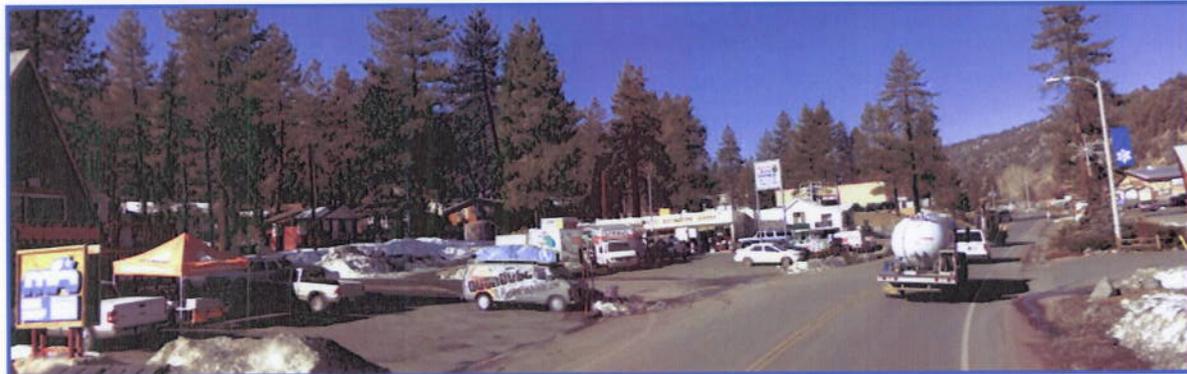
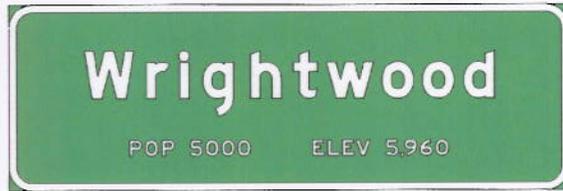




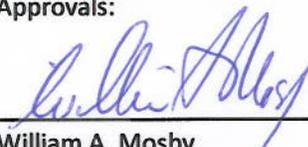
TRANSPORTATION CONCEPT REPORT
State Route 2
District 8
September 2012



Disclaimer: The information and data contained in this document are for planning purposes only and should not be relied upon for final design of any project. Any information in this Transportation Concept Report (TCR) is subject to modification as conditions change and new information is obtained. Although planning information is dynamic and continually changing, the District 8 Freight and System Planning Branch makes every effort to ensure the accuracy and timeliness of the information contained in the TCR. The information in the TCR does not constitute a standard, specification, or regulation, nor is it intended to address design policies and procedures.

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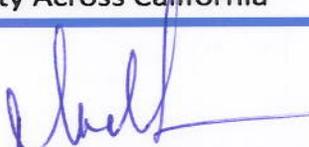
Approvals:



 William A. Mosby
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9/19/12

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9/25/12

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ABOUT THE TRANSPORTATION CONCEPT REPORT

System Planning is the long-range transportation planning process for the California Department of Transportation (Caltrans). The System Planning process fulfills Caltrans' statutory responsibility as owner/operator of the State Highway System (SHS) (Gov. Code §65086) by identifying deficiencies and proposing improvements to the SHS. Through System Planning, Caltrans focuses on developing an integrated multimodal transportation system that meets Caltrans' goals of safety, mobility, delivery, stewardship, and service.

The System Planning process primarily produces four products: the District System Management Plan (DSMP), the Transportation System Development Plan (TSDP), the Transportation Concept Report (TCR), and the Corridor System Management Plan (CSMP). The district-wide **DSMP** is a strategic policy and planning document that focuses on maintaining, operating, managing, and developing the transportation system. The **TSDP** is a list of planned and partially programmed transportation projects used to recommend projects for funding. The **TCR** evolves from the development of the DSMP and TSDP and is used to document the existing and future route conditions as well as future needs for each route on the SHS. Similar to the TCR, the **CSMP** is a more complex multi-jurisdictional planning document that identifies future needs within corridors experiencing or expected to experience high levels of congestion. The CSMP serves as a TCR for segments covered by the CSMP. These System Planning products are also intended as resources for stakeholders, the public, partners, and regional and local agencies.

