



Transportation Concept Report

State Route 124
District 10
October 2015



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California Department of Transportation

*Provide a safe, sustainable, integrated, and efficient transportation system
to enhance California's economy and livability.*

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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) (Government Code §65086) by evaluating conditions and proposing enhancements to the SHS. Through System Planning, Caltrans focuses on developing an integrated multimodal transportation system that meets Caltrans' goals of safety and health; stewardship and efficiency; sustainability, livability and economy, system performance, and organization excellence.

The System Planning process comprises four parts: the District System Management Plan (DSMP) and project list, the 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 project list is a list of planned and partially programmed transportation projects used to recommend projects for funding. The TCR is a planning document that identifies the existing and future route conditions as well as future needs for each route on the SHS. The CSMP is a 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, and partner, 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 California Government Code §65086 and as necessitated by the 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,

STAKEHOLDER PARTICIPATION

The State Route (SR) 124 TCR employed an outreach strategy consistent with local Metropolitan Planning Organization (MPO) and Regional Transportation Planning Agency (RTPA) outreach conducted with the development of the Overall Work Program (OWP). This strategy avoids duplicative effort, and reduces public confusion as to the aims of local and regional transportation planning. As the OWP intends to meet federal requirements outlined in 23 CFR 450.314, and in the Moving Ahead for Progress in the 21st Century Act (MAP-21), external stakeholder needs can be addressed by local partner outreach efforts related to the OWP. Development of the TCR includes initial outreach to internal partners—these would be traffic operations, traffic safety, project management, maintenance, environmental support, as well as others.

Concept Summary

Concept Summary					
Segment	Segment Description	Existing Facility	20-25 Year Capital Facility Concept	20-25 Year System Operations and Management Concept	Post-25 Year Concept
1	SR 88 to Brickyard Road	Conventional Highway	Conventional Highway	Preservation and Maintenance	Expressway
2	Brickyard Road to East JCT SR 104	Conventional Highway	Conventional Highway	Preservation and Maintenance	Expressway
3	W JCT SR 104 to Raymond Road	Conventional Highway	Conventional Highway	Preservation and Maintenance	Expressway
4	Raymond Road to SR 16	Expressway	Expressway	Preservation and Maintenance	Expressway

Concept Rationale

Segments 2 and 3 of SR 124 will be deficient by 2035. Both segments are within the city limits of Lone, and their deficiency reflects a residential street configuration with numerous driveways and reduced speed limits. The future forecast volumes for the two segments likely overstate the potential for traffic volume growth, particularly for Segment 4 which has one short street access (Raymond Road) that lacks connection to future development.

This presumes an accurate future forecast. The current Amador County Regional Transportation Plan (RTP) projected a local population for 2010 of 7,782 for Lone and 44,335 for the County as a whole,⁴ which appears to be an underestimate for Lone, as the 2010 population was 7,918 (which includes the Mule Creek Prison population of 3,535), and an over estimate for the County with a population of 38,091 for 2010.⁵ A recent urban growth model (UPLAN) that incorporated current Department of Finance population projections for Amador County, projects a growth in Average Annual Daily Traffic (AADT) of 1.06 percent for SR-124, about a third lower than projected in the 2004 model.⁶ Recent changes in the prison population of Mule State Prison lead the change in 2015 population⁷—the prison population is currently 2,912, which is a decrease of 871. The current population of Lone is 6,956, which reflects an additional loss of 91, while the current county population is 36,519, which reflects an additional county wide loss of 701.⁸

The City of Lone performs as the traffic generator and attractor, and directly influences changes in traffic volume on SR 124. Half of the workers living in Lone work within Lone, with about 30 percent working elsewhere in Amador County.⁹ It may be assumed that much of the future growth in traffic originating from Lone will be interregional, and would likely be equally split between Sacramento and San Joaquin Counties. The additional trips to San Joaquin County would be on SR 124. Local and interregional traffic originating from SR 124 north of Lone would likely originate from Plymouth and Volcano, where most work commutes access the Sacramento region via SR 16 or SR 49, and the volume generated is slight.

⁴ Amador County Transportation Commission, Regional Transportation Plan (RTP), 2004 p. iv-2

⁵ US Census, 2010; Department of Corrections and Rehabilitation, Weekly Population Report for April 28, 2010, May 5, 2010

⁶ UPLAN ver. 4.0, Draft 2014 Amador County RTP Technical Appendices p. 41; 44

⁷ Department of Corrections and Rehabilitation, Weekly Population Report for June 10, 2015

⁸ California Department of Finance, 2015

⁹ Census Transportation Planning Products—Five Year Database 2005-2010 (CTPP)

EXECUTIVE SUMMARY

This TCR reports the evaluation and analysis of SR 124 for the period of 2013 to 2035. The effort is to assess the progress made in meeting the needs of regional and interregional users of the SHS, both in providing the necessary capacity to move people and goods quickly, and in upgrading the facilities' operation in order to provide the safest and most efficient means of travel, all within Caltrans' commitment to sustain and maintain the existing system.

