

CHAPTER 18 – TRANSPORTATION/TRAFFIC

INTRODUCTION

This chapter describes the environmental setting (existing conditions and regulatory setting) for the transportation and traffic environment in the Sacramento region. This chapter also presents the federal, state, and local policies and regulations that determine mitigation requirements and identifies impacts related to transportation that may result from implementation of the proposed MTP 2035 projects, and mitigation measures to reduce these impacts where necessary.

The study area consists of transportation routes, including highways, rail alignments, bicycle trails, state routes, roads, and Caltrans right-of-way in the MTP Plan Area. The major components of the existing metropolitan transportation system within the SACOG region include three interstate highways, several state highways and local arterial roadways, a deep water shipping port, a major international airport, numerous general aviation airports, freight and passenger rail service, and a public transit system that includes 40 miles of light rail transit service, and several thousand miles of regional and local bus routes throughout the MTP Plan Area.

SETTING

Environmental Setting

The components of the transportation system in the MTP Plan Area are described below.

Roadway System

The roadway network within the MTP Plan Area is categorized into several street classifications, which are as follows:

- *Freeways/Highways*—A freeway may be defined as a divided highway with full control of access and two or more lanes for the exclusive use of high volumes of traffic in each direction. These facilities do not provide direct access to land and, in general, access is restricted and provided only at interchanges with arterials. These types of facilities serve primarily regional, through trips and connect to other regional and interregional facilities.
- *Expressways*—An expressway also serves through trips, but provides limited access to land uses via local streets. Expressways serve both regional and local trips.
- *Arterial Roadways*—Arterials are designed to carry high volumes of local traffic. Local streets feed into arterials, which in turn feed into regional facilities, such as expressways and freeways/highways. Land uses can be directly served by arterials.
- *Collector Streets*—Collector streets, as the name implies, collect and distribute traffic from residential or local roadways to facilities that are designed to carry higher volumes of traffic, such as arterials. Collectors carry light to moderate traffic and serve adjacent land uses. *Residential or Local Streets*—These facilities are located in neighborhoods and primarily serve residential land uses. Traffic volumes are typically very light on these facilities. These streets feed into collector streets, described above.

Freeways/Highways

Several freeways and state highways serve the MTP Plan Area and are depicted in Figure 18-1. Interstate 5, Interstate 80, SR99, SR70, and US50 all converge in Sacramento. Below is a description of the major highways and freeways within the plan area.

- **Interstate 5 (I-5)** is a 4 to 8-lane freeway that runs from north to south through the western portion of the MTP Plan Area and is the largest of the major regional facilities in the area. I-5 is a major federal interstate freeway and travels from the Canadian border to Mexico.
- **Interstate 80 (I-80)** is a 6 to 8-lane freeway that runs from west to east through the plan area from the San Francisco Bay Area extending 132 miles, from the Yolo/Solano county line to the California/Nevada state line, passing through Yolo, Sacramento, and Placer counties within the MTP Plan Area. I-80 is also part of the federal interstate system, connecting the East Coast of the United States with the Pacific Rim.
- **United States Highway 50 (US 50)** is a 4 to 10-lane east-west route that is part of the California State Highway system, which predates the federal interstate system. US 50 traverses the MTP Plan Area from the eastern portion of Yolo County through Sacramento and El Dorado counties.
- **State Route 49 (SR49)** is also part of the state highway system. It is a 2 to 4-lane, north-south highway that traverses the central portion of the plan area through El Dorado, Placer and Yuba counties.
- **State Route 65 (SR 65)** is a 2 to 4-lane, north-south highway that traverses the east side of the plan area through Sacramento, Placer and Sutter counties. The route serves as a connector for both automobile and truck traffic originating in the I-80 corridor (in the Roseville/Rocklin area) and the SR70/99 corridor (in the Marysville/Yuba City area).
- **State Route 70 (SR 70)** is a 2 to 4-lane, north-south highway that travels the western side of the plan area through Sutter and Yuba counties. SR 70 currently travels through downtown Marysville as a local street.
- **State Route 99 (SR 99)** is the second largest regional facility in the area. SR 99 is a 2 to 8-lane north-south highway and freeway that traverses the central portion of the plan area through Sacramento and Sutter counties. SR 99 serves ten of the State's urbanized areas, making it a high-priority corridor in the Central Valley. The route also serves as a main access between several small cities and urban areas in Sacramento County.

The regional roadway network is the largest mover of people and goods in the Sacramento area. I-5 travels north and south through the region while Interstate 80 runs east and west. The two intersect near downtown Sacramento and provide commute access as well as inter-regional travel for both people and goods throughout the plan area. I-5 through downtown Sacramento has the highest truck percentage (9.6 percent), while US50 has the lowest percentage of trucks (3.4 percent) (Caltrans, 2004; City of Sacramento). US50 and SR99 run roughly parallel to the interstates and are commute and inter-regional facilities. These four highways, combined with a number of other highways and surface streets, provide access for communities throughout the SACOG region. Caltrans has the responsibility for maintaining and operating these highways.