TCR Purpose

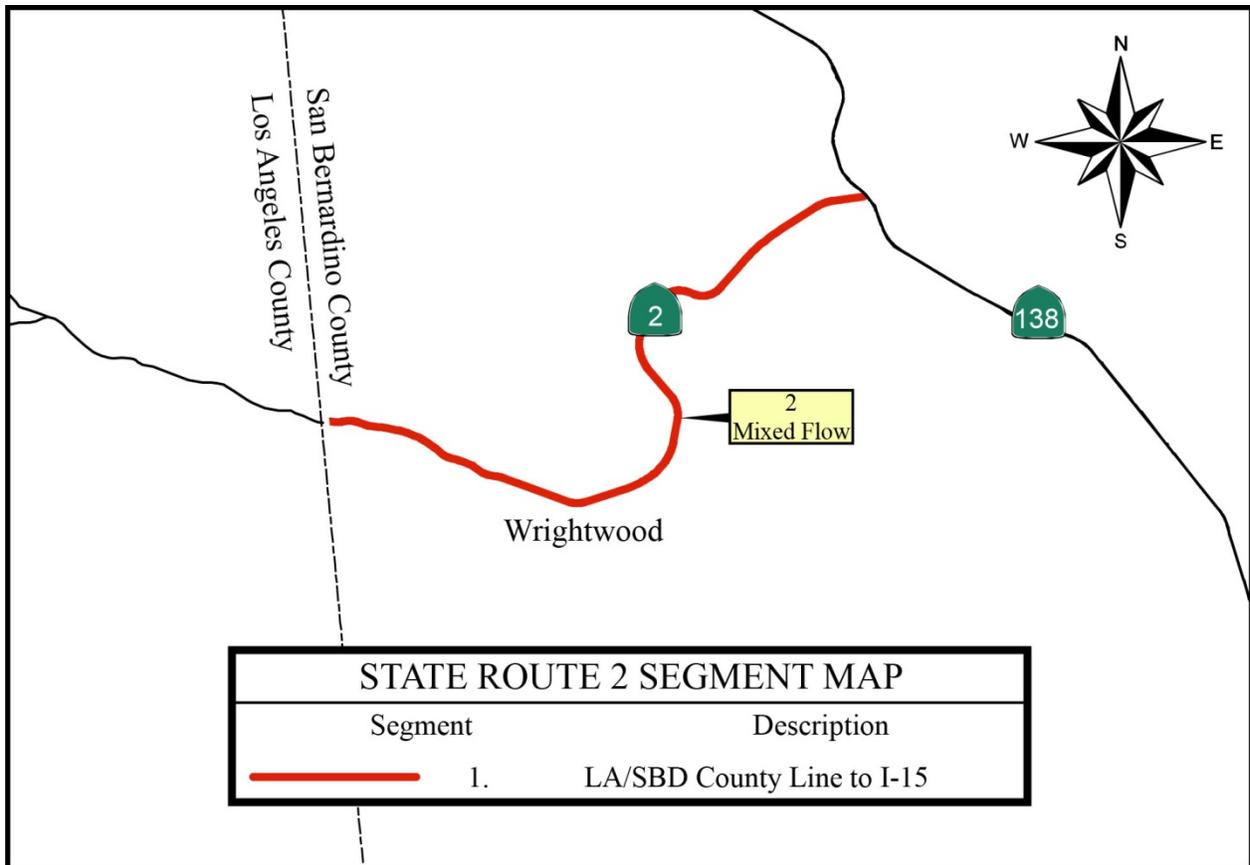
California's State Highway System needs long-range planning documents to guide the logical development of transportation systems as required by law and as necessitated by public, stakeholders, and system users. The purpose of the TCR is to evaluate current and projected conditions along the route and communicate the vision for the development of each route in each Caltrans District during a 20-25 year planning horizon. The TCR is developed with the goals of increasing safety, improving mobility, providing excellent stewardship, and meeting community and environmental needs along the corridor through integrated management of the transportation network, including the highway, transit, pedestrian, bicycle, freight, operational improvements and travel demand management components of the corridor.