SR 124 links SR 88 to SR 16 as a minor arterial in Amador County. Although SR 124 is on the Freeway and Expressway System (FES), it is not included in the Interregional Road System (IRRS), and is not a federal highway. SR 124 does not perform as an important goods movement route. A portion of SR 124 is a terminal access (TA) truck route consistent with the provisions of the Surface Transportation Assistance Act (STAA) of 1982 between SR 88 and a driveway 0.2 miles north of Buena Vista Road, but is an advisory truck route along the segment west of the Owens Corning plant driveway, through the City of Lone to the northern city limits. Beyond the city limits the route is designated appropriate for use by California legal trucks. SR 124 provides a work commute route for residents of Lone into San Joaquin County via SR 88.

SR 124 being on the FES requires that the route be an access controlled facility. Currently, the segment of the route north of the City of Lone has access control, but is not currently built to expressway standards. The rest of the route is built to conventional highway standards. Current design practices require replacement of conventional highway facilities with expressway if a new alignment.

SR-124 accesses Lone, a city of 6,763.¹ Only half of the population lives in a household setting and can engage in travel or work.² As a commute generator, most work trips out of Lone are local or within Amador County, with the primary interregional work commute to San Joaquin County (Stockton and Lodi)³.

Base year (BY) traffic volume (2014) on SR 124 is light compared to other routes on the SHS in District 10. Rural Segments 1 and 4 retain a concept LOS of D from the BY to the Horizon Year (HY) of 2035, while the two urban Segments 2 and 3 retain a deficient LOS of E throughout largely due to the reduced speed limit of 25 Miles Per Hour (MPH) compared to 55 MPH on Segments 1 and 4.

As future conditions suggest a route that remains deficient due to constraints other than traffic growth, system expansion does not appear merited. Operational actions limited to the two deficient urban segments are unlikely to effectively improve LOS or lessen delay as these are for the most part residential streets with reduced speed limits to reduce adverse effects due to truck traffic.

¹ California Department of Finance, May 2015, "Table E-4: Population Estimates for Cities, Counties, and State, 2011-2015 with 2010 Census Benchmark".

² United States Department of the Census 2010 reports 52 percent of population is institutionalized, most at either Mule Creek Prison or Preston School.

³ The census does not report any commuting to work trips from Plymouth, Fiddletown or Volcano that may take SR 124

Given the underlying trip distribution and trip assignment, growth in traffic volumes on SR 124 depend upon population growth in lone, and would affect Segments 1 and 2. Contemporary population growth has been slightly negative, and the forecast growth in traffic volumes for the HY have not altered the existing LOS, a need for increased capacity upon the facility does not appear warranted at this time.

System preservation and maintenance of the existing SR 124 will remain the primary planning emphasis for the period between 2015 and 2035. This should include no modification to existing access control in the corridor as this may adversely affect traffic conditions. The relative insignificance of SR 124 compared to other routes for purposes of commuting and goods movement, with the resultant lower emphasis in both State and local planning, has led to reduced outlays of public monies towards improving the route. Currently, there are no projects in the District 10 Status of Projects or in the Amador County Regional RTP that concern SR 124.¹⁰

Although solutions for segments with deficient LOS often include increasing capacity or operation improvements, it may not be the case for SR 124. Posted speed limits well below the optimal 55 MPH speed limit have resulted in deficient LOS for segments within the City of lone (Segments 2 and 3).