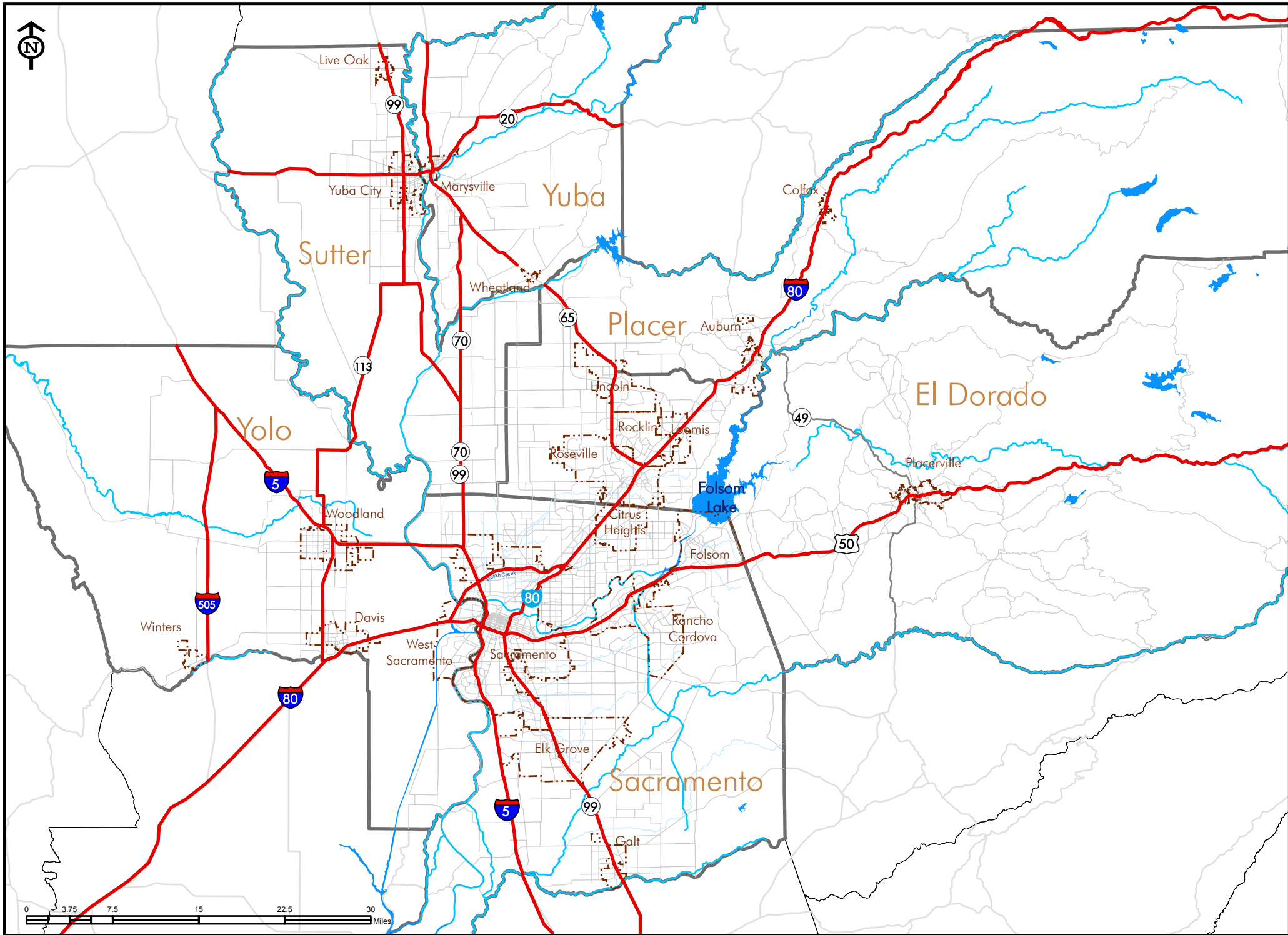


Figure 18-1: 6-County Area Freeways and Highways

Local Road Facilities

The local roadway system consists of roads under the jurisdiction of individual city or county public works departments. Local roads provide access between neighboring locations and offer routes from the urbanized areas of communities onto the state highway system. Local roadways within the MTP Plan Area consist of arterials, collector streets, and residential or local streets. Some of these roads are considered “regionally significant” and several MTP projects are proposed for these roads.

Local roads and streets in the MTP Plan Area are the responsibility of the 22 member cities and six counties to maintain. Local roads and streets provide direct access to homes, businesses, and industrial operations and include most principal urban and rural arterials, minor arterials, and collector streets.

Transit System

Transit service in the region is currently provided by 13 public transit operators and two private non-profit Consolidated Transportation Services agencies of varied size and type of service, as shown in Figure 18-2. These operators range from very large systems, such as the Sacramento Regional Transit District (RT) that operates 250 buses, 40 rail cars and 40 miles of track, to the very small systems-- the City of Auburn provides service with a fleet of only three vehicles.

A variety of modes of transit service is available within the MTP Plan Area, and more are included in the MTP for 2035. A mode is a system for carrying transit passengers described by specific right-of-way, technology and operational features. Those applicable to the MTP Plan Area are described below:

- *Commuter Rail* (also called *metropolitan rail*, *regional rail*, or *suburban rail*) is an electric or diesel propelled railway for urban passenger train service consisting of local short distance travel operating between a central city and adjacent suburbs. Service must be operated on a regular basis by or under contract with a transit operator for the purpose of transporting passengers within urbanized areas, or between urbanized areas and outlying areas. Such rail service, using either locomotive hauled or self propelled railroad passenger cars, is generally characterized by multi-trip tickets, specific station to station fares, railroad employment practices and usually only one or two stations in the central business district. *Intercity rail* service is excluded, except for that portion of such service that is operated by or under contract with a public transit agency for predominantly commuter services, which means that for any given trip segment (i.e., distance between any two stations), more than 50% of the average daily ridership travels on the train at least three times a week. Within the MTP Plan Area, the Capitol Corridor service operated by Amtrak is an intercity passenger train system serving Placer, Sacramento, and Yolo counties. It operates 32 round trip trains between Sacramento and Oakland, and is the third busiest Amtrak-operated route in the nation.
- *Light Rail* (*streetcar*, *tramway*, or *trolley*) is lightweight passenger rail cars operating singly or in short, usually two-car, trains on fixed rails in right-of-way that is not separated from other traffic for portions of its routes. Light rail vehicles (LRVs) are typically driven electrically with power being drawn from an overhead electric line via a trolley or a pantograph. Streetcar vehicles are typically shorter and narrower than LRVs. Streetcars may be older cars that are refurbished (vintage trolley cars) or newer cars are built to look like older cars (heritage trolley cars), or they may be modern LRV-type vehicles of smaller dimensions. RT operates the only light rail service within the MTP Plan Area.

- *Bus Rapid Transit (BRT)* is a type of limited-stop service developed in the 1990s that relies on technology to help speed up the service. Limited-stop service is a hybrid between local and express service, where the stops may be several blocks to a mile or more apart to speed up the trip. BRT can operate on exclusive transitways, high-occupancy-vehicle lanes, expressways, or ordinary streets. A BRT line combines intelligent transportation systems technology, priority for transit, rapid and convenient fare collection, and integration with land use policy in order to substantially upgrade bus system performance. BRT service is not currently operated within the MTP Plan Area.
- *Express Bus service* speeds up longer trips, especially in major metropolitan areas during heavily-patronized peak commuting hours, by operating long distances without stopping. Examples include park-and-ride routes between suburban parking lots and the central business district that operate on freeways, and express buses on major streets that operate local service on the outlying portions of a route until a certain point and then operate non-stop to the central business district. Several transit operators within the MTP Plan Area operate express service for commuters, as noted below.
- *Local Bus (Fixed Route) service* is provided on a repetitive, fixed-schedule basis along a specific route, where vehicles may stop every block or two along a route several miles long. This is by far, the most common type of bus service, and involves frequent stops and consequent low speeds, the purpose of which is to deliver and pick up transit passengers at specific locations as close to their destinations or origins as possible.

Within the MTP for 2035 Area, fixed-route service providers include RT, serving urban Sacramento County; (e-Tran), serving the City of Elk Grove; YoloBus, serving Davis, Woodland, West Sacramento, Downtown Sacramento, the Sacramento International Airport, and rural Yolo County; Yuba-Sutter Transit, providing intra-city service in the Marysville/Yuba City area, intercity service to Live Oak, Wheatland and the Yuba foothills, and commuter service to Sacramento; the City of Auburn, providing intra-city service; Folsom Stage Lines, providing intra-city service and commuter service to Sacramento; Unitrans, providing intra-city service in Davis; Roseville Transit, operated by the City of Roseville, providing intra-city and commuter services to Sacramento; the City of Lincoln providing intra-city service; El Dorado County Transit providing intra-city, intra-county and commuter service to Sacramento; and Placer County Transit with service connecting I-80 communities and service to the Regional Transit light rail stop at Watt Avenue and Interstate 80 (I-80).

