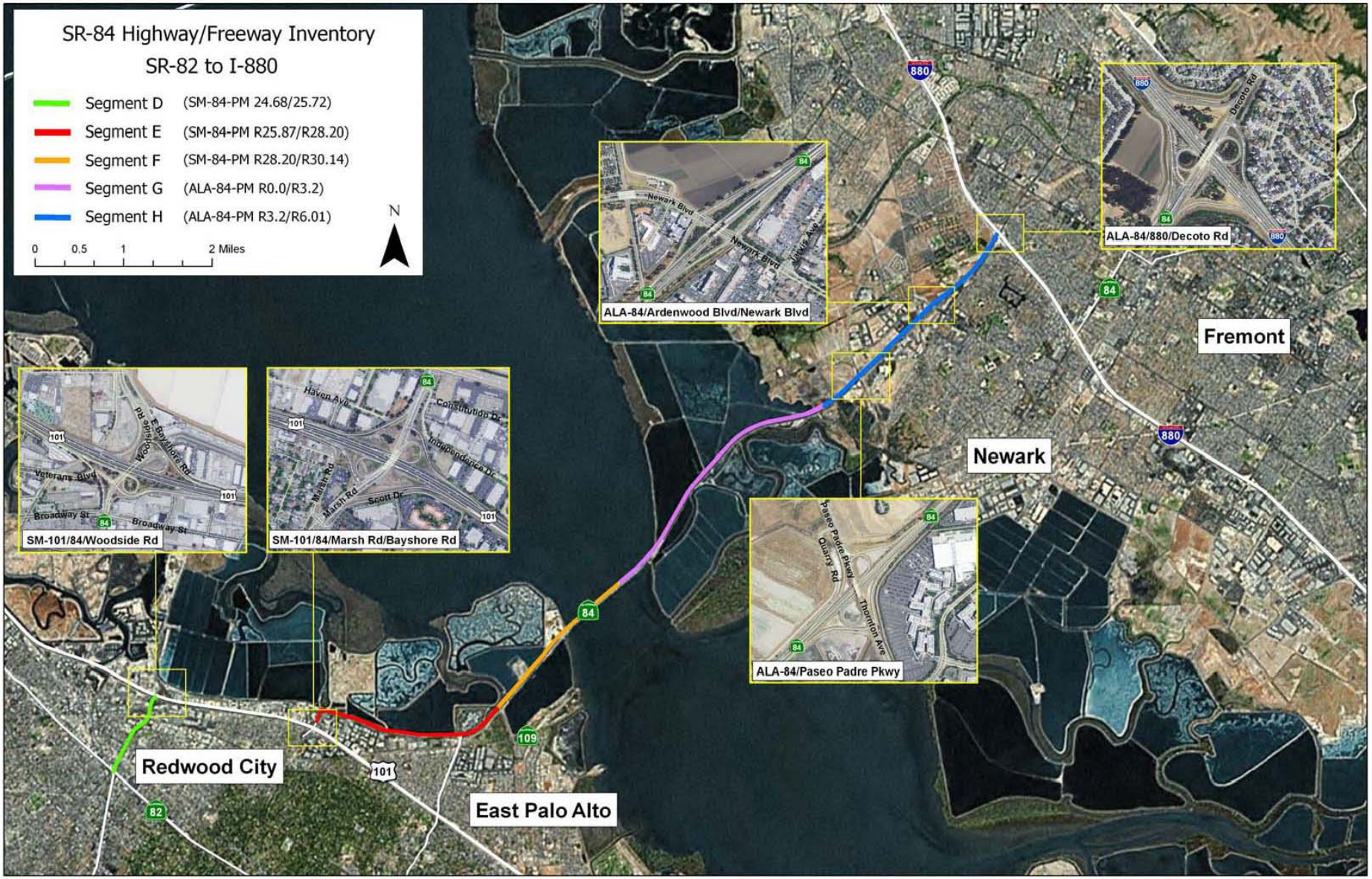
The legislative intent for requiring Freeway Agreements is to obtain local agency support of local road closures, changes to the local circulation system, and to protect property rights and assure adequate service to the community. The agreements may be modified at any time by mutual consent of the parties involved as may become necessary. Table C1 is a listing of current Freeway Agreements on the SR-84 corridor.

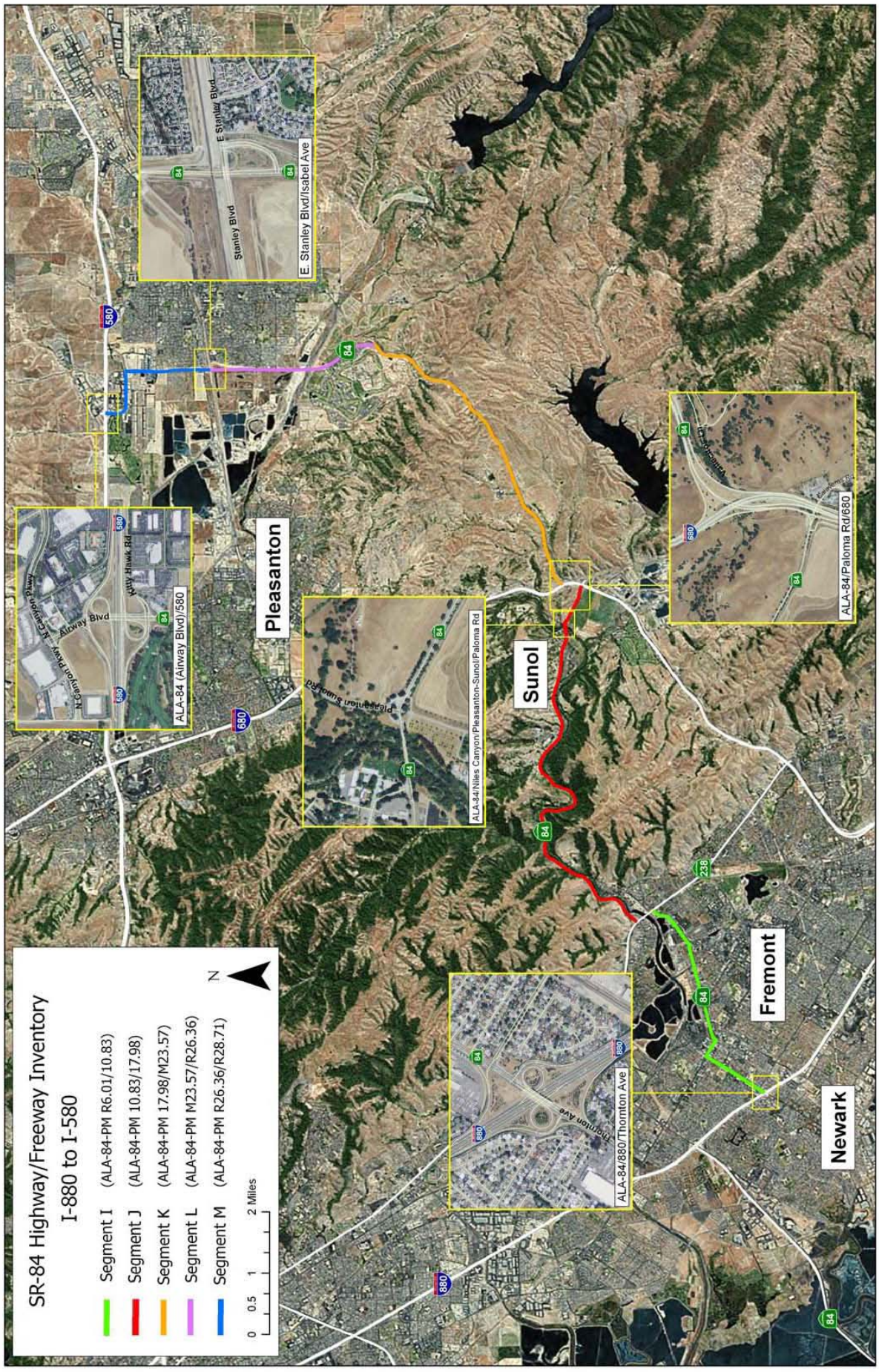
Table C1. SR-84 Corridor Freeway Agreements.

