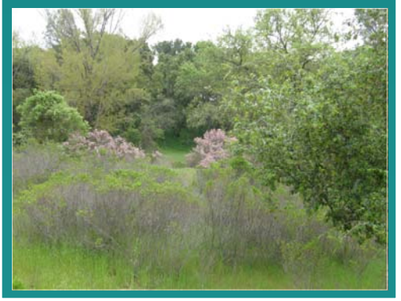
SR16

FEBRUARY 2012 | FINAL



CALTRANS DISTRICT 10

State Route 16

TRANSPORTATION CONCEPT REPORT

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INTRODUCTION TO THE TRANSPORTATION CONCEPT REPORT

What is a Transportation Concept Report?

A Transportation Concept Report (TCR) is a long-term planning document that each Caltrans District prepares for every State highway, or portion thereof, in its jurisdiction, and is where long-range corridor planning in Caltrans usually begins. The purpose of a TCR is to determine how a highway will be developed and managed so that it delivers the targeted level of service (LOS) and quality of operations that are feasible to attain over a twenty-year period as indicated in the route concept.

The Concept Facility will provide the amount of vehicle-carrying capacity necessary to achieve the Concept LOS and, in some cases, people-carrying capacity will also be incorporated. Auxiliary lanes are not considered a part of the mainline roadway and, therefore, are not included in the number of travel lanes indicated in a concept.

In addition to the 20-year Route Concept, the TCR includes an Ultimate Concept, which is the ultimate goal for the route beyond the twenty-year planning horizon. Ultimate Concepts must be used cautiously however, because unforeseen changes in land use and other variables make forecasting beyond twenty years difficult.

How does the TCR fit in with local and regional planning efforts?

As owner/operator of the State highway system, Caltrans has a duty to establish a long-range vision for its highways and determine overall strategies for their management. This is achieved by taking into consideration the numerous factors encompassed in the human and natural environments in which a particular route exists. During development of a TCR, Caltrans' objective is to have local, regional, private sector, and State consensus on corridor concepts, planning strategies, and improvement priorities.

Whenever the General Plan is updated, State highways within the jurisdiction should be recognized and included in the circulation system. The jurisdiction should also adopt the Concept LOS standard (the minimum level or quality of operations that is appropriate for each route segment and is considered to be reasonably attainable within the 20-year planning period) indicated in the TCR, along with the concept improvements described in the TCR as necessary to meet the Concept LOS. The jurisdiction has the option of adopting a higher LOS standard and acknowledging the inconsistency with the TCR and the associated funding participation limitations by the State for State highway improvements. Typical Concept LOS standards in District 10 are LOS C in rural areas and LOS D in urban areas.

Does the TCR have to be read from cover to cover in order to get pertinent information about a route segment?

Caltrans does not intend for TCRs to be read from cover to cover as one would read a book. Rather, the TCR is a reference document with segment-specific information presented in a concise and readable format that allows the user to easily access, in one place in the document, all the necessary data and information that pertains to a particular segment of the route.

This format creates a certain amount of repetition in the TCR, as the route is divided into segments for analysis. Each segment's Fact Sheet contains a variety of technical, statistical, cultural, environmental and other useful information that provide a deeper understanding of the route and a context for the concepts developed for it.

TCRs also include estimated right-of-way widths, and a scan of environmental resources and issues known to exist in the vicinity of the highway. Right-of-way and environmental information provided in a TCR are relative to the route or route segment and are not to be considered project specific. Precise right-of-way needs and environmental resources cannot be defined until the appropriate environmental and engineering studies are completed.

In the back of the TCR is a glossary of terms and acronyms, and a list of references used to prepare the report.

Concept Improvements

The range of improvements available to achieve a route concept is heavily influenced by environmental, political, and fiscal conditions. In many areas, planned projects are subject to meeting air quality conformity standards. Unanticipated safety projects and routine roadway maintenance are not included in route concept improvements, although both will occur throughout the corridor as needed.

Because a highway is but one part of an interconnected transportation network, District 10 takes a corridor approach to developing TCRs. The corridor may include additional transportation systems, such as bus or rail transit service, bicycle and pedestrian facilities, heavy rail, a seaport, airports, interregional bus service, local roadways, and facilities for neighborhood electric vehicles, used frequently by older citizens for local mobility. All of these systems reduce excess highway demand by providing travelers and shippers of goods with non-highway or non-driving options. Expansion of those that can provide a notable improvement to mobility within the corridor are included as concept improvements.

Where a Concept LOS is F, the TCR recommends general operational improvements and alternate modes of travel as starting places for further study. However, because the number of route segments with a Concept LOS F is expected to increase, operational (that is, non-capacity-increasing) improvements are now the primary strategy for optimizing the operation of the existing highway infrastructure. To fully integrate this strategy, future TCRs will include an operational analysis of heavily-congested urban route segments. The results of this analysis will determine which specific operational improvements will become concept improvements.

District 10 strives to improve the quality and usefulness of its TCRs. Future updates will be expanded to include performance measures and, if available, plans that help incorporate specific, context-sensitive features into highway projects.

The TCR provides long-range system planning for highways, and identifies the potential future need for capacity increasing improvements. Employing Highway Capacity Manual (HCM 2000) methodologies, the TCR projects current traffic volumes twenty years into the future and compares future outcomes with the current facility and Concept LOS, recommends future concept facilities, and defines the Ultimate Transportation Corridor (UTC) needed for the preservation of future right-of-way beyond its twenty year planning horizon.