Transit service in the non-urbanized portion of Sacramento County includes South County Transit Link fixed route services linking the Cities of Galt, Isleton and Lodi and other delta communities and a State Highway 99 service that links Lodi, Galt, Elk Grove and Sacramento. There is also a fixed route service, the Amador Sacramento Express/X Route, linking Jackson in Amador County with Rancho Murieta the 65th Street Light Rail station and downtown Sacramento the is operated by Sacramento County in cooperation with and through a contract with the Amador Regional Transit System.

- *Community Shuttles:* When limited to a small geographic area or to short-distance trips, local service is often called *circulator, feeder, neighborhood, trolley, or shuttle service*. Such routes, which may have a lower fare than local fixed route service, may operate in a loop and connect, often at a transfer center or rail station, to major routes for travel to more outlying destinations. They may also provide transit service in areas not yet served with local fixed route service. Although some privately operated shuttles may be available throughout the MTP Plan area, known publicly operated shuttles are operated

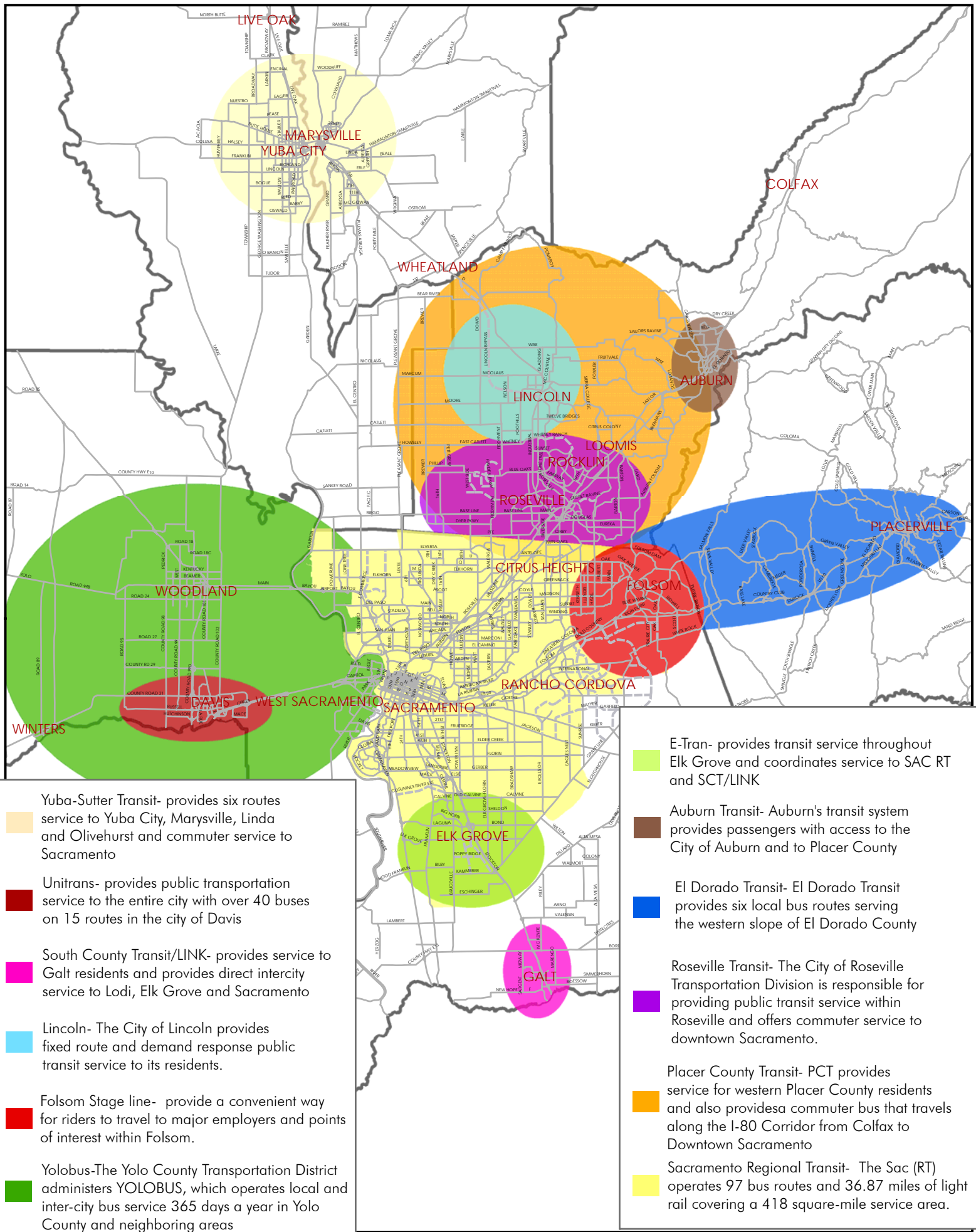


Figure 18-2: 6-County Transit Providers in the Sacramento Area

by the Sacramento Regional Transit District, California State University, Sacramento (CSUS) and the North Natomas Transportation Management Association.

- *Paratransit* provides transportation service required by the Americans with Disabilities Act (ADA) for individuals with disabilities who are unable to use fixed-route transit systems. The service must be comparable to the fixed-route service. Paratransit service providers within the MTP Plan Area include South County Transit, providing service in the Galt area; Davis Special Transit, serving the City of Davis; and the Yolo County Transportation District ADA, YoloBus Special program serving Woodland, West Sacramento and intercity service needs throughout Yolo County and into Sacramento County. Yuba Sutter Transit serving the Marysville/Yuba City urban area, Roseville Transit Dial-A-Ride offers paratransit service to individuals who are ADA-eligible as outlined in the City of Roseville, Placer County Transit serving the Rocklin/Loomis area, Granite Bay and along the State Route 49 corridor; El Dorado County Transit operates demand responsive services in El Dorado counties. Paratransit Inc. also provides door-to-door share-ride, subscription and intermittent transportation service within the Sacramento Metropolitan area.

Passenger Rail Services

The Sacramento region also has access to passenger rail service through Amtrak. Three basic long haul system trains – the Coast Starlight (Los Angeles to Seattle), the California Zephyr (Oakland to Chicago) – pass through the SACOG region with stops in Sacramento, Davis, and Roseville. The region is also served by State supported passenger service. The San Joaquin Train, which runs from Bakersfield to Oakland, is also available to the SACOG area through connecting bus and limited direct rail service to Stockton.