Adopted Date	County	Post Miles	Description	Agreement With
7-3-79	ALA	3.0/6.2	1.9 miles west of Newark Blvd to 0.2 miles east of I-880	City of Fremont
5-24-79	ALA	3.8/6.0	1.1 miles west of Newark Blvd to I-880	City of Newark
7-6-62	ALA	12.75/17.99	East of SR-238 to I-680 (Niles Canyon)	County of Alameda

APPENDIX D

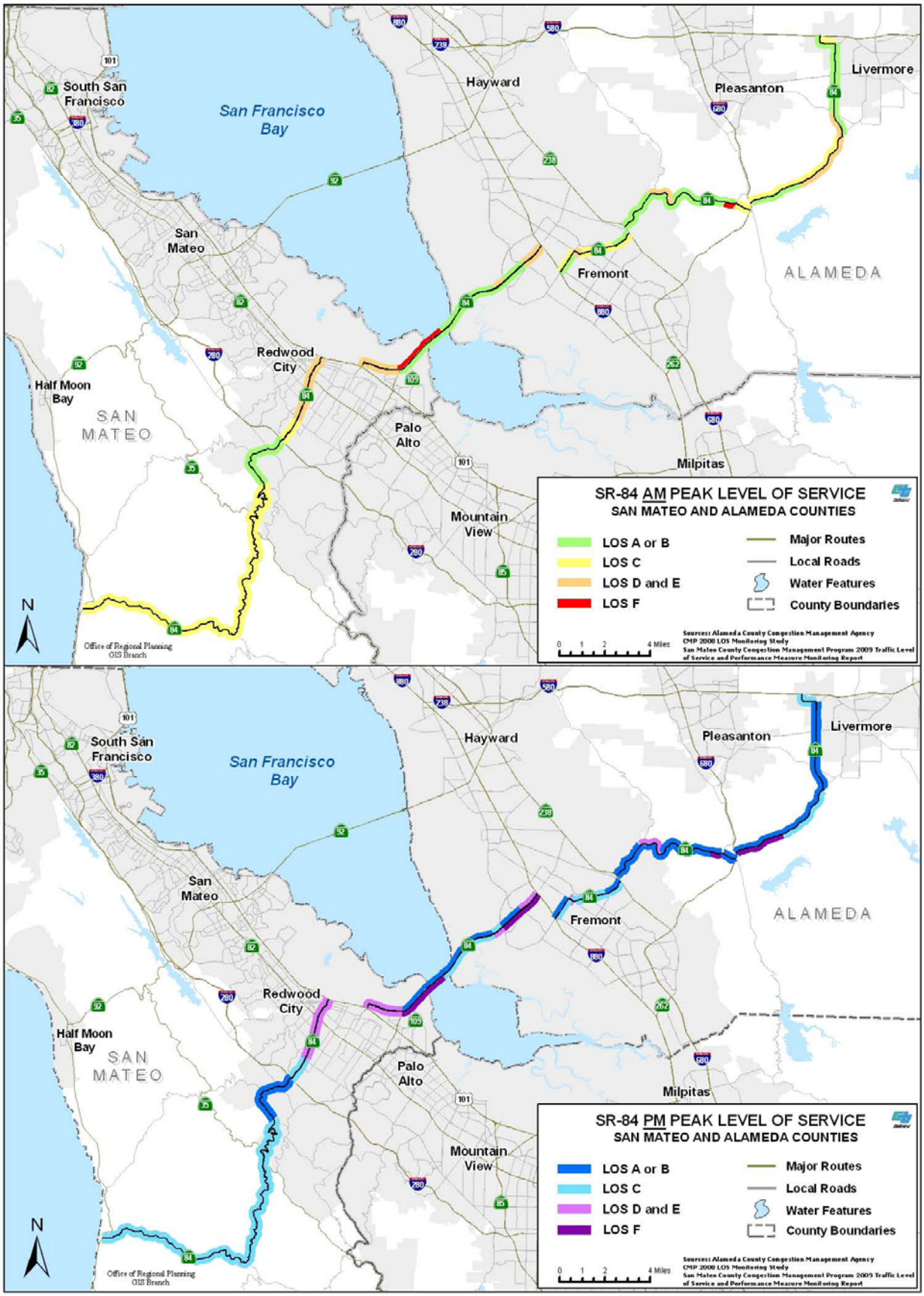
Highway/Freeway Inventory Map




SR-84 Highway/Freeway Inventory
I-880 to I-580
Segment I (ALA-84-PM R6.01/10.83)
Segment J (ALA-84-PM 10.83/17.98)
Segment K (ALA-84-PM 17.98/M23.57)
Segment L (ALA-84-PM M23.57/R26.36)
Segment M (ALA-84-PM R26.36/R28.71)
0 0.5 1 2 Miles
N
Pleasanton
Sunol
Fremont
Newark
E. Stanley Blvd/Isabel Ave
ALA-84 (Airway Blvd)/580
ALA-84/Niles Canyon/Pleasanton-Sunol/Paloma Rd
ALA-84/Paloma Rd/680
ALA-84/880/Thornton Ave
Stanley Blvd
E Stanley Blvd
Airway Blvd
Kitty Hawk Rd
N Canyon Pkwy
Pleasanton Sunol Rd
Thornton Ave
580
680
880
84
238