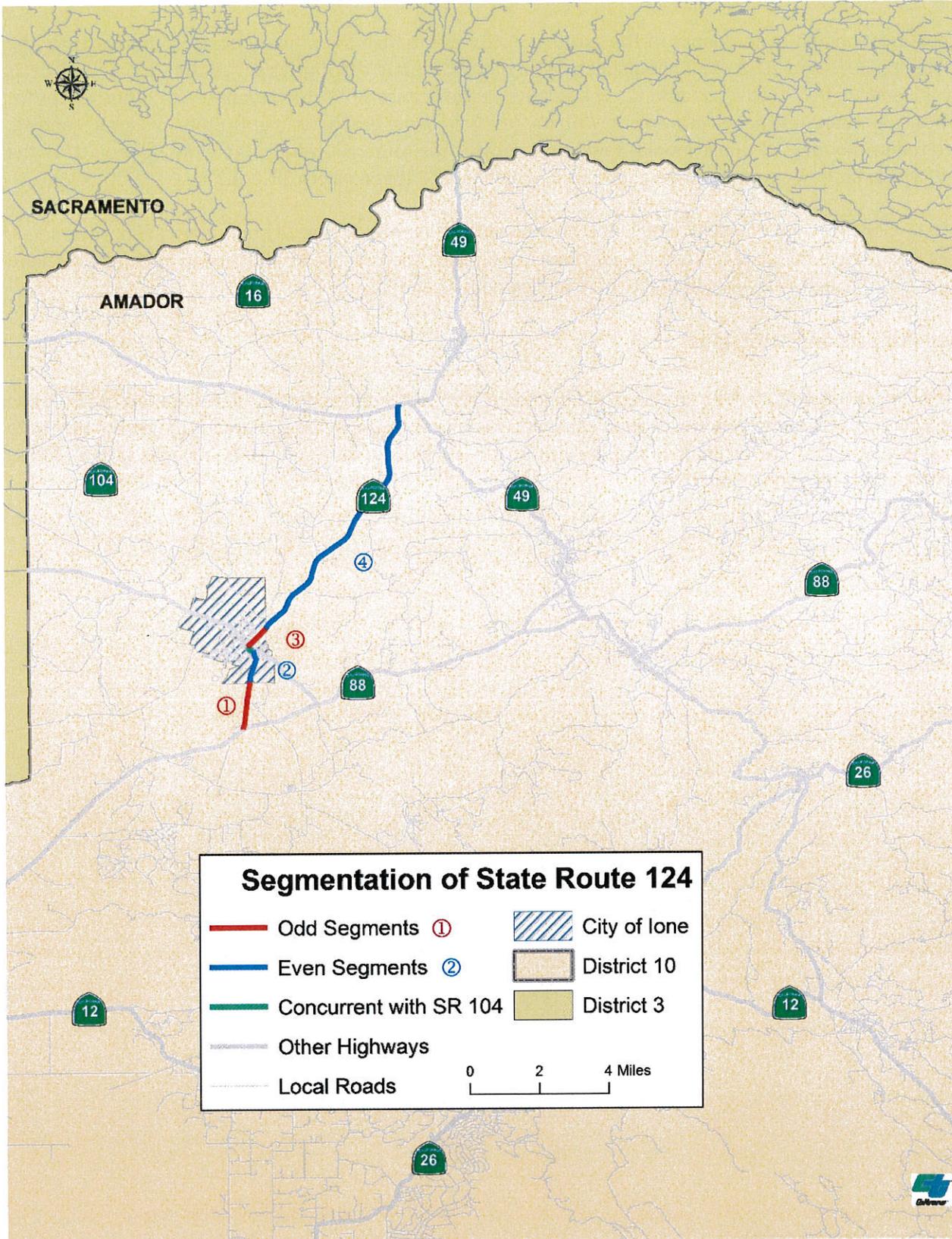
Proposed Projects and Strategies

Operational improvements such as an access management plan may address further deterioration of LOS upon Segment 1 (which is currently operating within concept LOS), but would be inappropriate for the rest of the route since Segments 2 and 3 are residential streets with on-street parking, and numerous driveways; and, access control is already in place on Segment 4.

¹⁰ Status of Projects, May 6, 2015; Amador County RTP, 2007

CORRIDOR OVERVIEW

ROUTE SEGMENTATION



Route Segmentation			
Segment	Location Description	County_Route_Beg. PM	County_Route_End PM
1	SR 88 and Brickyard Rd.	AMA_124_0.000	AMA_124_1.370
2	Brickyard Rd. to SR 104	AMA_124_1.370	AMA_124_2.290
3	SR 104 to Raymond Rd.	AMA_124_2.291	AMA_124_R 2.420
4	Raymond Rd to SR 16	AMA_124_R 2.420	AMA_124_R 10.340

Segmentation of SR 124 followed District 10 practice—segments conformed to land use planning agency boundaries, 10 percent or greater changes in daily or peak hour volume, changes in population density (rural versus urban), intersections with other State highways, and changes in truck route designation, and changes in highway facility. However, employing the application of truck route designation would have resulted in splitting Segment 1 into two segments—one long segment based upon an approved terminal access route (approximately 1.35 miles long), and one short segment based upon California Advisory Truck Route, king pin to rear axle 30 feet or less (approximately 0.2 miles long).

Segments 1 and 2 split at Brickyard Road, near the lone city limits. Segment 2 continues north to where it intersects SR 104. SR 124 then runs concurrent with SR 104 to Segment 3. Segment 3 continues north to Raymond Road, at the lone city limits. Segment 4, proceeds from Raymond Road to SR 16.

ROUTE DESCRIPTION

SR 124 conforms to a conventional highway from SR 88 through lone. Past lone, Segment 4 is subject to a freeway agreement, and has access control. SR 124 was created in the period between 1960 and 1965. It was formed by realignment of SR 88 bypassing lone, and assumed the portion of SR 88 that entered lone, and continued upon the old alignment of SR 104 northwards from lone to SR 16. The developed residential context of the route within the City of lone has produced speed limits of 25 to 30 MPH, consistent with local travel use.

Route Location:

Within District 10, SR 124 exists exclusively in western Amador County, and functions as part of the main street serving the City of lone (concurrent with SR 104). The route connects SR 16 and SR 88. The City of lone, established during the Gold Rush, with a downtown historic district reflecting that period, constrains SR 124 goods movement with narrow lanes, close encroachment by buildings on the travel way, and sharp turns such that the roadway cannot accommodate large trucks (those with trailers longer than 30 feet).

In 1926, the highway connecting Amador County to the SHS (Golden State Highway) was in effect. SR 104 from Galt to lone, and following SR 124 to SR 49 west of Plymouth. By 1932, SR 88 is included, and connects lone to Jackson. From this time forward, Legislative Routes (LR) define the original highways in the legislation authorizing the SHS, and were generally in effect prior to 1963. The history of highways serving lone is complex. LR 34, from lone to Dry Creek was the original highway connecting Amador County to the Golden State Highway. After 1926, LR 97 was improved, connecting Lodi to Jackson through lone. The shields identifying these routes were 104 and 88. SR 124 comprises a portion of original LR 97 (SR 88 and SR 104) abandoned when SR 88 bypassed lone. The remnant segment of LR 97 extended from the intersection with the new alignment northwards to LR 54 (SR 16). At lone, LR 97 ran concurrently with LR 34. The original alignment of SR 104 was included in the FES--the segment west of lone (LR 34, which has access control but is not expressway) and the segment east of lone (LR 97, which

has access control and is built to expressway design standards). When the route was renumbered as SR 124, the FES designation now only applies to the LR 97 portion of old SR 88 and old SR 104.