Goods and Freight Movement

The regional goods movement system within the MTP Plan Area, is a complex network of highways, rail lines, streets, waterways, and airports. Freight movements are predominantly truck trips but also include air cargo (with pickup and delivery by truck), waterborne shipments (with inland transport by truck or rail), and rail carload service (direct or transloaded). The highways and rail lines converging and radiating in the SACOG region make it a crossroads for goods movements between other regions. The through movements are again, mostly truck trips, but also include substantial volumes of carload and intermodal rail traffic.

Goods are transported by rail via the Union Pacific Railroad (UPRR). The UPRR operates two main lines through the area. One runs east and west through Roseville, Sacramento, and Davis. This line ultimately connects Oakland and Salt Lake City. The north-south line passes through Sacramento, Roseville, and Marysville as it connects Los Angeles and points south with Portland to the north.

Water shipping facilities within the plan area are the Port of Sacramento and the Sacramento Deep Water Shipping Channel. The Sacramento Deep Water Shipping Channel is a 43-mile-long facility ending at the Port of Sacramento in West Sacramento. The channel can currently accommodate ships with a 35-foot draft. The Port's primary operation is loading ships for export of local goods. This includes rice, wheat, wood chips, and feed for livestock. Key area imports through the port are fertilizer and newsprint.

The Sacramento region contains one major commercial airport, one air force base, and 15 public-use general aviation facilities. The six-county SACOG region is the primary market for air cargo operations at Mather Airport and Sacramento International Airport, with most of the market to the south and west rather than to the north. Depending on the policies of individual carriers, these two Sacramento area

airports can also be used as hubs for feeder service to smaller Northern California markets beyond the MTP Plan Area.

Existing Conditions

Regional conditions for three key indicators are presented: 1) vehicle miles traveled (VMT); 2) roadway congestion; and 3) shares of transit and non-motorized trips. These indicators have been important performance measures in the development of the MTP, and all relate directly to the performance of the region's transportation system.

VMT is directly related to vehicle emissions, traffic congestion, noise, and other issues of concern. Because VMT can be influenced by improving land use mix (e.g. reducing imbalances of jobs and housing), or by improving transit and non-motorized travel options and shifting trips from vehicles to transit or walking, VMT is an excellent measure of the combined performance of the region's land use patterns and transportation system.

Roadway congestion has grown far faster than either VMT or population in the region in recent years. Because higher congestion levels mean more travel time delays, it is another performance measure of interest to policy makers and transportation professionals.

Higher shares of trips using transit or non-motorized (bike and walk) modes are another indication of a well-functioning regional land use pattern and transportation system. Shifting trips to transit or non-motorized modes from lower-occupancy vehicle modes like driving alone reduced vehicle emissions and traffic congestion.

As displayed in Table 18-1, the 1995-2005 growth rate for VMT (2.5 percent) has exceeded the region's residential growth rate for the same period (2.0 percent). Total growth in VMT in the period from 1995-2005 was 28 percent, compared to 21 percent for dwelling units. Although many factors contribute to this trend, land use patterns requiring more driving, and lack of attractive, convenient alternatives to driving are considered to be among the most critical factors.

As shown on Table 18-2, growth rates in roadway congestion by various measures ranges from 5 to 7 percent per year over the years since 1990. This far outstrips either the VMT growth rate (about 2.5 percent per year) or the residential growth rate over the same period (about 2.0 percent per year). This trend indicates that provision of roadway capacity, or alternatives to driving during peak periods, have not kept up with transportation demand.

Table 18 -3 indicates that while the number of transit commuters has increased at an average rate of 3.2 percent per year between 1990 and 2000, the number of bike and walk commuters actually decreased at a rate of -1.0 percent per year over the same period. The share of commuters using transit over the same period increased from 2.2 to 2.6 percent, while the share of commuters using bike or walk modes decreased from 4.4 to 3.4 percent.

The table also shows that the number of non-work transit trips increased at an average rate of about 2.5 percent per year, and the bike and walk trips increased at about 1.6 percent per year. The share of non-work transit trips increased marginally, from 0.7 to 0.8 percent, while the share of non-work bike and walk trips remained flat at about 8.6 percent. For all trip purposes, transit mode share increased slightly from 1.1 to 1.2 percent between 1990 and 2000, while bike and walk mode share decreased from 7.6 to 7.4 percent.

Table 18 - 1. Daily Vehicle Miles Traveled in SACOG Region, 1990-2005

County	Daily Vehicle Miles Traveled ¹ (in 1000's)			Average Annual Growth Rates		
	1995	2000	2005	'95-'00	'00-'05	'95-'05
El Dorado ³	3,186	3,687	3,987	3.0%	1.6%	2.3%
Placer ³	6,614	7,603	9,343	2.8%	4.2%	3.5%
Sacramento	25,226	27,582	32,145	1.8%	3.1%	2.5%
Sutter	1,937	2,141	2,374	2.0%	2.1%	2.1%
Yolo	4,630	5,055	5,683	1.8%	2.4%	2.1%
Yuba	1,519	1,655	1,849	1.7%	2.2%	2.0%
Total	43,112	47,723	55,381	2.1%	3.0%	2.5%
SACOG Region Dwelling Units ^{2,3}	683,204	732,440	828,885	1.4%	2.5%	2.0%

Notes:

¹ 1995 and 2000 data from "Assembly of Statistical Reports", California Department of Transportation.

2005 data from "California Public Road Data", California Department of Transportation.

² California Department of Finance.³ Excludes Tahoe Basin. Adjustments to county totals by SACOG.*Source: SACOG, October 2007.***Table 18 - 2. Congestion in the SACOG Region, 1990-2006**

Congestion Indicator	Year							Average Annual Growth Rates
	1990	1995	1998	2000	2003	2005	2006	
Annual Freeway Veh. Hours of Delay (in 1000's) ¹	n/a	n/a	1,952	2,435	3,307	5,458	3,419	1998 to 2006 : + 7% /year
Annual Passenger Hours of Delay (in 1000's) ²	15,745	17,206	22,196	26,337	35,929	n/a	n/a	1990 to 2003 : + 7% /year
Daily Congested VMT (in 1000's) ³	n/a	n/a	n/a	2,679	n/a	3,419	n/a	2000 to 2005: +5% /year

Notes:

¹ "Highway Congestion Monitoring Program Reports", California Department of Transportation, District 3. Delay defined as the time difference between observed travel time and 35mph on freeways within District 3.² "Urban Mobility Report", Sacramento County, Texas Transportation Institute, 2005. Delay difference between free flow conditions and estimated actual conditions for freeways and arterial roadways within Sacramento County.³ SACOG, based on output of travel demand models. Congested VMT = VMT on roadways where vehicle demand exceeds roadway capacity.*Source: SACOG, October 2007.*