EXECUTIVE SUMMARY: STATE ROUTE 2

Concept Summary Table

CONCEPT – 2035 Facility

Segment	ADT	Dir. Split	Peak Hour	Truck Peak Hour	No-Build		Planned SCAG RTP		LOS "D" Minimum Requirement	Concept
1	22,500	60%	2,270 (10.1%)	500 (22.3%)	2 MF		2 MF		4 MFE	2 MF
					V/C	LOS	V/C	LOS		
					0.82	E	0.82	E		



Concept Rationale

This segment is expected to continue as a two-lane conventional highway with no significant growth or development projected for the community of Wrightwood and the rural areas of San Bernardino County. No capacity improvements are currently envisioned for this corridor.

Proposed Projects and Strategies

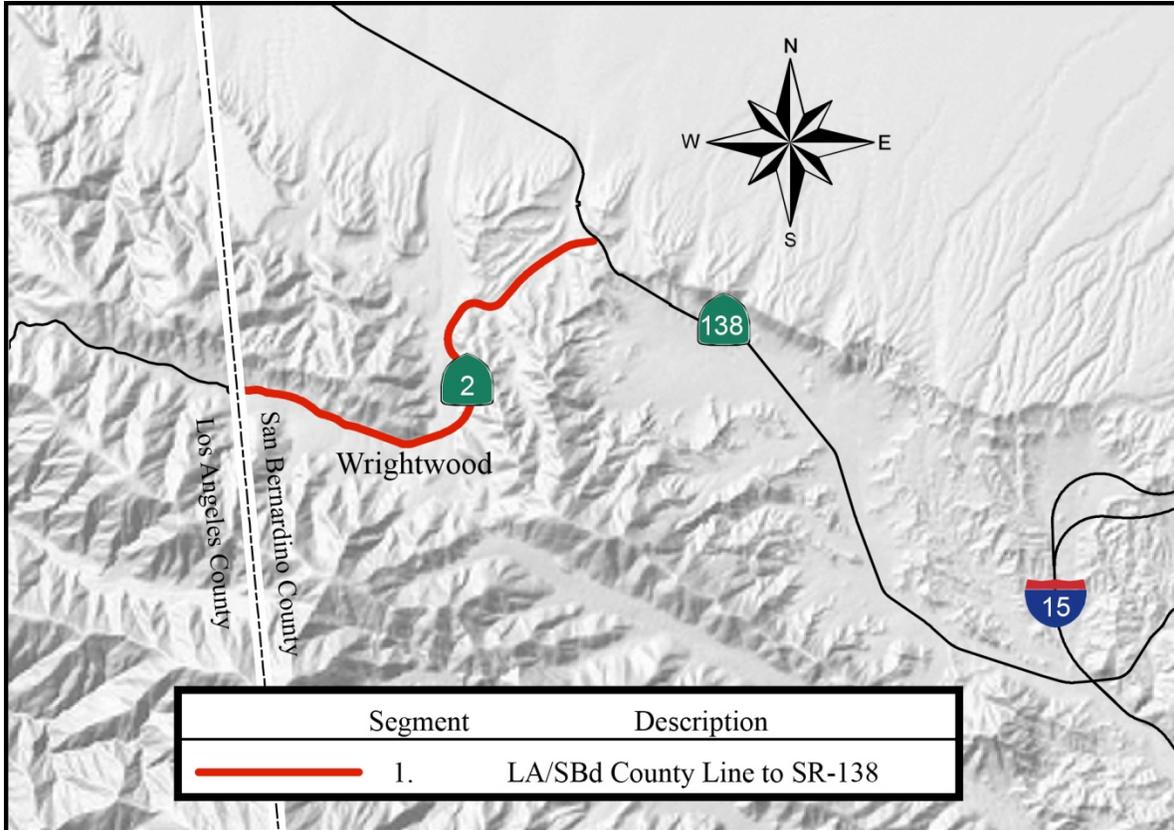
No capacity increasing, mainline improvements are currently planned or programmed for SR-2.