Route Purpose:

SR 124 performs as a local interregional connection for lone, rather than for a larger segment of Amador County. The primary arterials for Amador County are SR 16, SR 49, and SR 88—of these SR 16 and SR 88 provide interregional connections to urban employment centers—Sacramento or Stockton and Lodi. Although SR 124 connects SR 16 to SR 88, it would only ideally support the interregional work commute from Plymouth to Stockton and Lodi. For residents in Amador County that work in Stockton and Lodi, or other employment centers farther to the south or west, the likely travel route is to travel via SR 49 to SR 88 and continue in to SR 99.

SR 124 serves as a minor arterial throughout its route. SR 124 has little serviceability as a goods movement corridor as it is a California legal advisory truck route. The route experiences low traffic volumes, and currently the LOS does not exceed concept except for the two segments within the city limits of lone. There is little need to expand the facility to four lanes, and projections of future growth do not appear to require this.

The low population density along the SR 124 corridor, and its distance from urban employment centers, creates a condition where commuting by a mode other than automobile does not appear to justify expenditures for multimodal improvements. There is one fixed transit route along a portion of the corridor (Segment 2). SR 124 is a Class III bicycle facility; it does not connect into any regional bike lanes other than to those in the City of lone.¹¹ Pedestrian facilities are limited to Segments 2 and 3.¹²

Unlike other routes that serve the Mother Lode, SR 124 lacks the recreational draw for weekend traffic, and is overshadowed by SR 16 and SR 88 which serve important recreation attractors (Shenandoah Valley wine country, Kirkwood Ski Resort, and Grover Hot Springs State Park). Although the history of the development of highways serving Amador County do not suggest this, there may be some utility in developing SR 124 as an alternative route to Lake Tahoe given improvements to facilities on SR 49 in El Dorado County, and improved access to SR 50 in Placerville.

Major Route Features:

SR 124 is a lightly travelled corridor lacking prominent patterns of recreational, commuter, or goods movement traffic.

¹¹ Amador County Bicycle and Pedestrian Plan, 2006, p. 1

¹² Amador County Bicycle and Pedestrian Plan, 2006, p. 1

Route Designations and Characteristics:

Route Designations and Characteristics ¹³				
Segment #	1	2	3	4
Freeway & Expressway System	Yes	Yes	Yes	Yes
National Highway System	No	No	No	No
Strategic Highway Network	No	No	No	No
Scenic Highway	No	No	No	No
Interregional Road System	No	No	No	No
High Emphasis	No	No	No	No
Focus Route	No	No	No	No
Federal Functional Classification	Minor Arterial	Minor Arterial	Minor Arterial	Minor Arterial
Goods Movement Route	No	No	No	No
Truck Designation	TA	California Legal 30 Foot Advisory	California Legal 30 Foot Advisory	California Legal
Rural/Urban/Urbanized	Rural	Urban	Urban	Rural
Metropolitan Planning Organization	N/A	N/A	N/A	N/A
Regional Transportation Planning Agency	ACTC	ACTC	ACTC	ACTC
Congestion Management Agency	N/A	N/A	N/A	N/A
County Transportation Commission	N/A	N/A	N/A	N/A
Local Agency	Amador County	City of Ione	City of Ione	Amador County
Tribes	Buena Vista Rancheria, Ione Band of Miwok Indians, Jackson Rancheria Band of Miwok Indians			
Air District	Amador APCD	Amador APCD	Amador APCD	Amador APCD
Terrain	Flat	Flat	Flat	Rolling

COMMUNITY CHARACTERISTICS

The City of Ione and environs are the only urban area in Amador County designated by the Federal Highways Administration. Its population is 7,918, of which 3,746 live in households, and 4,160 are institutionalized.¹⁴ The 2,946 inmates at the Mule Creek State Prison make up the majority of the institutionalized population¹⁵. The racial composition of the overall population is 73.6 percent White, 10.4 percent African American, 2.2 percent

¹³ Acronyms--RTPA: Regional Transportation Planning Agency; ACTC: Amador County Transportation Commission; APCD: Air Pollution Control District

¹⁴ Census, 2010

¹⁵ CDCR, Monthly Population Report, August 1, 2014:

Native American, 1.4 percent Asian, 0.3 percent Pacific Islander, 8.6 percent other races, and 23.6 percent two or more races. Of the total, 25.1 percent identified themselves as Hispanic or Latino.¹⁶

For the period of 2005-2010, it is estimated approximately 1,105 workers commute from lone. Of these, 480 traveled within lone, with an additional 350 commuting elsewhere in Amador County. Assignment of this population to State Highways that access lone results in 345 traveling by SR-104 East, 100 by SR-104 West, 25 by SR 124 East, and 115 by SR 124 West.¹⁷ The high number of commuters within lone likely work at the correctional facilities (Mule State Prison, Preston School), the local California Department of Forestry and Fire Protection (CDFFP) training facility, or one of the local public schools. Within Amador County, the county seat in Jackson, the Jackson Rancheria Casino, and the numerous retail outlets in Martell are likely commute attractors.

CDCR is proposing expansion of the existing facility at Mule Creek State Prison to better accommodate overcrowding, under a recent court order regarding medical treatment of inmates. The proposed expansion of 1,587 beds should increase the number of personnel at the prison by 375, and would increase the AADT of both SR 104 and SR 124.¹⁸ The work commute is likely to originate from San Joaquin County, Galt, lone, Jackson, and locations in eastern Amador County.