Table 18 - 3. Transit and Non-Motorized Mode Shares, SACOG Region, 1990 and 2000

Travel Mode Indicator	Year		Average Annual Growth Rate
	1990	2000	'90 to '00
<i>Workers By Commute Mode¹</i>			
By Public Transit	15,500	21,200	+ 3.2% / yr
By Bike or Walk	31,300	28,300	- 1.0% / yr
Total Workers	711,400	828,500	+ 1.5% / yr
Public Transit Share	2.2%	2.6%	+ 1.6% / yr
Bike/Walk Share	4.4%	3.4%	- 2.5% / yr
<i>All Non-Work Person Trips</i>			
By Public Transit ^{2,3}	35,600	45,300	+ 2.5% / yr
By Bike or Walk ²	414,100	486,300	+ 1.6% / yr
Total Person Trips ²	4,801,000	5,639,500	+ 1.6% / yr
Public Transit Share	0.7%	0.8%	+ 0.8% / yr
Bike/Walk Share	8.6%	8.6%	0.0% / yr
<i>All Person Trips⁴</i>			
By Public Transit	68,400	87,200	+ 2.5% / yr
By Bike or Walk	479,700	545,700	+ 1.3% / yr
Total Person Trips	6,282,400	7,378,300	+ 1.6% / yr
Public Transit Share	1.1%	1.2%	+ 0.8% / yr
Bike/Walk Share	7.6%	7.4%	- 0.3% / yr

Notes:

¹ U.S. Census statistics for SACOG Region. Note that these statistics are for workers, not trips.

² SACOG Household Travel Surveys for 1990/91 and 2000. Note that these statistics are person trips.

³ SACOG On Board Transit surveys for 1994 and 1999, interpolated to 1990 and 2000.

⁴ Combines U.S. Census Bureau on commuters, converted to trips, and local survey statistics.

Source: SACOG, October 2007.

Regulatory Setting

Federal Regulations

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

Under SAFETEA-LU, the U. S. Department of Transportation, Federal Highway Administration (FHWA), and Federal Transit Administration (FTA) require that Metropolitan Planning Organizations (MPO's) prepare and submit a metropolitan transportation plan. In regions that are designated federal air quality non-attainment areas, these plans must be updated at least every four years.

The federal requirements for metropolitan transportation plans include a number of key provisions that are outlined below.

- Plans must be developed through an open process that encourages and includes public input

- Plans must cover a period of at least 20 years into the future
- Plans must reflect the most recent assumptions for population, employment, land use, travel, congestion, and economic activity
- Plans must be financially conservative and must contain reasonable revenue assumptions
- Plans must conform to the State Implementation Plan (SIP) for air quality
- Plans must meet the air quality budget set for the SIP

Plans must consider key planning factors in the local context such as economic vitality, safety, security, accessibility and mobility of people and freight, environmental protection, transportation system integration, system efficiency, and preservation of existing transportation system.

State Regulations

The state has similar requirements for the MTP, known as a regional transportation plan (RTP) under state law. The State requirements include several additional provisions. Some of these include:

- compliance with CEQA;
- consistency with State Transportation Improvement Program;
- use of program level performance measures that include goals and objectives; and
- development of three specific elements in the RTP including a policy element, an action element, and a financial element.

California Government Code

The state Government Code requires that the regional transportation planning process be integrated with the state transportation planning process, and that development of state and regional transportation plans is a prerequisite for receipt of federal transportation funds. A regional transportation plan must be submitted every four years to the California Transportation Commission (CTC) and to the California Department of Transportation (Caltrans). It is further required that the preparation of these plans is required to be a cooperative process involving local and regional government, transit operators, congestion management agencies, and the goods movement industry and that the process be a continuation of activities performed by each entity and be performed without any additional cost.

Local Regulations

Several agencies are involved in transportation planning and programming within the MTP Plan Area. At a regional level, SACOG has a primary role as the federally designated metropolitan planning organization and as the state designated regional transportation planning agency for four of the six counties within the plan area – Sacramento, Sutter, Yolo and Yuba. SACOG also works in partnership with local cities and other agencies, such as the El Dorado County Transportation Commission and the Placer County Transportation Planning Agency to identify transportation needs and fund transportation improvements. In addition, since the MTP Plan Area is located in a federal non-attainment air basin, transportation and air quality planning is coordinated through SACOG.

Many local agencies establish standards of performance for roadways within their jurisdictions. The most common standards apply to peak hour operations at surface street intersections, which are defined as a minimum level-of-service or LOS. LOS is typically defined on an A through F scale, with A corresponding with little or no delay, and F with a high level of delay. The specific standard applied, calculation methodology, and exceptions for unique conditions vary widely among jurisdictions in the Sacramento region. The standards are applied on a location-by-location basis, and do not account for overall system performance either within the jurisdiction, or in areas outside the jurisdictions. The performance measures used for evaluation of the MTP in this document are intended to supplement these local standards by focusing explicitly on overall system performance.

IMPACTS AND MITIGATION MEASURES

Methods and Assumptions

SACOG utilized its regional travel demand models to compare the MTP for 2035 conditions with the existing conditions and the No Project Alternative conditions for each of the performance measures discussed previously. SACOG's currently maintains two regional demand forecasting models: the Sacramento Regional Travel Demand Model (SACMET)¹, and the Sacramento Regional Activity-Based Simulation Model (SACSIM)².

SACMET is a traditional “four-step” travel demand model, originally developed by SACOG in 1994, with major updates 1996, 1999, and 2001. SACMET was used for travel forecasts for the 1996, 1999 and 2002 MTP's. A post-process to more fully capture land use and transportation effects of density, diversity (mix of use), design, and destination (the 4D's) was developed by SACOG in 2002, as part of the Blueprint project. SACMET + 4D's post-processing has been used for regional travel forecasts for the MTP 2035 workshops, evaluation and screening of preliminary project alternatives, and for evaluation of the draft MTP 2035.

SACSIM is a newly-developed activity-based tour model. While SACMET represents land use data in a system of 1503 traffic analysis zones (TAZ's) with median size of 300 acres, SACSIM represents land uses at parcel level. SACSIM represents travel activities as “tours” or series of trips connecting activities a person engages in during the course of a normal day. These aspects of SACSIM are cutting-edge features for a regional travel model, and have the potential for capturing more aspects of land use and transportation interactions, as well as the effects of demographic changes, like aging of the population, on travel.

Both SACMET and SACSIM are fully operational travel demand models, with validation results well within published guidelines for regional travel demand models. Both models are being maintained and used to allow for comparison of results, and to allow more time to refine and fully understand and utilize SACSIM as a tool for transportation planning. Over time, SACOG expects to move from SACMET to SACSIM as the primary platform for regional travel forecasts. Although both models were utilized in the development and evaluation of the MTP, SACSIM was used for this EIR analysis, because its forecasts were more conservative than SACMET + 4D's. By this, it is meant that for a key indicator like

¹ SACMET is documented in “Model Update Report: Sacramento Regional Travel Demand Model Version 2001 (SACMET01)”, March 2002, with changes and modifications since 2002 documented in technical memoranda.

² SACSIM is currently documented in technical memoranda only. Comprehensive documentation is being prepared. It should be noted that the “simulation” refers to simulation of travel activities, not simulation of traffic operations.