CORRIDOR OVERVIEW

ROUTE SEGMENTATION

State Route 2			
Segment	County	Post Miles	Description
1	SBd	0.0-6.4	Los Angeles/San Bernardino County Line to SR-138

State Route 2 Segmentation Map



ROUTE DESCRIPTION

State Route 2 (SR-2) originates in the city of Santa Monica, Los Angeles County, at its junction with State Route 1 and ends in the County of San Bernardino at its junction with State Route 138. SR-2 is approximately 89 miles in length. In District 8, the route is 6.4 miles in length and lies within the County of San Bernardino.

For purposes of this study, SR-2 in District 8 is analyzed as one segment. SR-2 is a two-lane conventional highway connecting the rural community of Wrightwood and Mountain High Ski Resort with the Victorville-Hesperia-Apple Valley Urbanized Area to the north and the San Bernardino-Riverside Urbanized Area to the south.

Route Designation and Characteristics

Seg.	Freeway and Expressway System	National Highway System	Strategic Highway Network	Scenic Highway	Interregional Road System Route	High Emphasis Route	Focus Route	Federal Functional Classification	Goods Movement Route	Truck Designation	Rural/Urban/Urbanized	Metropolitan Planning Organization	Regional Transportation Planning Agency	Congestion Management Agency	Local Agencies	Tribes	Air District	Terrain
1	No	No	No	No	Eligible	No	No	Minor Arterial	No	Terminal Access/Advisory Route	Rural	SCAG	SCAG	SANBAG	SBd Co., SANBAG	No	Mojave Desert AQMD	Mountainous

COMMUNITY CHARACTERISTICS AND LAND USE

Segment 1 traverses undeveloped areas of San Bernardino National Forest and the developed community of Wrightwood. Wrightwood is an unincorporated community of approximately 5,000 people.¹ Land uses within the community of Wrightwood include residential and commercial. East of Wrightwood is Mountain High Ski Resort.

SYSTEM CHARACTERISTICS

Existing Facility					
Segment	Facility Type	Mixed-Flow Lanes	Managed Lanes	Centerline Miles	Lane Miles
1	Conventional Highway	2	0	6.4	12.8

Concept Facility					
Segment	Facility Type	Mixed-Flow Lanes	Managed Lanes	Centerline Miles	Lane Miles
1	Conventional Highway	2	0	6.4	12.8

TMS Elements				
Segment	Signalized Intersection 2008	Signalized Intersection 2035	Ramp Meters 2008	Ramp Meters 2035
1	1	1	0	0

¹ U.S. Census Bureau, United States Census 2010

BICYCLE FACILITY

There are currently no designated bicycle routes on SR-2.

Bicycle Facility Table		
Segment	Bicycle Access Prohibited	Facility Description
1	No	Highway shoulders are open for bicycles on this segment. Topography is mountainous.

PEDESTRIAN FACILITY

Pedestrian are permitted along and across SR-2 throughout the route.

Pedestrian Facility Table		
Segment	Pedestrian Access Prohibited	Facility Description
1	No	Highway shoulders are open for pedestrian on this segment.

TRANSIT FACILITY

There are no transit facilities or routes planned through this corridor.

Transit Facility Table			
Segment	Mode & Collateral Facility	Name	Route End Points
1	N/A	N/A	N/A

FREIGHT

There are no facilities or freight generators within this corridor.