LAND USE

Land Use	
Segment	Place Type ¹⁹
1	Rural Settlement and Agricultural Lands (5B)
2	Corridors (4B)
3	Corridors (4B)
4	Rural Settlement and Agricultural Lands (5B)

Land use along SR 124 is managed by two general plans (GP). The Amador County GP addresses Segments 1 and 4. These areas are underdeveloped, employed for open space, mineral extraction, and farming (primarily grazing) with interspersed residential parcels. The segments in this area function largely as expressways, though they may not meet expressway design standards. These land uses pose little challenge for either expansion or modifications to the existing facility as to either the costs for improvements, or to increase the number of or intensity of nuisances to human populations. The City of lone GP addresses Segments 2 and 3. These areas are developed, mostly as residential areas, though some commercial uses are evident. Here SR-124 functions as a residential collector with low speed limits and narrow lanes. The land uses in this area pose significant challenges to expansion or modification to the existing facility, as right of way acquisition would entail substantial costs, and encroach upon an historic district--downtown lone. Place type classification indicates conditions unamenable to smart mobility improvements.

No approved or tentative development parcel maps are reported along SR 124's segments. The Wildflower Development along SR 104 may adversely affect traffic on SR 124 due to its approval being after the development of the Traffic Demand Model that forecast traffic volumes.

¹⁶ Census, 2010.

¹⁷ CTPP, the numbers obtained (840) exceed those of the Amador County Short-Range Transit Development Plan (596), 2014-2019 p. 17

¹⁸ California Department of Corrections and Rehabilitation (CDCR), (Jan 2 2014) press release, <http://cdcrtoday.blogspot.com/2014/01/cdcr-to-build-new-housing-units-at-two.html>

¹⁹ Smart Mobility Framework, 2010

SYSTEM CHARACTERISTICS

Systems Characteristics ²⁰				
Segment #	1	2	3	4
Existing Facility				
Facility Type	C	C	C	E
General Purpose Lanes	2	2	2	2
Lane Miles	2.74	1.84	0.258	15.84
Centerline Miles	1.37	0.92	0.129	7.92
20-25 Year Concept Facility				
Facility Type	C	C	C	E
General Purpose Lanes	2	2	2	2
Lane Miles	2.74	1.84	0.258	15.84
Centerline Miles	1.37	0.92	0.129	7.92
Post 25 Year Facility				
Facility Type	E	E	E	E
General Purpose Lanes	4	4	4	4
Lane Miles	5.34	3.68	0.516	31.68
Centerline Miles	1.37	0.92	0.129	7.92
ROW Needs	50-75 ft.	50-75 ft.	50-75 ft.	50-75 ft.
TMS Elements				
TMS Elements (BY)	TMS			TMS
TMS Elements (HY)	TMS		TMS	TMS
	EMS		EMS	
	HAR		HAR	

As a route on the FES and serving as a local street in a town, SR 124 possesses two distinct facilities—a rural expressway and an urban conventional highway. As one of the few highways in District 10 that is on the FES but not the IRRS, SR 124 has a concept facility of expressway with access control, but has a concept LOS of D. Only Segment 4 reflects this characteristic. Expansion of Segments 1 through 3 will likely require new alignments built to expressway design. Conditions on SR 124 do not appear to require auxiliary or managed use lanes for the period under consideration. Light interregional travel along with light traffic volumes on the facility correlates with a general absence of multimodal functionality and connectivity with the exception of transit. Integration of ITS detectors and other elements into the Performance Measurement System has been underway.

BICYCLE FACILITY

For SR 124, the bicycle facility for all segments is an unsigned Class III. Proposed facilities are identified for Segment 2 as a Class II bicycle lane; and for Segment 3 to have parallel Class I and Class II facilities that integrate with the local bicycle network in lone.²¹

Integration of the SR 124 corridor into the local regional bicycle network appears well along, there remains a need to improve the regional and the interregional connections. However, SR 124 probably plays a small role in regional and interregional work commutes, as well as recreation and tourism outside of lone, that attention to developing the bicycle network would probably need to better address connectivity to SR 16 and SR 88, and with SR 49 from those two routes.

²⁰ Abbreviations-- 2-E: two lane expressway; 2-C two lane conventional highway; 4-E four lane expressway; TMS: traffic monitoring station

²¹ City of Lone General Plan Circulation Element (2009) p. 4-5

Bicycle Facility							
Segment	State Bicycle Facility						
	Seg ID	Post Mile	Location Description	Bicycle Access Prohibited	Facility Type	Outside Paved Shoulder Width	Posted Speed Limit
1	1.0	0.0-1.37	On route	No	III	0-8	55
2	2.0	1.37-2.29	On route	No	III	4-8	25
3	3.0	2.291-R2.42	On route	No	III	4-8	25
4	4.0	R2.42-R10.34	On route	No	III	8	55

PEDESTRIAN FACILITY

PEDESTRIAN FACILITY								
Segment	Segment ID	Post Mile	Location Description	Pedestrian Access Prohibited	Sidewalk Present	Sidewalk Width	Crossing Distance	Facility Description
1	1	Rural route, no pedestrian facilities						
2	2	1.37-2.29	Intermittent	No	Yes	N/A	44 feet	Paved shoulder
3	3	2.291-R2.42	Both sides	No	Yes	4 to 6 feet	44 feet	Concrete
4	4	Rural route, no pedestrian facilities						

Developed pedestrian facilities are found in the City of Ione. Sidewalks are intermittently present. Crosswalks occur at most intersections. There are no current efforts to improve pedestrian access along the route, though the City of Ione is seeking funding for a sidewalk gap closure project between Main Street and Howard Park. Upgrade and installation of Americans with Disabilities ACT compliant ramps may be needed.