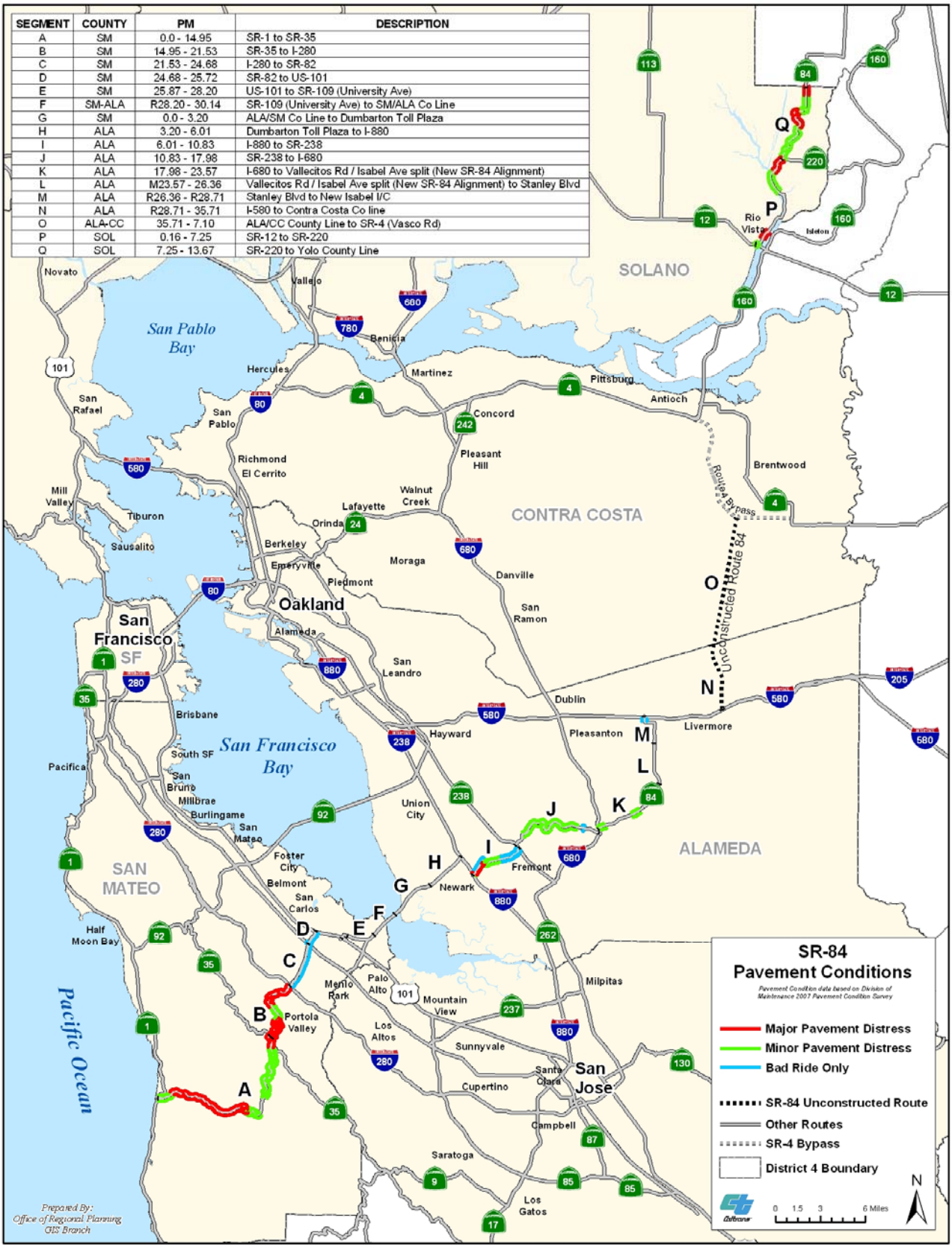
APPENDIX E

LOS Map



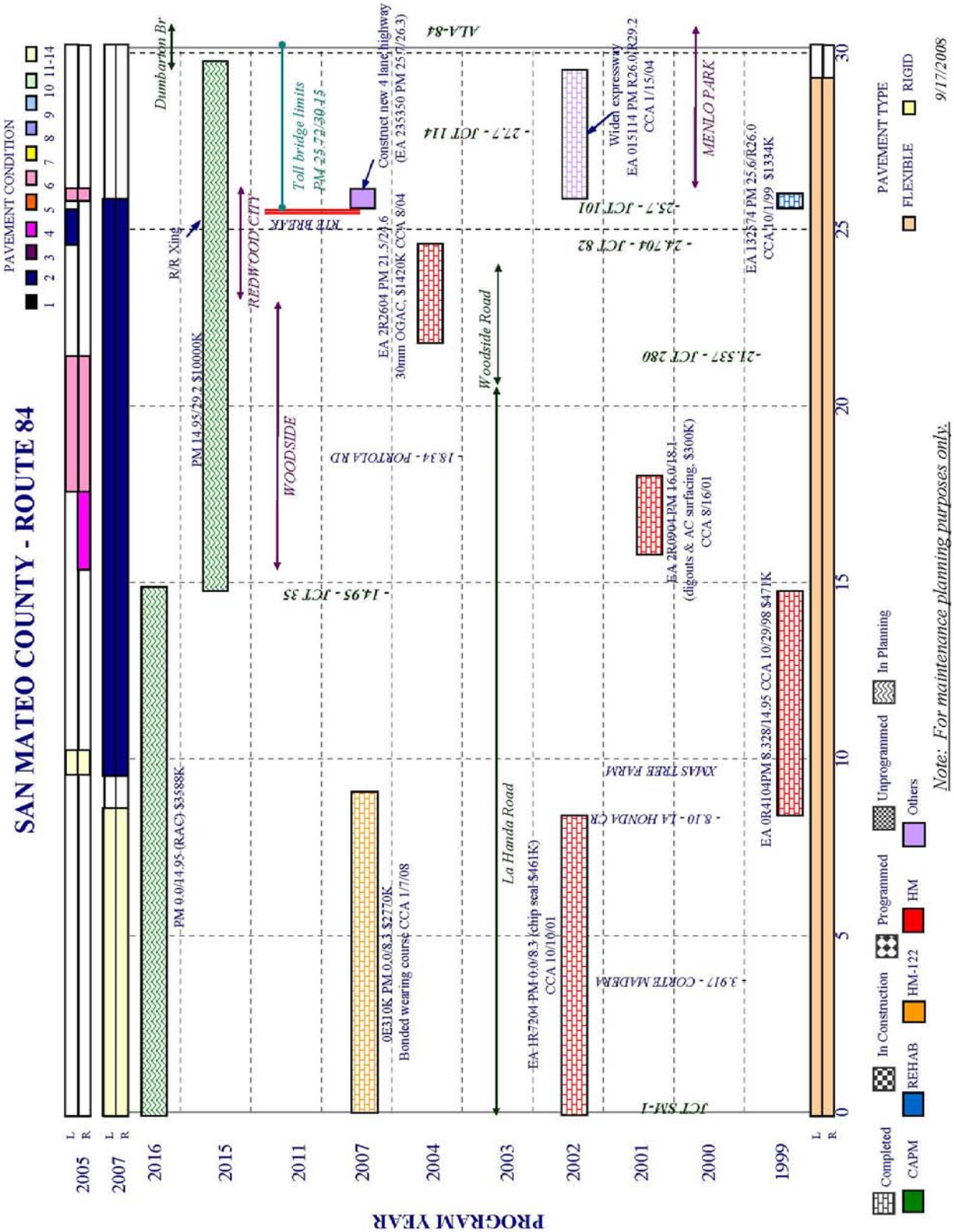
APPENDIX F

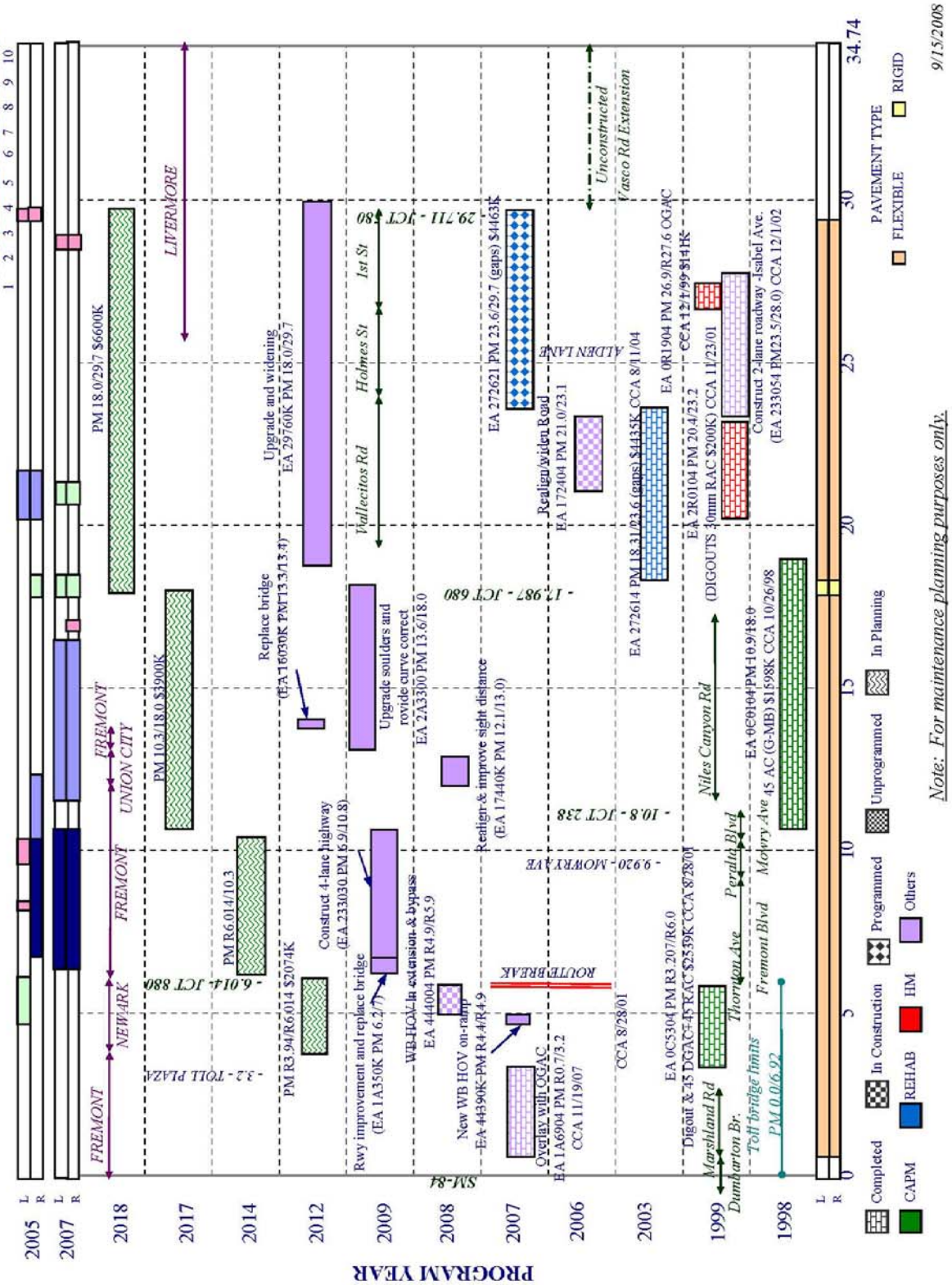
Pavement Condition Map

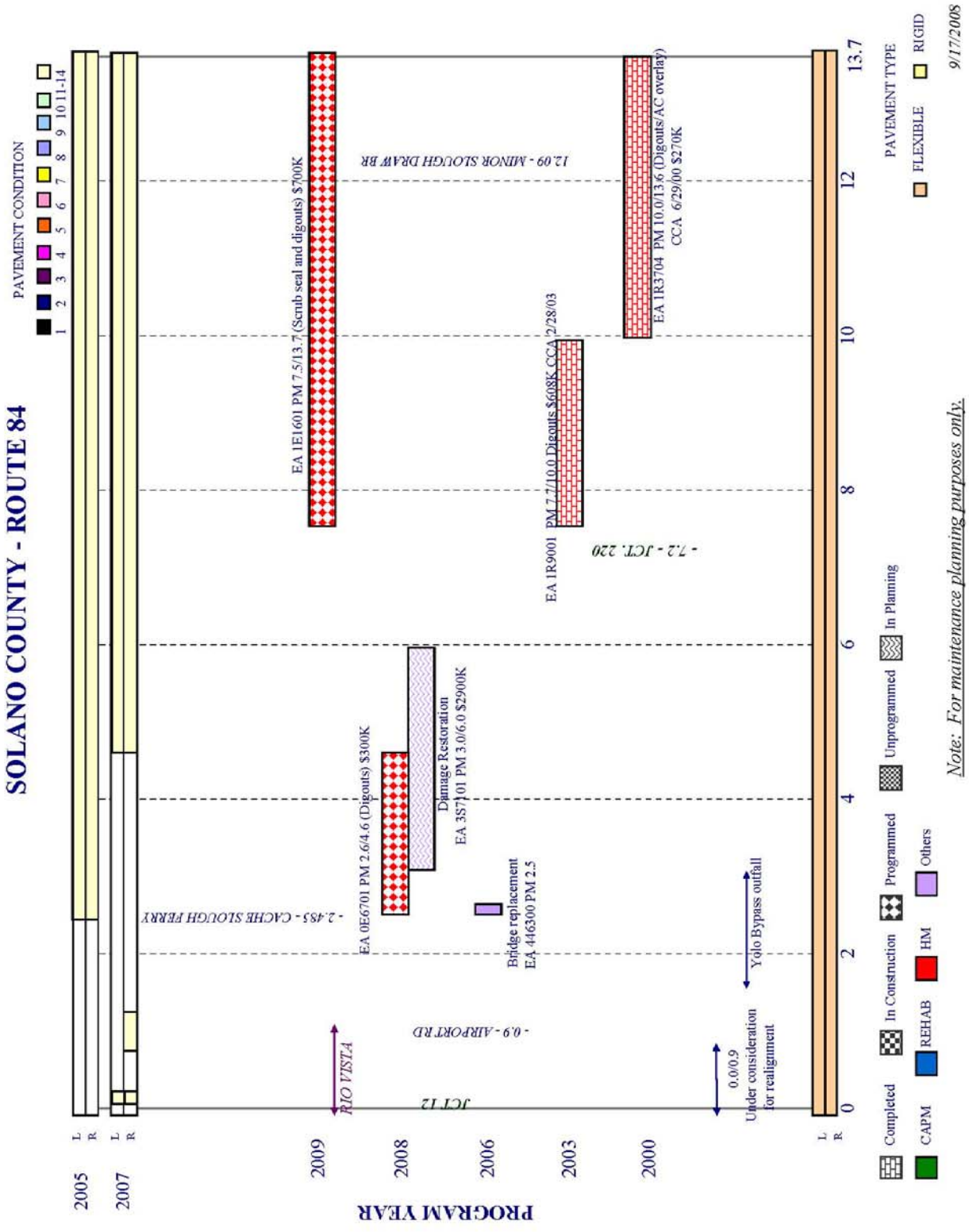


APPENDIX G

10-Year Pavement Management Plans




ALAMEDA COUNTY - ROUTE 84
PAVEMENT CONDITION
1 2 3 4 5 6 7 8 9 10
PROGRAM YEAR
2005 L R
2007 L R
2018
2017
2014
2012
2009
2008
2007
2006
2003
1999
1998
FREMONT
NEWARK
FREMONT
UNION CITY
FREMONT
LIVERMORE
PM 18.0/29.7 $6600K
PM 10.3/18.0 $3900K
- 6.0/14- JCT 880
- 3.2 - TOLL PLAZA
PM R6.014/10.3
PM R3.94/R6.014 $2074K
Replace bridge
(EA 16030K PM 13.3/13.4)
Upgrade and widening
