

# CHAPTER 11: TRANSPORTATION SYSTEMS MANAGEMENT

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Transportation Systems Management (TSM) is often used interchangeably with Transportation Control Measures (TCMs) and Transportation Demand Management (TDM) to describe a series of techniques designed to maximize the efficiency of the existing transportation system by reducing dependence on single occupant vehicles. The common goals of TSM, TCMs, and TDM are to reduce traffic congestion, improve air quality, and reduce or eliminate the need for new and expensive transportation infrastructure. Techniques are generally low-cost measures to reduce travel demand or improve the utilization of existing transportation facilities.

The differences between the three concepts are subtle. Each contains alternative transportation measures, such as carpooling, transit, bicycling, walking, vanpooling, compressed work weeks, and telecommuting. TSM's place emphasis on reducing traffic congestion by increasing the person-trip capacity of existing transportation systems. As such, TSM techniques also include restriping roadways for channelization, ramp metering, and establishment of freeway auxiliary lanes. TCM's are geared towards reducing air pollution through techniques such as alternative fuel vehicles. TDM emphasizes reducing the demand for single occupant vehicle travel through techniques such as teleconferencing and advanced communication technology.

Since 1981, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have required that Transportation Systems Management (TSM) be part of the regional transportation planning and programming process. Specifically, the Regional Transportation Plan must have a TSM element which describes how the region intends to deal with the movement of people and goods by improving the efficiency and effectiveness of the total transportation system.

## TRANSPORTATION SYSTEMS MANAGEMENT STRATEGIES

### TRAFFIC FLOW IMPROVEMENTS

Roadway restriping, channelization, ramp metering, auxiliary lanes, elimination of on-street parking, and computerized signalization are techniques currently used to improve the flow of traffic without new road construction. Roadway restriping seeks to increase the number of lanes by reducing lane width, thus increasing traffic capacity. Channelization, which is often done in conjunction with restriping, adds turn lanes to busy roadways to eliminate traffic backups behind cars trying to make turns. Auxiliary lanes are often added to ease merging of traffic onto and off of freeways, such as US 50. Elimination of on-street parking is done to add lanes, and thus capacity, to heavily traveled roadways. In addition, traffic backups caused by vehicles entering or exiting on-street parking spaces is eliminated. Computerized signalization seeks to coordinate signal timing to smooth traffic flow.

### TRANSIT

Public transit service is the most widely used TSM measure in El Dorado County, serving residents who depend on transit for commuting to work and school and for shopping, medical, and leisure trips. Chapter 7 provides a comprehensive overview of the public transportation services provided by the El Dorado County Transit Authority (EDCTA). EDCTA provides

commuter bus services to downtown Sacramento as well as local deviated fixed routes, demand response, intercity commuter service, and contracted social service transportation.

## **RIDESHARING**

There are several coordinated ridesharing programs that serve El Dorado County. The Sacramento Area Council of Governments (SACOG) manages the Regional Rideshare program covering El Dorado, Placer, Sacramento, Yolo, Yuba, and Sutter counties. It is part of a statewide network of rideshare agencies. The purpose of the Regional Rideshare program is to encourage the use of alternative transportation modes for traveling to work, school, personal trips, and recreation. The Regional Rideshare program includes a toll-free number to call for information, a database of commuters interested in ridesharing (carpools and vanpools), and an extensive outreach program through employers. Employers are encouraged to offer incentives, such as transit pass subsidies, and disincentives, such as charging for parking, to encourage employees to use an alternative transportation mode. In addition, 50Corridor.com works with employers in the region to implement commute programs that focus on transportation alternatives such as carpooling, vanpooling, cycling, walking and utilizing transit to improved the commute today and into the future.

Another regional program focused on encouraging ridesharing is the Spare-the-Air program managed by the Sacramento Metropolitan Air Quality Management District (SMAQMD) and supported by the air districts of the Sacramento region (including the El Dorado County Air Quality Management District). Spare-the-Air is a regional driving curtailment and health notification program which operates in the Sacramento ozone non-attainment area (which includes El Dorado County with the exception of the Tahoe Basin) during the summer smog season, May to October. Drivers are alerted to reduce driving on days when ozone formation is expected to be high, and the public is advised of ozone levels and health effects through a variety of media.

EDCTC, in cooperation with participating El Dorado County school districts, promotes the SchoolPool program throughout El Dorado County, which provides carpool ridematch lists to parents with students attending the same school(s) to encourage carpooling.

## **PEDESTRIAN AND BIKEWAY FACILITIES**

Providing a safe, efficient and convenient network of pedestrian and bikeway facilities make bicycling and walking more attractive as alternatives to the automobile. The El Dorado County Bicycle Transportation Plan and City of Placerville Non-Motorized Transportation Plan discuss how bicycle and pedestrian facilities interface with other transportation modes and activity centers as well as regional connectivity. A complete description of existing and future pedestrian and bikeway facilities within El Dorado County is included in Chapter 10.

## **PARK-AND-RIDE LOTS**

The purpose of park-and-ride lots is to provide a central meeting place adjacent to major travel routes where commuters can congregate and form carpools or catch buses for the remainder of the commute trip. Caltrans operates numerous park-and-ride lots in El Dorado County, located along US 50. The El Dorado County Transit Authority also operates several lots, located convenient to US 50. The lots include paved areas for parking cars and some lots include bicycle lockers.