Freight Facility Table			
Facility Type/Freight Generator	Location	Mode	Name
N/A	N/A	N/A	N/A

CORRIDOR PERFORMANCE²

Basic System Operations							
Segment	AADT 2008	AADT 2035	LOS 2008	LOS 2035	LOS Concept	VMT 2008	VMT 2035
1	4,698	8,110	D	E	D	29,870	51,563

Truck Traffic				
Segment	Total Average Annual Daily Truck Traffic (AADT) 2008	Total Trucks (% of AADT) 2008	5+ Axle Average Annual Daily Truck Traffic (AADTT) 2008	5+ Axle Trucks (% of AADT) 2008
1	188	4%	16	9%

Peak Period Traffic Data				
Segment	Peak Direction	Time of Day	VMT 2008	VMT 2035
1	Westbound	6am-9am/3am-7pm	5,965	9,331

² Corridor Performance table is based on 2008 Caltrans traffic data and SCAG Model 2035.

KEY CORRIDOR ISSUES

SR-2 serves the local residents, businesses, and visitors of the quiet, closed knit community of Wrightwood nestled in the San Gabriel Mountains with minimal traffic delays. However, during the course of peak winter season, when the area receives snow fall, traffic through this corridor experiences high level of congestions and delays. Snowboarders and skiers flock to the local ski resort and day trippers visit the undeveloped areas for a day of fun in the snow. With less than ample shoulders along the undeveloped areas, visitors frequently park their vehicles blocking the mainline traffic in both directions, not only for residents but also emergency and medical personnel and causing increased response time of their services.

CORRIDOR CONCEPT

CONCEPT RATIONALE

Aside from the high volume of traffic during the winter season, the average daily traffic is relatively low during the rest of the year. This segment is expected to continue as a two-lane conventional highway with no significant growth or development projected for the community of Wrightwood and adjacent rural areas of San Bernardino County. No capacity improvements are currently envisioned for this corridor; however, Caltrans is currently implementing a 2008 SHOPP project to widen the existing roadbed to provide left turn pockets, add shoulders and construct drainage improvements. The project is anticipated to reduce collisions within the project area and enhance the overall highway operational efficiency. The project limits are from east of Rivera Drive to east Sheep Creek Drive (PM 0.6/2.5).

PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES

Segment	County	Post Miles	Location	Lead Agency	Project
2012 Regional Transportation Improvement Program (RTIP) Projects					
No projects are planned					
2012 Financially Constrained Regional Transportation Plan (RTP) Projects					
No projects are planned					
Strategic Plan Projects (Unconstrained)					
No projects are planned					

PROJECTS AND STRATEGIES TO ACHIEVE CONCEPT

Segment	Location	Description
1	N/A	N/A

Appendix A

GLOSSARY OF TERMS AND ACRONYMS

Acronyms

- AADT** – Annual Average Daily Traffic
- ADT** – Average Daily Traffic
- AQMD** – Air Quality Management District
- Caltrans** – California Department of Transportation
- CMA** – Congestion Management Plan
- CSS** – Context Sensitive Solutions
- FHWA** – Federal Highway Administration
- GHG** – Green House Gas
- HCP** – Habitat Conservation Plan
- HCS** – Highway Capacity Software
- HOV** – High Occupancy Vehicle Lane
- HOT** – High Occupancy Toll Lane
- IC** – Interchange
- ITS** – Intelligent Transportation System
- LOS** – Level of Service
- MF** – Mixed-Flow Lane
- MFE** – Mixed-Flow Lane Equivalent
- ML** – Managed Lane
- MPO** – Metropolitan Planning Organizations
- NOA** – Naturally Occurring Asbestos
- NCCP** – Natural Community Conservation Plan
- OC** – Overcrossing
- PID** – Project Initiation Document
- PM** – Post Mile
- PSR** – Project Study Report
- RCTC** – Riverside County Transportation Commission
- Riv** – Riverside County
- RTP** – Regional Transportation Plan
- RTIP** – Regional Transportation Improvement Program
- RTPA** – Regional Transportation Planning Agency
- SANBAG** – San Bernardino Associated Governments
- SBd** – San Bernardino County
- SCAG** – Southern California Association of Governments
- SCS** – Sustainable Community Strategies
- SHOPP** – State Highway Operation Protection Program
- STIP** – State Transportation Improvement Program
- T** – Truck Lane
- TDM** – Transportation Demand Management
- TMS** – Transportation Management System
- TSN** – Transportation System Network
- UC** – Undercrossing
- V/C** – Volume to Capacity Ratio
- VMT** – Vehicle Miles Travel