EA 29760K PM 18.0/29.7
Vallecitos Rd
Holmes St
1st St
- 29.7/11 - JCT 580
Construct 4-lane highway
(EA 233030 PM 6.9/10.8)
Rwy improvement and replace bridge
(EA 1A350K PM 6.2/7)
Upgrade soulders and
rovide curve correct
EA 2A3300 PM 13.6/18.0
WB HOV ln extension & bypass
EA 444004 PM R4.9/R5.9
New WB HOV on-ramp
EA 44390K-PM R4.4/R4.9
Realign & improve sight distance
(EA 17440K PM 12.1/13.0)
- 17.987 - JCT 680
SM-84
ROUTE BREAK
Overlay with OGAC
EA 1A6904 PM R0.7/3.2
CCA 11/19/07
- 9.920 - MOWRY AVE
CCA 8/28/01
- 10.8 - JCT 238
EA 0C5304 PM R3.207/R6.0
Digout & 45 DGAC+45 RAC $2539K CCA 8/28/01
Marshland Rd
Dumbarton Br.
Toll bridge hours
PM 0.0/6.92
Thornton Ave
Peralta Blvd
Fremont Blvd
Niles Canyon Rd
Mowry Ave
EA 272621 PM 23.6/29.7 (gaps) $4463K
ALDEN LANE
Realign/widen Road
EA 172404 PM 21.0/23.1
Unconstructed
Vasco Rd Extension
EA 272614 PM 18.31/23.6 (gaps) $4435K CCA 8/11/04
EA 0R1904 PM 26.9/R27.6 OGAC
EA 2R0104 PM 20.4/23.2
(DIGOUTS 30mm RAC $200K) CCA 11/23/01
EA 0E0104/PM 10.9/18.0
45 AC (G-MB) $1598K CCA 10/26/98
Construct 2-lane roadway -Isabel Ave.
(EA 233054 PM23.5/28.0) CCA 12/1/02
0 5 10 15 20 25 30 34.74
PAVEMENT TYPE
FLEXIBLE
RIGID
Completed
In Construction
Programmed
Unprogrammed
In Planning
CAPM
REHAB
HM
Others
Note: For maintenance planning purposes only.
9/15/2008