## **INTELLIGENT TRANSPORTATION SYSTEMS**

There are several Intelligent Transportation Systems (ITS) efforts underway in the Sacramento region, in the foothill counties (El Dorado, Placer, Nevada, Sierra), and in the Tahoe Basin (refer

to Chapter 12). The Tahoe Gateway ITS Strategic Deployment Plan recommends implementation of several technology improvements that can improve the flow and timeliness of information available to the traveler in order to avoid and/or reduce traffic congestion and delays due to traffic. Regional projects focus on traveler information management, emergency management, and communications. In El Dorado County, recommended improvements include signal system technology, traffic management, and Automatic Vehicle Identification (AVI), Automatic Vehicle Location (AVL), and Computer Aided Dispatch (CAD) technologies for public transit and emergency vehicles.

An example of a regional ITS project is the recently implemented 511 comprehensive traveler information system. 511 is a joint project between SACOG, the California Department of Transportation and other partners. The 511 system provides access to information about all modes of travel: traffic conditions for commuters, bus and light rail information for more than 20 transit agencies, Paratransit services for the elderly and disabled, and information about ridesharing and commuting by bike. The telephone service is available in English and Spanish and, in conjunction with the phone service, the 511 website can help users plan their daily commute, access transit providers, find a carpool partner, and learn about bicycling as a commute option. With the traffic information on this site, users can check commute options and know the road conditions before travelling. Once behind the wheel, users can call 511 for traffic updates. For more information about the 511 service, visit the SACOG website, at [www.sacog.org](http://www.sacog.org).

## **TRANSPORTATION DEMAND MANAGEMENT STRATEGIES**

### **TELECOMMUTING, COMPRESSED WORK WEEKS, AND FLEXIBLE WORK HOURS**

Telecommuting, compressed work weeks, and flexible work hours are employment-based techniques to reduce the number of work trips per week, or to transfer trips to reduce peak hour congestion. Telecommuting, or alternative work location, allows workers to perform job duties at home or another location, communicating with the main work center by modem, fax, or telephone as necessary. This alternative is especially attractive for workers in rural areas or those commuting long distances. The addition of new and lower cost technologies, such as DSL lines for faster internet communications and less expensive internet access, will continue to encourage telecommuting as a TDM strategy. Studies have shown that telecommuters are up to 20% more productive.

Compressed work weeks increase the number of hours worked each day to squeeze a regular work week into fewer work days. A typical schedule could be four 10-hour work days each week (4/10 schedule) or eight 9-hour days and one 8-hour day in two weeks (9/80 schedule).

Flexible work hours do not reduce the number of work trips per week, but seek to reduce traffic congestion by shifting some trips out of the peak period. Employers using flexible hours may allow workers to vary time of arrival and departure daily, or may require workers to choose a specific schedule to meet the needs of the employer and employee.

### **TELECONFERENCING**

Teleconferencing is generally defined as meetings held by telephone or via video hookup to replace the need for traveling to meet in person. Many employers in El Dorado County utilize teleconferencing as a cost-effective way to conduct meetings and seminars while avoiding travel on roadways.

## **ALTERNATIVE FUELS**

Alternative fuels are used to power motor vehicles while reducing the impacts to air quality. Common alternative fuels include methanol, propane, compressed natural gas (CNG), and electricity. Current efforts in the Sacramento region are focusing on cost effective ways to reduce precursors to ozone in order to meet federal air quality conformity guidelines. Due in large part to the unavailability of alternative fueling facilities in El Dorado County, EDCTA utilizes “clean diesel” equipment which meets California Air Resources Board requirements.

## **TRANSPORTATION SYSTEMS MANAGEMENT/ TRANSPORTATION DEMAND MANAGEMENT ACTION PLAN**

The Action Element of the RTP consists of short-term and long-term projects and activities that address regional transportation issues and needs. The federal conformity regulations (Title 40 CFR 93.106, Content of Transportation Plans) identify the short term horizon as a period up to 10 years in the future and the long term horizon as projects or activities 20 years and beyond. The Action Element implements the Policy Element, must be consistent with the financial constraints identified in the Financial Element and must conform with the air quality State Implementation Plan (SIP).

The TSM Action Plan implements Goal 6, Objective B, of the Policy Element of this RTP, which pertains to TDM and reads as follows: *Advance the use of Transportation Demand Management (TDM) in a thorough, cost-effective manner.* **For related projects, refer to Table 12-1, ITS Action Plan.**

**TABLE 11-1: TRANSPORTATION SYSTEMS MANAGEMENT/ TRANSPORTATION DEMAND MANAGEMENT SHORT AND LONG TERM ACTION PLAN (UP TO 10 YEARS AND 20 YEARS AND BEYOND)**

<b>Project Description</b>	<b>Responsible/Support Agencies</b>
Work cooperatively with neighboring jurisdictions to implement ITS improvements in the region	EDCTC, SACOG, TRPA, NCTC, PCTPA, Sierra County, Caltrans
Continue to work cooperatively with Caltrans, SACOG, SMAQMD, and 50Corridor.com on implementation and enhancement of regional rideshare programs that encourage the use of alternative modes of transportation	Caltrans, SACOG, SMAQMD, EDCTC, 50Corridor.com, local employers, schools
Implement traffic flow improvements on regionally significant roadways	EDCTC, Local jurisdictions, Caltrans
Improve and expand public transportation systems as feasible	EDCTC, EDCTA
Develop and expand facilities to support the use of alternative transportation such as pedestrian and bicycle facilities and park-and-ride lots	EDCTC, EDCTA, Local jurisdictions, Caltrans
Work cooperatively to implement school congestion mitigation programs, such as school pool and walking school buses	El Dorado County/City of Placerville/School Districts/EDCTC
Expand the use of alternative fuels to reduce impacts on air quality	EDCTC, SACOG, EDC APCD, SMAQMD, EDCTA, Local jurisdictions