TRANSIT FACILITY

Transit Facility					
Segment	Mode and Collateral Facility	Name	Route End Points	Ridership	Operating Period
1	Local Bus	Rte. 7	Transit Center to Castle Park	6733	0745 to 1649
2	Local Bus	Rte. 7	Transit Center to Castle Park	6733	0745 to 1649
3	No Transit Service				
4	No Transit Service				

Route 7, a fixed service route provided by Amador Transit, completes three daily round trips from the Sutter Creek Transit Center to Castle Park in Ione. Only the Church Street and Main Street stop is on SR 124. Transit service travels from Ione via SR 124 between Main Street and Buena Vista Road (Segments 1 and 2). A single locally

maintained park and ride lot is located off of Segment 2 near downtown lone. From the Sutter Creek Transit Center, connections may be made to five other transit routes, including interregional transit service to Sacramento. Currently, service times do not readily coincide with the standard work schedule (8:00 A.M. to 5:00 P.M), the emphasis is to provide local transit needs within lone, along with a regional and interregional commute. Currently, the Route 7 bus contributes approximately 10 percent of the total ridership on Amador Transit (The share of riders originating from lone may be even higher given transfers to the Sacramento or Calaveras connecting transit lines).²²

FREIGHT

SR 124 is among three routes in District 10 that have insignificant roles for goods movement on the SHS. SR 124 is a TA truck route from SR 88 to 0.2 miles east of Buena Vista Road. Past the driveway access to the Owens Corning facility, the route is a California Advisory Truck Route for trucks with trailers 30 feet or longer until it reaches the northern lone city limits. At the city limits, SR 124 is a California Legal Truck Route north to SR 16. The percentage of trucks to AADT (ranging from 2050 to 6,700 vehicles per day) is approximately 5 to 8 percent (ranging from 103 to 590 trucks per day) with approximately 2 to 5 percent (ranging from 34 to 331 vehicles per day) reported as being five axle or greater.²³ Possible truck destinations are Owens Corning plant, commercial businesses in lone, and several quarries on SR 104. No manufacturing or warehousing operations are reported to exist in lone.

ENVIRONMENTAL CONSIDERATIONS

Environment Considerations										
Segment	Cultural Resources	Floodplain	Hazardous Materials	Naturally Occurring Asbestos	Air Quality				Waters and Wetlands	Special Status Species
					Ozone	Particulate Matter		CO		
						2.5	10			
1	High	100 year floodplain	Low	Moderate	Non-attainment	Non-attainment	Non-attainment	Non-attainment	Moderate	Low
2	High	100 year floodplain	Low	Moderate	Non-attainment	Non-attainment	Non-attainment	Non-attainment	Moderate	Low
3	High	100 year floodplain	Low	Moderate	Non-attainment	Non-attainment	Non-attainment	Non-attainment	Moderate	Low
4	High	100 year floodplain	Low	Moderate	Non-attainment	Non-attainment	Non-attainment	Non-attainment	Moderate	Low

The environmental context for SR 124 reflects a transportation corridor located within a riparian zone along with a settlement history extending into prehistory. lone rests within a floodplain for both Jackson and Dry Creeks. As development in California has disproportionately affected riparian areas and wetlands, several species of special concern occur in these contexts—typically fairy shrimp, tiger salamanders, red legged frogs, and blue oaks. Historically, travel ways extend through the State’s history, a highway often follows what were foot trails. Given their history, highways also positively correlate with settlements patterns--Native American villages, missions, land grants, trading posts, and post Gold Rush settlements. In development of projects, any study to evaluate the presence of and mitigation for special status species, wetlands impacts, and cultural resources would increase projects costs and schedules. Additionally, hazardous materials issues center upon underground storage tanks

²² See Amador County Short-Range Transit Development Plan, 2014, Table 10, p.25

²³ Truck data available for 2011, with percentages extrapolated to 2012 traffic volumes.

associated with the development of lone; and, deposition of heavy metals and naturally occurring asbestos in soils and flood deposits from upland mining activities and erosion.

CORRIDOR PERFORMANCE

Corridor Performance				
Segment Number	1	2	3	4
Basic System Operations				
AADT (BY)	5850	6700	2900	2050
AADT (HY)	7385	10425	11600	7575
VMT (BY)	16029	12328	749	32472
VMT (HY)	20235	19182	2993	119988
Truck Traffic				
Total Average Annual Daily Truck Traffic (AADTT) (BY)	492	590	145	103
Total Trucks (% of AADT) (BY)	8.4%	8.8%	5%	5%
5+ Axle Average Annual Daily Truck Traffic (AADTT) (BY)	296	331	48	34
5+Axle Trucks (as% of AADT) (BY)	5.1%	5.0%	1.6%	1.6%
Peak Hour Traffic Data				
Peak Period Length	15-30 min	15-30 min	15-30 min	15-30 min
Peak Hour Direction:	North	North	North	North
Peak Hour Time of Day	PM	PM	PM	PM
Peak Hour VMT (BY):	973	718	83	3881
Peak Hour VMT (HY):	2105	1995	3111	12479