SOLANO COUNTY - ROUTE 84
PAVEMENT CONDITION
1 2 3 4 5 6 7 8 9 10 11-14
PAVEMENT TYPE
FLEXIBLE
RIGID
9/17/2008
Note: For maintenance planning purposes only.
PROGRAM YEAR
2005
2007
2009
2008
2006
2003
2000
L
R
0
2
4
6
8
10
12
13.7
- 2.485 - CACHE SLOUGH FERRY
- 0.9 - AIRPORT RD
- 7.2 - JCT. 220
JCT 12
RIO VISTA
EA 0E6701 PM 2.6/4.6 (Digouts) $300K
Damage Restoration
EA 357101 PM 3.0/6.0 $2900K
Bridge replacement
EA 446300 PM 2.5
EA 1E1601 PM 7.5/13.7 (Scrub seal and digouts) $700K
12.09 - MINOR SLOUGH DRAW BR
EA 1R9001 PM 7.7/10.0 Digouts $608K CCA 2/28/03
EA 1R3704 PM 10.0/13.6 (Digouts/AC overlay)
CCA 6/29/00 $270K
0.0/0.9
Under consideration
for realignment
Yolo Bypass outfall
Completed
In Construction
Programmed
Unprogrammed
In Planning
CAPM
REHAB
HM
Others

APPENDIX H

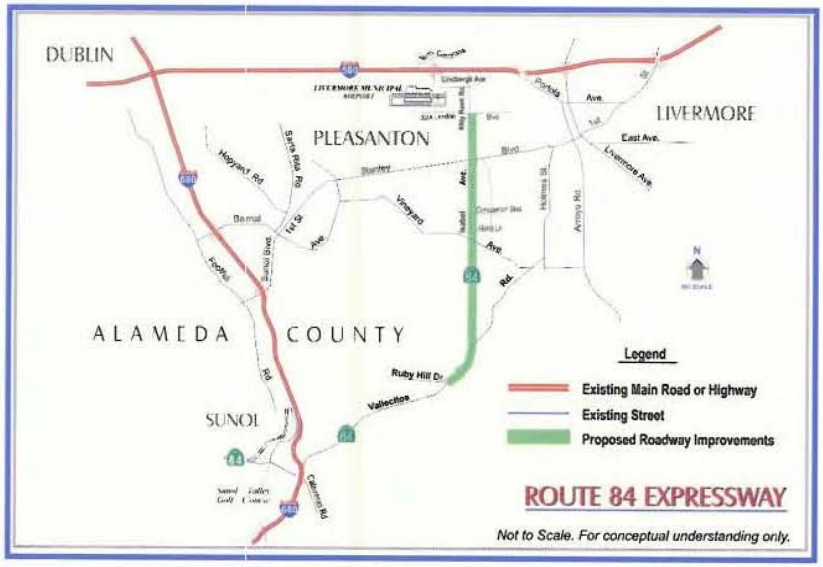
CMIA Project Fact Sheet

Alameda County Transportation Improvement Authority
Route 84 Expressway Project in Livermore, California

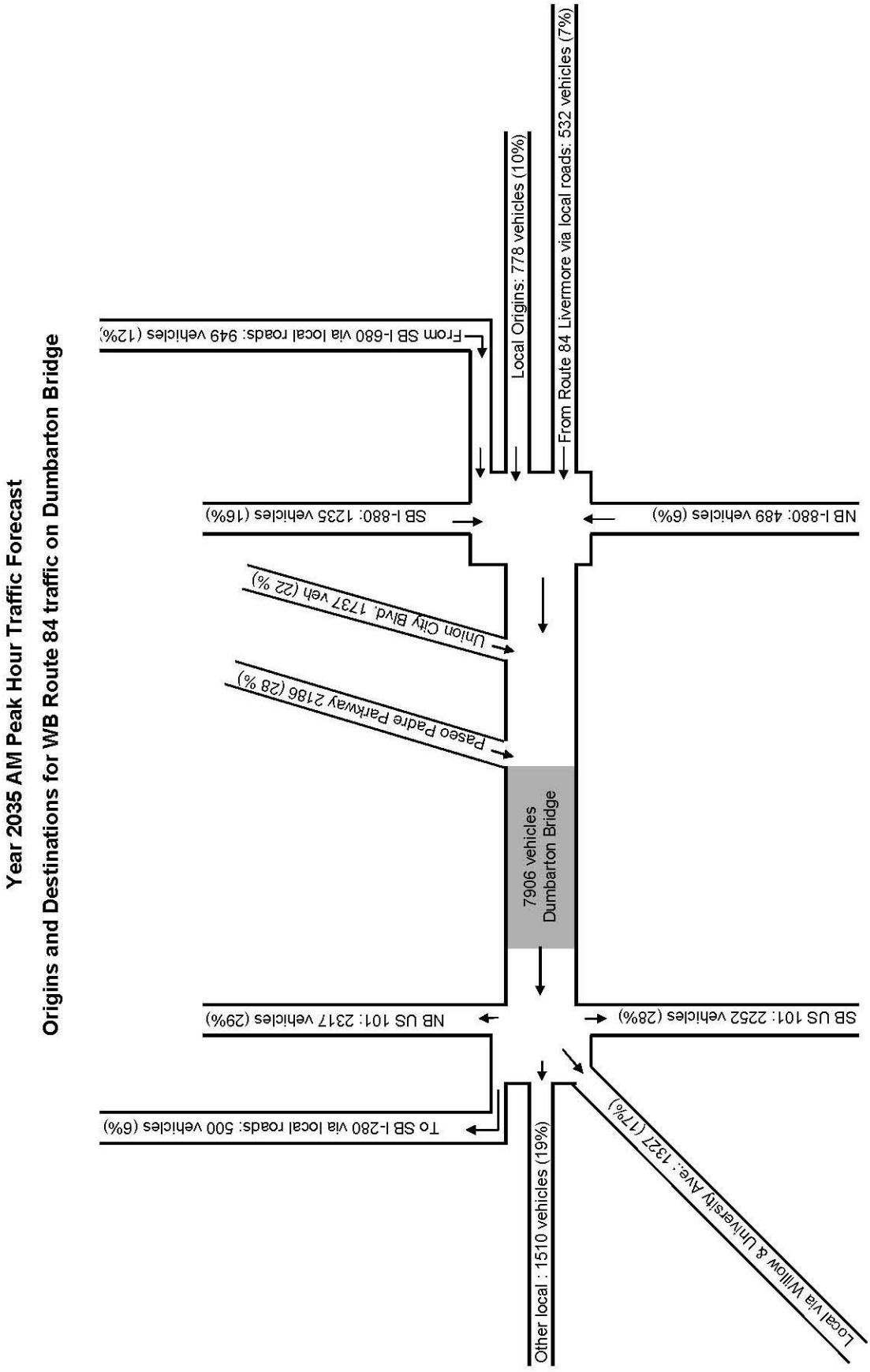
Project Description

The Route 84 Expressway project in Livermore includes widening and upgrading the existing State Route 84 (Isabel Avenue) in Livermore to expressway (55 mph) standards. The widening would generally conform to the existing roadway alignment and be from two lanes to four lanes between Ruby Hill Boulevard and Stanley Boulevard and from two lanes to six lanes between Stanley Boulevard and Jack London Boulevard. As an expressway facility, Route 84 access would be limited to controlled intersections to improve traffic flow and safety. Signalized intersections at Ruby Hill Drive, Vallecitos Road, Vineyard Avenue, Concannon Boulevard, Discovery Drive and Jack London Boulevard would be widened and upgraded to accommodate future traffic demand. A multi-use trail located on the east side of Isabel Avenue, between Jack London Boulevard and Concannon Boulevard would be extended to Vineyard Avenue.