VMT, for example, SACSIM forecasts higher levels of VMT overall than SACMET + 4D's, and more likely to result in forecasted impacts. Because of the intent of CEQA, this conservatism was viewed as an advantage relative to SACMET + 4D's. At this point, it is believed that SACSIM may be less sensitive to 4D's land use factors than is SACMET + 4D's, which results in the more conservative SACSIM forecasts. A complete overview of the SACSIM and comparison to SACMET is included in Appendix H.

Land use growth forecasts to 2035 which used for the transportation analysis were those adopted by the SACOG Board in August 2007 for use in the MTP. Chapter 15, *Population and Housing*, provided a detailed accounting of the growth forecasts. The travel model datasets used for the analysis were generated by SACOG's I-PLACE³S land use scenario software.

Performance Measures Used to Evaluate the Transportation System

In analyzing the performance of the existing and future transportation systems, four types of performance measures are used, as follows:

Roadway measures relate to travel in vehicles on the roadway system. Total VMT is used as a measure of overall utilization of roadways which relates to vehicle emissions, traffic congestion, and the effectiveness of land use patterns and alternate mode options in reducing the need for vehicle travel. Congested VMT relates to the amount of total VMT which occurs on heavily congested roadways.

Mode choice measures relate to the mode of travel chosen for a trip. Modes include solo-driving, ridesharing, public transit, and non-motorized modes (bicycling and walking), but the focus for the MTP is on the number and share of trips made by transit and non-motorized modes.

Comparison of Existing Conditions with MTP for 2035 conditions on the Metropolitan Transportation System

As discussed in the Population and Housing section of the EIR, population and employment are expected to increase significantly between 2005 and 2035. Region wide, population is expected to increase by about 58 percent, and employment is expected to increase by about 54 percent. On the transportation side, growth in travel is expected as a result of these increases in population and employment.

Table 18-4 provides a tabulation of forecasted 2005-2035 VMT and VMT growth rates compared to the historic trends up to 2005. Daily VMT in the SACOG region is projected to grow from 55 million in 2005 to about 85 million in 2035. This represents an increase of about 53 percent over that time period. The projected increase in dwelling units over the same time period is 60 percent.

The VMT growth rate projected over the Years 2005-2035 is expected to *decrease* from the historic growth rate of 2.5 percent per year to 1.4 percent per year. Moreover, the VMT growth rate is projected to be *lower than* the population growth rate of 1.6. This represents a major reversal of the historic trend in VMT and population growth in the region.

The No Project alternative, which combines the pre-Blueprint projected growth allocation, extended out to Year 2035, and the current 2006 MTP package of transportation investments, would result in a total VMT in Year 2035 of nearly 91 million, or nearly 6 million more than the MTP2035 projection. This represents an increase from Year 2005 of 64 percent, or an annual growth rate of 1.7 percent.

Table 18-4 provides a tabulation of forecasted 2005-2035 CVMT and CVMT growth rates compared to the historic trends up to 2005. CVMT was estimated to increase from 3.4 million daily miles in Year 2005 to 7.8 million in Year 2035 with MTP 2035. This is a total increase of 127 percent, and an average annual increase of 2.8 percent over the same time period. This increase is significantly higher than the growth in VMT (1.4 percent) or in population growth (1.6 percent) in the region.

However, the growth rate in congested travel is considerably reduced over the course of the planning period. The historic growth rate is approximately 5 percent per year. The performance of MTP2035 is also dramatically better than the No Project alternative. By Year 2035 with the No Project alternative, total congestion nearly quadruples to over 13.5 million miles per day. This is a growth rate of 4.7 percent per year, a continuation of the recent growth in congestion.

Table 18 – 4. Daily Vehicle Miles Traveled in SACOG Region, Forecasted to 2035

County	Weekday VMT by Year ¹				VMT Average Annual Growth Rates		No Project Comparison	
	1995	2005	2018	2035	'95-'05 (Actual)	'05-'35 (w/ MTP)	2035	'05-'35 Growth Rate
	El Dorado ³	3,186	3,987	4,934	5,581	+ 2.3% / yr	+ 1.1% / yr	5,961
Placer ³	6,614	9,343	12,507	15,996	+ 3.5% / yr	+ 1.8% / yr	17,087	+ 2.0% / yr
Sacramento	25,226	32,145	40,446	48,162	+ 2.5% / yr	+ 1.4% / yr	51,444	+ 1.6% / yr
Sutter	1,937	2,374	3,092	3,635	+ 2.1% / yr	+ 1.4% / yr	3,883	+ 1.7% / yr
Yolo	4,630	5,683	7,020	8,261	+ 2.1% / yr	+ 1.3% / yr	8,824	+ 1.5% / yr
<u>Yuba</u>	<u>1,519</u>	<u>1,849</u>	<u>2,563</u>	<u>3,244</u>	+ <u>2.0%</u> / yr	+ <u>1.9%</u> / yr	<u>3,465</u>	+ <u>2.1%</u> / yr
SACOG Region Total	43,112	55,381	70,562	84,879	+ 2.5% / yr	+ 1.4% / yr	90,664	+ 1.7% / yr
SACOG Region Dwelling Units²	683,204	828,885	1,042,054	1,324,352	+ 2.0%	+ 1.6%	1,351,598	+ 1.6% / yr

NOTES: ¹ 1995 and 2005 data from California Department of Transportation, based on HPMS reports. 2035 forecasts are from SACOG.

² 1995 and 2005 dwellings from California Department of Finance, adjusted by SACOG to exclude Tahoe Basin. 2035 dwellings from SACOG projections, adjusted to include Tahoe Basin.

³ Excludes Tahoe Basin. Adjustments to county totals by SACOG.

Source: SACOG, October 2007.

Table 18 – 5. Roadway Congestion in SACOG Region, Forecasted to 2035

Year		Total VMT (in 1000's)	Congested VMT (in 1000's)¹	% of VMT Congested
1995	(Actual)	43,112	2,099	4.9%
2005	(Actual)	55,381	3,419	6.2%
2035	(w/MTP)	84,879	7,795	9.2%
<i>Average Annual Growth Rates</i>				
'95 to '05	(Actual)	+ 2.5% / yr	+ 5.0% / yr	
'05 to '18	(w/MTP)	+ 1.4% / yr	+ 2.8% / yr	
<i>No Project Comparison</i>				
2035	(No Project VMT)	90,664	+ 13,478	14.9%
'05 to '35	(No Project Growth Rate)	+ 1.7% / yr	+ 4.7% / yr	

NOTES: ¹ 1995 and 2005 estimated by SACOG based on congestion monitoring data. Year 2035 from SACOG forecasts of travel demand in the region.

Source: SACOG, October 2007.