The precision and accuracy of three variables underlie the accuracy of measurement of corridor performance. These are the peak hour factor (PHF), the proportion of Peak Hour to AADT (K), and the Directional Split (D). Over time, the expectation on highways on the SHS is to have a PHF within a range of 0.88 to 0.92, and to have that PHF increase through time with local development and population growth; to have an increasing AADT; to have a decreasing K (e.g. the rate of growth for AADT will exceed that for peak hour traffic volumes, typically because of the peak period of travel exceeding one hour (currently for SR 124, K equals 10.4 percent); and, to have a decreasing D. For SR 124 most of these variables have followed this general pattern, but there has been great variability in the measurement of D over the last twenty years. In the present year (2013) measurements returned a value of 0.86, which exceeds values obtained in the previous decade, and a value closer to previous values (0.65), was employed for 2035 forecast.

A segment's performance is often assessed by its LOS. LOS employs a qualitative measure of traffic congestion that relies in part upon both subjective, though repeatable observations of congestion as well as the ratio of the volume of traffic to the full capacity of a highway lane at a particular speed (V/C). Congestion is better measured by the underlying quantitative ratio of volume to capacity (V/C). Because of this, LOS best serves as a comparison to a performance standard such as concept LOS, rather than as a performance measure as the V/C might be quite variable between two segments though both share the same LOS.

With the SR 124 corridor subject to a system management and preservation strategy, without any proposed operational or capacity increasing projects for the planning period between 2014 and 2019,²⁴ V/C would have little value as a performance measure. Under these conditions, V/C can only measure changes in traffic conditions over time, rather than evaluate the effectiveness of particular undertakings or strategies. For SR 124 is there is no projected change in LOS between the BY and the HY, so any anticipated changes in V/C would be small and possibly insignificant.

²⁴ 2019 is the presumed year for an update to this TCR consistent with a 2040 horizon year, assuming a five year period between RTP updates for RTPAs.

Although LOS has been employed as a State standard by which congestion impacts may be measured for the California Environmental Quality Act (CEQA), the Federal Highway Administration also emphasizes delay as an appropriate highway performance measure. Both of these standards might reflect initial conditions of uninterrupted flow consistent with freeways and expressways, rather than conventional highways, and of speed limits in the range of 40 to 55 MPH. There may also be an underlying assumption that no through trips occur within the segment analyzed (e.g. interregional traffic that includes stops at markets, schools, service stations etc.) that affect travel time.

The absence of detectors in the SR 124 corridor limit the ability to assess delay or measure bottlenecks.

Nothing remarkable may be stated about annual volumes or daily peak hours. These are consistent with a rural route serving a small population center. Highest volumes associate with segments that serve or connect to schools, post offices, and grocery markets, and may show peak hours outside of regular commute times. For 2013, the peak hour was obtained at the Junction of SR 104 with West SR 124, and measured the portion of the portion of SR 124 concurrent with SR 104 that includes a portion of the downtown area. The record reported peaks at 7 AM and 4 PM on weekdays.²⁵

²⁵ Refer to Segment 6 in the SR 104 TCR, 2015.

KEY CORRIDOR ISSUES

To summarize from the findings of this TCR, the key corridor issues are:

- As a component of SHS, SR 124 has a minor role facilitating interregional travel and goods movement.
- It is questionable that the future facility of SR 124 will require upgrade, or that SR 124's role in the SHS will change.

CORRIDOR CONCEPT

CONCEPT RATIONALE

Forecast growth in traffic volumes for SR 124 indicates a need for expansion of the facility to four lanes upon segments serving the City of Lone (Segments 2 and 3). Expansion is constrained by the surrounding housing and commercial development, to where a two lane bypass outside the current city limits should be a consideration. However, there are no planned or programmed capital projects to address this need.

No new future facility expansion is proposed.

Performance deficiencies point to the same urban segments as needing operational improvement. Posted speed limits of 25 MPH hinder interregional travel, and can only be elevated to more appropriate speeds with route relocation. An access management plan would not improve conditions along the affected corridor, as access has already been developed and maximized along the route. The current LOS on the remaining segments will not exceed concept LOS for the period 2014 to 2035, and may continue to remain within tolerance, so that an access management plan may not be needed. A future design of expressway would eliminate the need for an access management plan as access rights would be purchased and controlled.

PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES

As of fall 2015, there are no programmed projects for SR 124 in the District 10 Status of Projects. There are no projects for SR 124 in the Amador County RTP.

Deficient segments possess conditions that cannot achieve concept if the current alignment is retained. Concept LOS is achieved with a transportation corridor in which traffic flow is uninterrupted, and moving at speeds above 40 MPH. Current deficient segments have interrupted traffic flow with posted speed limits well below 40 MPH.

Local pedestrian improvements to address gaps appear highly desirable, and are consistent with the Departments commitment to complete streets. The City of Lone has undertaken one project to close a gap between Main Street and Howard Park, but have not yet been successful in obtaining funding.