The project will conform at the northern project limits to the Isabel Avenue/I-580 Interchange project, and to the recently completed widening project to provide truck climbing lanes over Pigeon Pass. The Route 84 Expressway project is under design, with the 95% plans due in late 2010.

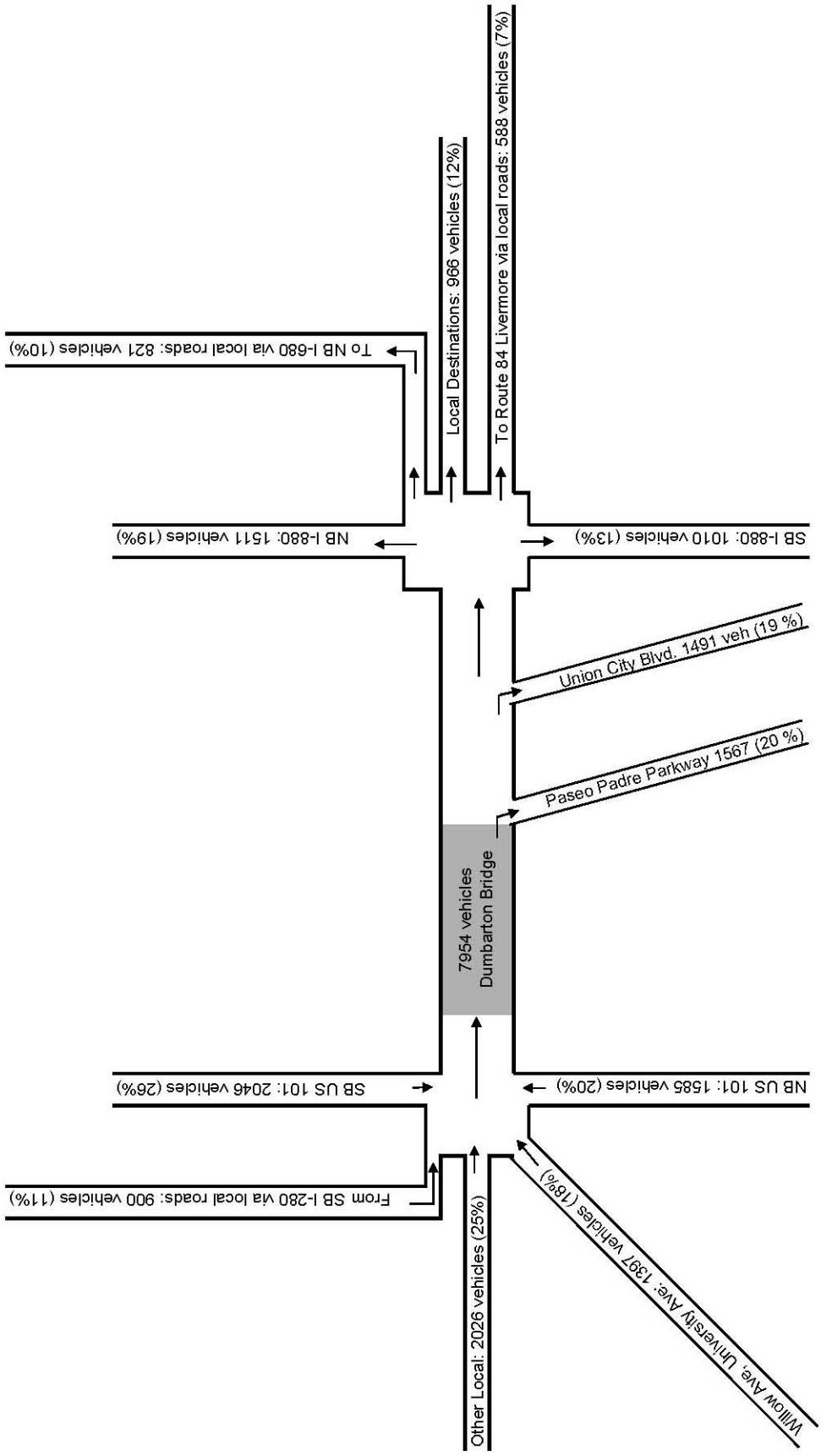


APPENDIX I
Origin/Destination Diagrams

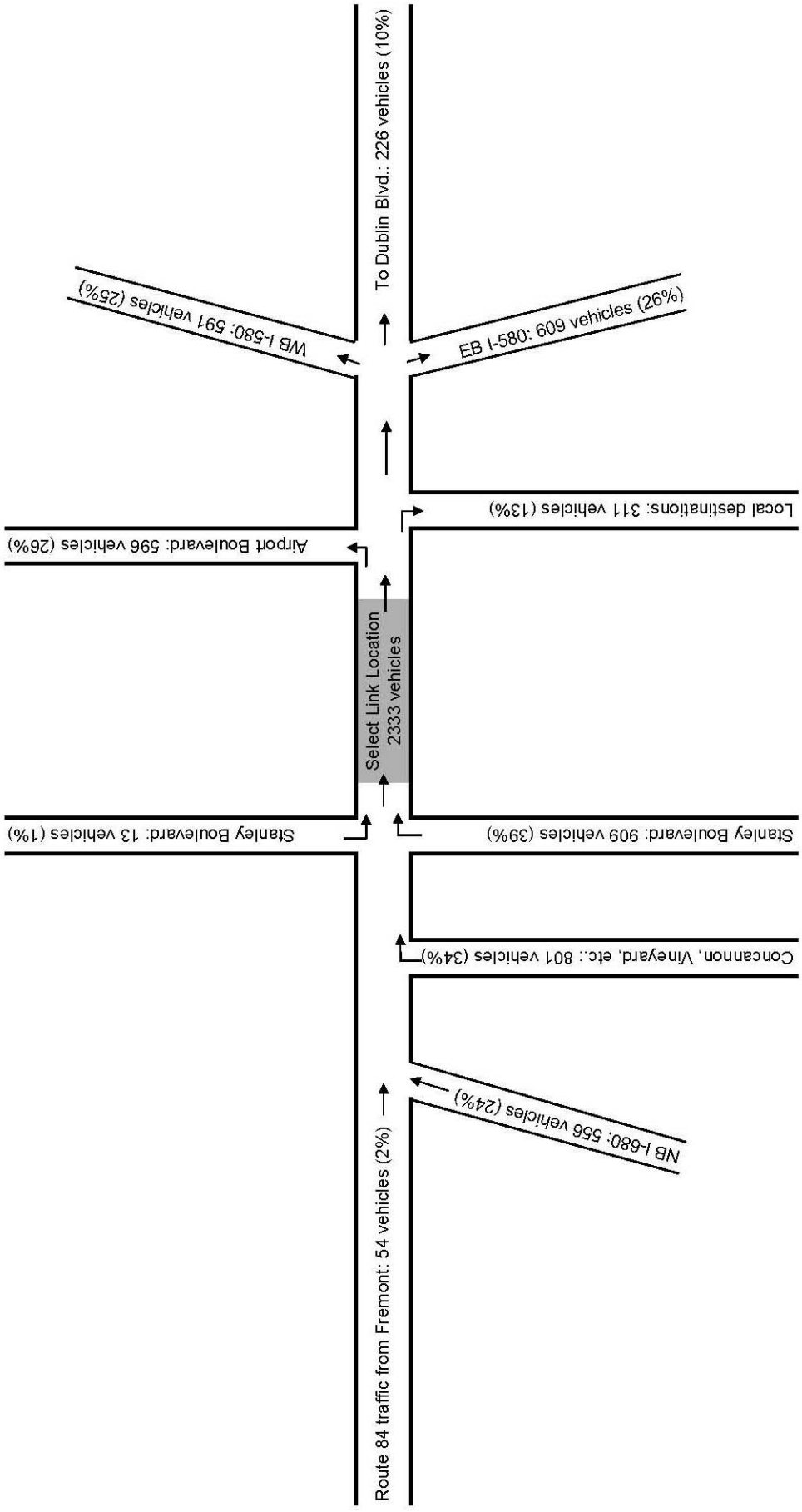