Table 18-6 provides a tabulation of forecasted 2005-2035 transit and non-motorized trips and growth rates compared to the historic trends up to 2005. Travel by transit with the MTP2035 alternative shows a remarkable increase over the planning period. Total transit trips more than triple from 101,000 trips per day in 2005 to 317,000 in 2035. The transit mode share increases from 1.2 to 2.3 percent. Annual growth in transit trips over the planning period is 3.9 percent per year, more than two times the population growth rate.

Non-motorized tips increase from 617,000 per day in 2005 to 1,132,000 in 2035, an increase of 83 percent over the planning period. Total non-motorized mode increases from 7.4 percent to 8.3 percent in the same period. More importantly, the historic decline in non-motorized mode share is reversed over the planning period.

For the 2035 No Project alternative, total transit and non-motorized trips increase, but by far less than the MTP2035. For both modes, growth is less than growth in total travel, and the mode shares for both decrease relative to 2005: transit mode share decreases from 1.2 to 1.1 percent; non-motorized mode share, from 7.4 to 7.2 percent, continuing the decline in share for non-motorized travel.

Criteria for Determining Significance

The criteria for determining whether the MTP 2035 would have significant environmental impacts related to transportation and traffic were based in part on the environmental checklist in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.) and performance measures established by SACOG. According to the State CEQA Guidelines, significant impacts to transportation and traffic would occur if the plan would:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)

As noted previously, SACOG has established performance measures for the MTP. These measures are being used to determine impacts of the plan. According to the thresholds established by SACOG, the MTP would have a significant impact on the transportation system if it would:

- Result in a substantial increases vehicle miles traveled per household greater than +0.5%
- Result in a substantial decrease in transit or non-motorized trips per household of greater than -0.5%
- Result in a substantial increase in congested vehicle miles traveled per household greater than 10%

Table 18-7 provides a tabulation of key performance measures for evaluation of transportation impacts.

Environmental Impacts of the Proposed Project

This section describes potential impacts on transportation issues that could result from the MTP 2035. Some projects within the MTP 2035 could significantly affect transportation issues. However, prior to final approval of each project considered in the MTP 2035, the implementing agency will conduct the appropriate project-specific environmental review.

Impact TRN-1: Substantial Increase in Vehicle Miles Traveled Per Household

The proposed project would result in a substantial increase in total vehicle miles traveled. However, the growth in VMT would be less than the growth in population, and the average VMT per household would decline by an estimated 6 percent (from 51.7 in 2005 to 48.7 in 2035) compared to current conditions. Because VMT per household is expected to decline, this impact is considered to be less than significant. No mitigation is required.

Impact TRN-2: Substantial Decrease in Transit or Non-Motorized Trips

The project would result in a substantial increase transit trips per household. Transit trips per household would nearly doubles from 0.13 in 2005 to 0.25 in 2035. The project would also result in an increase in non-motorized trips per household, from 0.78 in 2005 to 0.90 in 2035, and increase of 15 percent. Because transit and non-motorized trips per household are both expected to increase, this impact is considered to be less than significant. No mitigation is required.

Impact TRN-3: Substantial Increase in Congested Vehicle Miles Traveled per Household

Congested VMT per household is forecasted to increase from 3.3 miles in 2005 to 3.7 to 3.8 miles in 2035. This is an increase of 13 to 17 percent. However, the No Project alternative would result in 7.0 miles of congested VMT per household, a 115 percent increase from 2005

Table 18 – 6. Weekday Transit and Non-Motorized Mode Shares, SACOG Region, Forecasted to 2035

Travel Mode Indicator	Year			Annual Average Growth Rate		No Project Comparison	
	2000	2005	2035	'00 to '05	'05 to '35	2035	'05-'35 Growth Rate
<i>Person Trips By Mode¹</i>							
By Public Transit	87,239	101,285	316,575	+ 3.0% /yr	+ 3.9% /yr	159,424	+ 1.5%
By Bike or Walk	545,689	617,499	1,131,724	+ 2.5% /yr	+ 2.0% /yr	1,015,751	+ 1.7%
All Person Trips (in 1000's)	7,378	8,395	13,654	+ 2.6% /yr	+ 1.6% /yr	14,181	+ 1.8%
Public Transit Share	1.18%	1.21%	2.32%	+ 0.4% /yr	+ 2.2% /yr	1.1%	-0.2%
Bike/Walk Share	7.40%	7.36%	8.29%	- 0.1% /yr	+ 0.4% /yr	7.2%	- 0.1%

Notes:

¹ Year 2000 combined Census data converted to person trips, and household survey data. Years 2005, 2018 and 2035 combines SACOG travel model forecasts.

Source: SACOG, October 2007.

Table 18-7. Key Performance Indicators for Evaluation of Transportation Impacts

Indicator	2005	Year / Scenario	
		2035 w/ MTP Low – High ²	2035 No Project
Household VMT per Household ¹	51.7	46.3 to 48.7	52.9
% Change from 2005	n/a	-10% to -6%	+ 2%
% Difference 2035 No Project	- 2%	-12% to -8%	n/a
Congested VMT per Household/1/	3.3	3.7 to 3.8	7.0
% Change from 2005	n/a	+13% to +17%	+ 115%
% Difference 2035 No Project	- 53%	-47% to -46%	n/a
Average Transit Trips per Household	0.13	0.25 to 0.27	0.12
% Change from 2005	n/a	+ 96% to +106%	- 3%
% Difference 2035 No Project	+ 4%	+ 103% to +125%	n/a
Average Non-Motorized Trips per Household	0.78	0.90 to 0.98	0.79
% Change from 2005	n/a	+ 15% to +25%	+ 1%
% Difference 2035 No Project	- 1%	+ 14% to +24%	n/a

Notes:

¹ Household VMT = VMT generated by residents of households in SACOG region. Excludes commercial vehicle and through trip VMT.

² Represents range of travel model forecasts for SACOG's travel demand models. Impact analysis based on the most conservative forecasts (in **bold+italics**).

Source: SACOG, October 2007.

conditions. Because the increase from existing conditions is greater than 10 percent, this impact is considered to be significant.

The MTP 2035 itself was structured to reduce and minimize the amount of congestion on the region's roadways. Evidence of this effort is found in the significant reduction in the growth rate in congested travel from its recent trend of +5.0 percent per year to +2.8 percent per year from 2005 to 2035 (see Table 18-5). Additionally, the MTP 2035 will also provide new options for avoiding private vehicle travel altogether, as evidenced by increasing rates of transit and non-motorized travel. However, the combined travel demand generated by new residents in the region is likely to result in more travel on heavily congested roadways for many travelers.

The following mitigation measures do not reduce the impact to a less than significant level. Therefore, this impact is considered significant and unavoidable.