Definitions

Annual Average Daily Traffic (AADT) – Annual Average Daily Traffic is the total volume for the year divided by 365 days. The traffic count year is from October 1st through September 30th. Traffic counting is generally performed by electronic counting instruments moved from location throughout the State in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. Annual ADT is necessary for presenting a statewide picture of traffic flow, evaluating traffic trends, computing accident rates, planning and designing highways, and other purposes.

Bikeway Class I (Bike Path) – Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross flow by motorists minimized.

Bikeway Class II (Bike Lane) – Provides a striped lane for one-way bike travel on a street or highway.

Bikeway Class III (Bike Route) – Provides for shared use with pedestrian or motor vehicle traffic.

Capacity – The maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic, and control conditions.

Capital Facility Concept – The 20-25 year vision of future development on the route to the capital facility. The capital facility can include capacity increasing, state highway, bicycle facility, pedestrian facility, transit facility (Intercity Passenger rail, Mass Transit Guideway etc.), grade separation, and new managed lanes.

Concept LOS – The minimum acceptable level of service over the next 20-25 years.

Conceptual Project – A conceptual improvement or action is a project that is needed to maintain mobility or serve multimodal users, but is not currently included in a financially constrained plan and is not currently programmed. It could be included in a General Plan or in the unconstrained section of a long-term plan.

Corridor – A broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways, bicycle, pedestrian, and transit route alignments. Off system facilities are included for informational purposes and not analyzed in the TCR.

Facility Concept – Describes the facility and strategies that may be needed within 20-25 years. This can include capacity increasing, state highway, bicycle facility, pedestrian facility, transit facility, non-capacity increasing operational improvements, new managed lanes, conversion of existing managed lanes to another managed lane type or characteristic, TMS field elements, transportation demand management, and incident management.

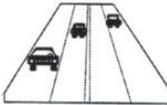
Facility Type – The facility type describes the state highway facility type. The facility could be freeway, expressway, conventional, or one-way city street.

Freight Generator – Any facility, business, manufacturing plant, distribution center, industrial development, or other location (convergence of commodity and transportation system) that produces significant commodity flow, measured in tonnage, weight, carload, or truck volume.

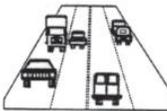
Headway – The time between two successive vehicles as they pass a point on the roadway, measured from the same common feature of both vehicles.

Intelligent Transportation System (ITS) – Improves transportation safety and mobility and enhances productivity through the integration of advanced communications technologies into the transportation infrastructure and in vehicles. Intelligent transportation systems encompass a broad range of wireless and wire line communications-based information and electronics technologies to collect information, process it, and take appropriate actions.

Level of Service (LOS) – It is a qualitative measure describing operational conditions within a traffic stream and their perception by motorists. A LOS definition generally describes these conditions in terms of speed, travel time, freedom to maneuver, traffic interruption, comfort, and convenience. LOS can generally be categorized as follows:



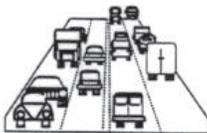
LOS A describes free flowing conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway.



LOS B is also indicative of free-flow conditions. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.



LOS C represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver with the traffic stream is now clearly affected by the presence of other vehicles.



LOS D demonstrates a range in which the ability to maneuver is severely restricted because of the traffic congestion. Travel speed begins to be reduced as traffic volume increases.



LOS E reflects operations at or near capacity and is quite unstable. Because the limits of the level of service are approached, service disruptions cannot be damped or readily dissipated.