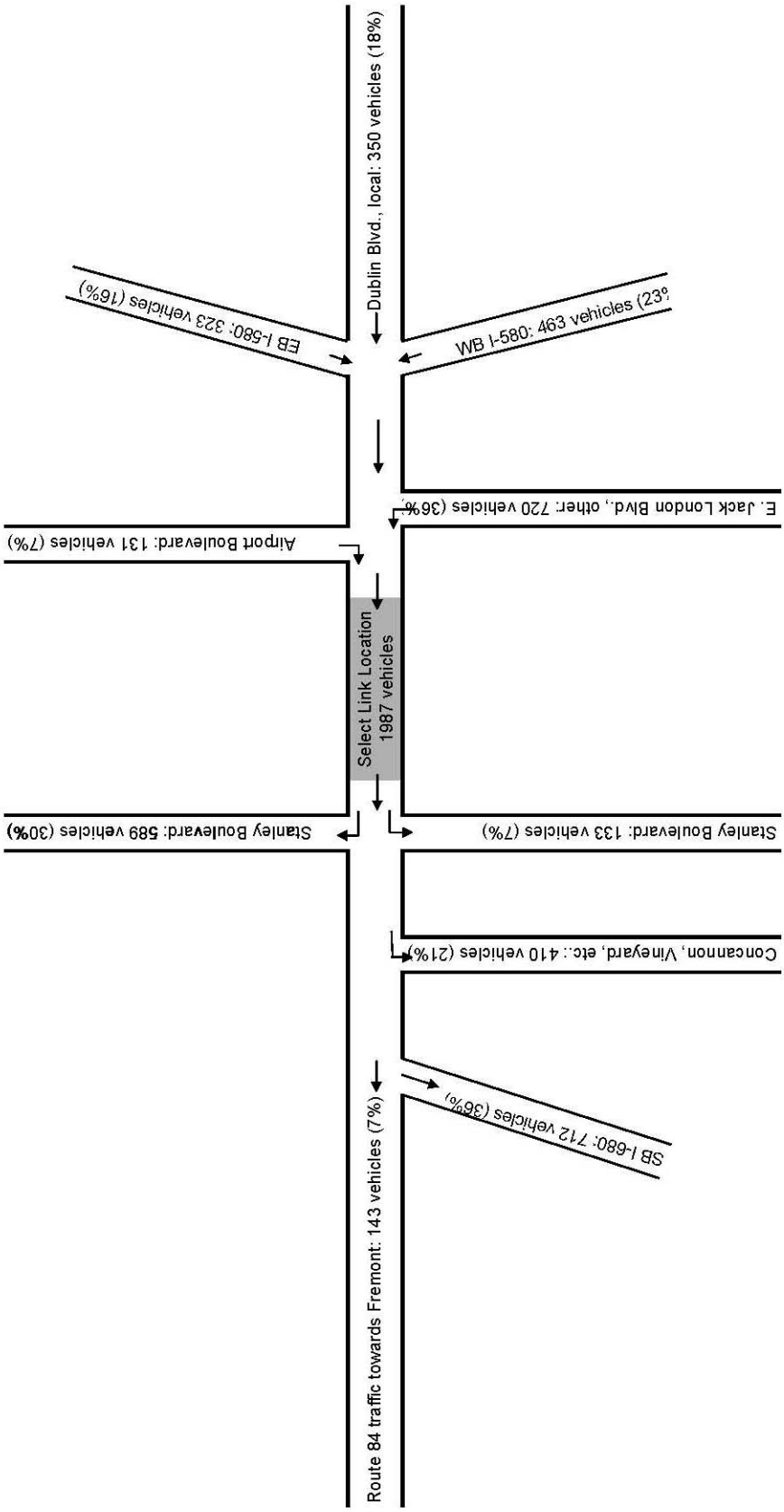


Year 2035 PM Peak Hour Traffic Forecast

Origins and Destinations for EB Route 84 traffic on Dumbarton Bridge



Year 2035 AM Peak Hour Traffic Forecast
Origins and Destinations for NB Route 84 traffic (North of Stanley Blvd.)



Year 2035 PM Peak Hour Traffic Forecast
Origins and Destinations for SB Route 84 traffic (North of Stanley Blvd.)