Mitigation Measure ENE – 8: Adopt Transportation Pricing Policy

SACOG shall prepare an analysis on the impacts and viability of using pricing policies with the transit system and selected portions of the road network to encourage people to drive less and use transit, walking and bicycling modes more. This study will identify strategies to reduce GHG emissions that will include, but are not limited to, free or reduced transit fares during “spare the air” days; fare-free zones on the transit system; transit vouchers; days on which transit is free; congestion pricing options for portions of the road system, such as tolls on freeways and highways; and congestion-pricing to enter certain high-traffic areas served by public transit (e.g., downtown Sacramento). SACOG shall adopt a transportation pricing policy based upon these strategies, and shall conduct seminars with local government staff, planning commissioners and elected officials and members of the private development, planning, engineering and design communities to disseminate these strategies.

Mitigation Measure ENE - 9: Create Public Education Program on Individual Transportation Behavior and Climate Change

In conjunction with key partners such as local air districts, public utility providers, area chambers of commerce and others, SACOG shall create a public information program to educate the public about the connection between individual transportation behavior and global climate change, including transportation behavior modifications the public can make to reduce their GHG emissions over time. SACOG shall include information on its website (www.sacog.org) that is focused on global climate change. The website shall identify actions the public can take to reduce their carbon footprint, and provide web links to sources of information on SACOG's Regional Ridesharing Program, which is designed to promote alternative mode use (carpools, vanpools, public transit, bicycling, walking, telecommuting) and other travel demand management strategies.

Mitigation Measure ENE – 11: Adopt Regional Parking Regulation Policy to Provide Incentives for Use of Alternative Modes

SACOG shall prepare an analysis and perform travel modeling and air emissions analysis to identify a range of alternatives for local governments to use to modify current parking regulations to create incentives for people to use available transit, walking and biking options. The analysis shall address impacts of parking maximum and minimum

requirements, shared parking systems, and parking pricing on travel behavior and air emissions. The study will also include the potential for application of alternative energy technologies, such as solar shading and power generation, at both structured and surface parking facilities. The I-PLACE³S energy module (see Mitigation Measure ENE – 13) will be used to support this research. This study will be conducted cooperatively with key partners such as the air districts and local governments within the region. At the conclusion of the study, SACOG shall adopt a parking policy based upon the study results, and shall work with local governments to modify local parking regulations.

Mitigation Measure ENE – 12: Adopt Safe Routes to School Policy and Implement Pilot Program and Conduct Workshop with Cities, Counties and School Districts to Identify other Opportunities for Collaboration that may reduce Greenhouse Emissions

Within 3 years from the adoption of the MTP 2035, SACOG shall adopt a Safe Routes to Schools (SRTS) policy to promote the practice of safe bicycling and walking to and from schools throughout the MTP Plan Area in order to reduce traffic congestion, improve air quality, and enhance neighborhood safety. There are both federal and state funding programs for SRTS. As a regional agency, SACOG is an eligible applicant under the federal program for both infrastructure and non-infrastructure projects. Under the state program, only cities and counties are eligible applicants for infrastructure projects only. (Caltrans, 2007) With the passage of the Safe Routes to School bill (AB 1475), a “one-third” distribution formula for federal safety funds to be allocated in equal amounts to: state highways, local roads, and Safe Routes to School (SRTS) construction program was established.

The federal Safe Routes to School program (SRTS) was authorized by Section 1404 of the *SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users)*. SACOG shall also obtain federal funds from the Federal Highway Administration through Caltrans to implement at least one SRTS pilot program within the MTP Plan Area.

The State-legislated Safe Routes to School program (SR2S) is contained in Streets & Highways Code Section 2330-2334. SACOG shall encourage its member agencies to apply for funds available through the State Highway Safety Improvement fund for eligible infrastructure projects in order to improve bicycle and pedestrian safety for school children.

SACOG shall also join the Safe Routes to School National Partnership, a network of more than 300 nonprofit organizations, government agencies, schools, and professionals working together to advance the Safe Routes to School movement in the United States.

In addition, SACOG will host a regional workshop for all cities, counties, school districts and transit operators within the region to identify other potential opportunities for collaboration that would reduce greenhouse gas impacts. At a minimum, the issues discussed will include the findings from the Safe Routes to School activities described above, opportunities to increase the number of students with bus or other transit options to get to and from school, and integrating school siting practices with goals of promoting walkable neighborhoods with a wide range of easily accessible services. This workshop will be patterned after the “Stretching Community Dollars Guidebook” and workshop series that the SACOG Executive Director wrote for the California City, County,

Schools (CCS) Partnership (a non-profit organization of the League of California Cities, California State Association of Counties and California School Boards Association). That workshop series is specifically designed to help these three local government entities to take maximum advantage of opportunities for collaboration. SACOG will ask the CCS Partnership to co-host the event, and offer to make the materials prepared for the event available to the CCS Partnership for use in its on-going workshop series around the state.

Mitigation Measure ENE – 15: Adopt a “Complete Streets” Policy

SACOG shall adopt a “Complete Streets” policy to require that applicants for SACOG regional funding programs demonstrate that the planning, design, construction and maintenance of roadway and transit facilities include the needs of all transportation users – pedestrians, bicyclists, the disabled, transit users, and motorists. Examples include facilities (sidewalks, bike lanes, etc.) that allow for safe walking, biking and wheelchair access along roadways. Through its Complete Streets policy, SACOG shall require that applicants for local funding programs administered by SACOG demonstrate that their project is multi-modal and will consider the needs of bicyclists, pedestrians and disabled travelers. SACOG’s policy shall be consistent with current, adopted regional and local plans, and in accordance with locally adopted policies such as Sacramento County’s Measure A program that earmarks funds for multi-modal improvements (highway, street, and road construction; highway, street, and road maintenance; bus and light rail capital and operations; improved transportation services for elderly and handicapped persons; and transportation-related air quality programs). In the absence of such plans, federal, state, and local standards and guidelines should be used to determine appropriate accommodations for pedestrians, bicyclists, and disabled travelers.

The policy shall also require applicants for State funding programs to ensure that projects are consistent with *Caltrans Directive 64*, which states that the California Department of Transportation, "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." The policy shall also require that applicants for federal funding programs ensure that projects are consistent with the United States Department of Transportation Policy Statement on “Accommodating Bicyclists and Pedestrians in Transportation Projects”.

Mitigation Measure LU - 2: Initiate a “Complete Streets” Technical Assistance Program

To implement the Complete Streets policy, SACOG shall review and analyze the practices of local governments within the SACOG region and around the nation to identify appropriate “Best Practices” for complete street design within the SACOG region. “Complete Streets” means design of the right-of-way for all relevant modes of travel, including pedestrian, bicyclists and transit as well as automobiles. The best practices will address the functional needs of different types of streets, including arterials, major and minor collectors, and local streets. SACOG shall develop a curriculum, conduct educational seminars/workshops to disseminate the best practices information and provide technical assistance for local governments (public works and planning staff, planning commissioners and elected officials) and members of the private land use development, planning, engineering and design communities to assist the design

and construction of “Complete Streets” throughout the MTP Plan Area. SACOG shall also provide technical assistance to local governments on a case by case basis, as requested, to help them to successfully implement this concept.