LOS F is a stop and go, low speed conditions with little or poor maneuverability. Speed and traffic flow may drop to zero and considerable delays occur. For intersections, LOS F describes operations with delay in excess of 60 seconds per vehicle. This level, considered by most drivers unacceptable often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection.

Mainline – Includes travelway for through traffic but not freeway to freeway interchanges, local road interchanges, ramps, or auxiliary lanes.

Multimodal – The availability of transportation options using different modes within a system or corridor, such as automobile, subway, bus, rail, or air.

Peak Hour – The hour of the day in which the maximum volume occurs across a point on the highway.

Peak Hour Volume – The hourly volume during the highest hour traffic volume of the day traversing a point on a highway segment. It is generally between six percent and 10 percent of the Annual Daily Traffic (ADT). The lower values are generally found on roadways with low volumes.

Planned Project – A planned improvement or action is a project in a financially constrained section of a long-term plan, such as an approved Regional or Metropolitan Transportation Plan (RTP or MTP), Capital Improvement Plan, or measure.

Post-25 Year Concept – This dataset may be defined and re-titled at the District's discretion. In general, the Post-25 Year concept could provide the maximum reasonable and foreseeable roadway needed beyond a 20-25 year horizon. The post-25 year concept can be used to identify potential widening, realignments, future facilities, and rights-of-way required to complete the development of each corridor.

Post Mile (PM) – A post mile is an identified point on the State Highway System. The milepost values increase from the beginning of a route within a county to the next county line. The milepost values start over again at each county line. Mile post values usually increase from south to north or west to east depending upon the general direction the route follows within the state. The mile post at a given location will remain the same year after year. When a section of road is relocated, new milepost (usually noted by an alphabetical prefix such as "R" or "M") are established for it. If relocation results in a change in length, "mile post equations" are introduced at the end of each relocated portion so that mile posts on the remainder of the route within the county will remain unchanged.

Programmed Project – A programmed improvement or action is a project in a near-term programming document identifying funding amounts by year, such as the State Transportation Improvement Program or the State Highway Operations and Protection Program.

Route Designation – A route's designation is adopted through legislation and identifies what system the route is associated with on the State Highway System. A designation denotes what design standards

should apply during project development and design. Typical designations include but not limited to National Highway System (NHS), Interregional Route System (IRRS), and Scenic Highway System.

Rural – Fewer than 5,000 in population designates a rural area. Limits are based upon population density as determined by the U.S. Census Bureau.

Segment – A portion of a facility between two points.

System Operations and Management Concept – Describes the system operations and management elements that may be needed within 20-25 years. This can include Non-capacity increasing operational improvements (Auxiliary lanes, channelization's, turnouts, etc.), conversion of existing managed lanes to another managed lane type or characteristic (e.g. HOV lane to HOT lane), TMS Field Elements, Transportation Demand Management, and Incident Management.

Transportation Demand Management (TDM) – Programs designed to reduce or shift demand for transportation through various means, such as the use of public transportation, carpooling, telework, and alternative work hours. Transportation Demand Management strategies can be used to manage congestion during peak periods and mitigate environmental impacts.

Transportation Management System (TMS) – Is the business processes and associated tools, field elements, and communications systems that help maximize the productivity of the transportation system. TMS includes, but is not limited to, advanced operational hardware, software, communications systems, and infrastructure, for integrated Advanced Transportation Management Systems and Information Systems, and for Electronic Toll Collection System.

Urban – 5,000 to 49,999 in population designates an urban area. Limits are based upon population density as determined by the U.S. Census Bureau.

Urbanized – Over 50,000 in population designates an urbanized area. Limits are based upon population density as determined by the U.S. Census Bureau.

Vehicle Miles Traveled (VMT) – Is the total number of miles traveled by motor vehicles on a road or highway segments.

Appendix B

RESOURCES

California Department of Transportation: *District 8 District System Management Plan*, December 2011.