APPENDIX

APPENDIX A

GLOSSARY OF TERMS AND ACRONYMS

Acronyms

AADT: Annual Average Daily Traffic
ACTC: Amador County Transportation Commission
ADA: Americans with Disabilities Act of 1990
ADT: Average Daily Traffic
ARB: Air Resources Board
BY: Base Year
CALTRANS: California Department of Transportation
CDCR: California Department of Corrections and Rehabilitation
CDFFP: California Department of Forestry and Fire Prevention
CFR: Code of Federal Regulations
CEQA: California Environmental Quality Act
CO: Carbon Monoxide
CMA: Congestion Management Agencies
CSMP: Corridor System Management Plan
DSMP: District System Management Plan
EMS: Electronic Message Sign
FES: Freeway and Expressway System
FHWA: Federal highway Administration
GP: General Plan
HAR: Highway Advisory Radio
HOT: High occupancy toll lane
HOV: High occupancy vehicle lane
HY: Horizon Year
IRRS: Interregional Road System
ITS: Intelligent Transportation System
K: ratio of peak hour volume to AADT
LOS: Level of Service
LR: Legislative Route
MAP-21: Moving Ahead for Progress in the 21st Century, current federal highway transportation legislation
MPH: Miles per Hour
MPO: Metropolitan Planning Organization
N/A: Not Available, or Not Applicable
NEPA: National Environmental Policy Act
NHS: National Highway System
NOA: Naturally Occurring Asbestos
NTN: National Truck Network
OWP: Overall Work Program
PHF: Peak Hour Factor
PID: Project Initiation Document
PSR: Project Study Report
RTIP: Regional Transportation Improvement Program
RTP: Regional Transportation Plan
RTPA: Regional Transportation Planning Agency
RW: Right of Way

SHOPP: State Highway Operation Protection Program
SHS: State Highway System
SR: State Route
STAA: Surface Transportation Assistance Act
STIP: State Transportation Improvement Program
TCR: Transportation Concept Report
TDM: Transportation Demand Management
TMS: Transportation Management System or Traffic Monitoring Station
TSN: Transportation System Network
UPLAN: name of a planning software implemented at University of California at Davis
US: United State Highway
V/C: Volume (of traffic) to Capacity
VMT: Vehicle Miles Traveled

Definitions

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.

Base year – The year that the most current data is available to the Districts.

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.

Bottlenecks – A bottleneck is a location where traffic demand exceeds the effective carrying capacity of the roadway. In most cases, the cause of a bottleneck relates to a sudden reduction in capacity, such as a lane drop, merging and weaving, driver distractions, a surge in demand, or a combination of factors.

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 LOS 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 fiscally 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 as informational purposes and not analyzed in the TCR.

Facility Concept – Describe 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.

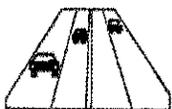
Headway – The time between two successive vehicles as they pass a point on the roadway, measured from the same common feature of both vehicles.

Horizon Year – The year that the future (20-25 years) data is based on.

Intermodal Freight Facility – Intermodal transport requires more than one mode of transportation. An intermodal freight facility is a location where different transportation modes and networks connect and freight is transferred (or “transloaded”) from one mode, such as rail, to another, such as truck.

ITS – Intelligent Transportation System 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.

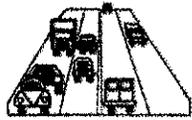
LOS – Level of Service is a qualitative measure describing operational conditions within a traffic stream and their perception by motorists. A LOS definition generally describes these conditions in terms of speed, travel time, freedom to maneuver, traffic interruption, comfort, and convenience. Six levels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



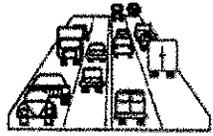
LOS A describes free flowing conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway.



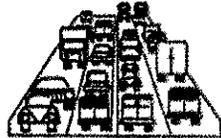
LOS B is also indicative of free-flow conditions. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.



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 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.

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

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

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 6 percent and 10 percent of the ADT. The lower values are generally found on roadways with low volumes.

Peak Period – Is a part of the day during which traffic congestion on the road is at its highest. Normally, this happens twice a day, once in the morning and once in the evening; the time periods when the most people commute. Peak Period is defined for individual routes, not a District or statewide standard.

Performance Measurement System--Integration of ITS with real time data acquisition and data storage to assess SHS performance over time.

Planned Project – A planned improvement or action is a project in a fiscally 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 – 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. Milepost values usually increase from south to north or west to east depending upon the [general direction](#) the route follows within the state. The milepost 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, "milepost equations" are introduced at the end of each relocated portion so that mileposts 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.

Railroad Class I – The Surface Transportation Board (STB) defines a Class I railroad in the U.S. as a carrier having annual operating revenues of \$250 million or more. This class includes the nation’s major railroads. In California, Class I railroads include Union Pacific Railroad (UP) and Burlington Northern Santa Fe Railway (BNSF).

Railroad Class II – STB defines a Class II railroad in the U.S. as having annual carrier operating revenues of less than \$250 million but more than \$20 million. Class II railroads are considered mid-sized freight-hauling railroad in terms of operating revenues. They are considered “regional railroads” by the Association of American Railroads.

Railroad Class III – Railroads with annual carrier operating revenues of \$20 million or less. The typical Class III is a short line railroad, which feeds traffic to or delivers traffic from a Class I or Class II railroad.

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), 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.

TDM – Transportation Demand Management 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.

TMS – Transportation Management System 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.

VMT – Is the total number of miles traveled by motor vehicles on a road or highway segments.