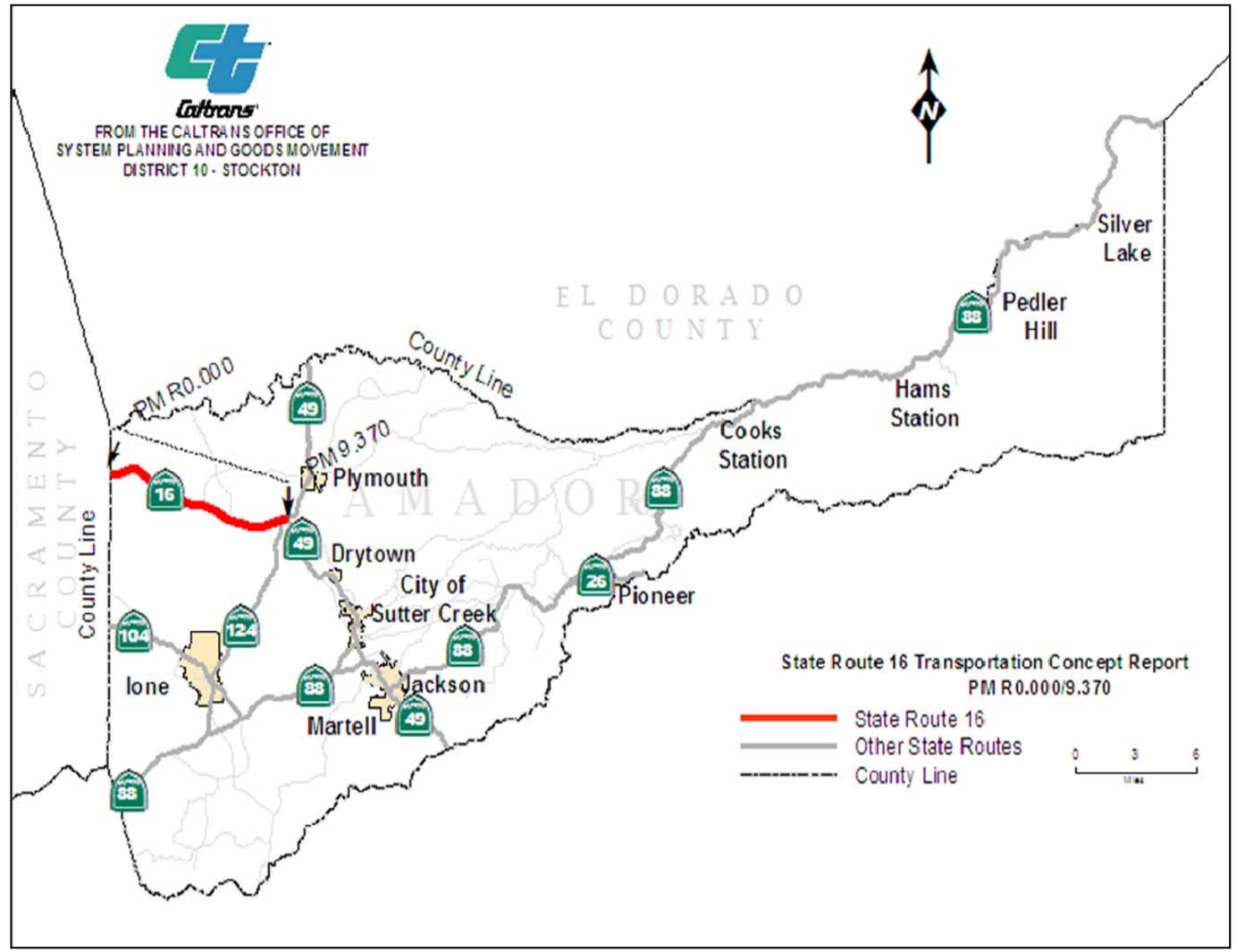
Within District 10, SR 16 is on the Interregional Road System (IRRS), but is not a High Emphasis or Focus Route, and the Concept LOS standard for facilities with this designation is 'C' for rural and 'D' for urban. Identified as a component of the Freeway and Expressway System, SR 16's minimal concept facility is expressway.

The Federal Highways Administration (FHWA) has functionally classified SR 16 as a Minor Arterial that is not on the Federal Highway System (FHS) and is not a component of the Strategic Highway Network (STRAHNET). SR 16 is a terminal access route consistent with the Surface Transportation Assistance Act's (STAA) provisions from PM 0.00 to PM 9.370, and is on the California Legal Truck Network from PM 0.00 to PM 9.370. SR 16 is bicycle and pedestrian accessible, but is not designated or eligible for state or federal scenic highway status.

Current or future LOS for Segment 3 (PM 9.090-9.370) on SR 16 will exceed its Concept LOS by 2030. The Concept Facility to address this deficiency is to construct a four-lane expressway. Current programmed or planned projects include intersection improvements on Segment 2, but there are no currently planned capacity increasing projects on Segments 1 and 3. The anticipated UTC will be similar to the Concept Facility, a four-lane expressway.

Initial planning documents do not consider costs, design, or prioritization, and are subject to refinement and revision as better information or methods become available. The information provided reflects best practices and do not necessarily constitute standards, specifications, or regulations. Every effort has been made by the District 10 Planning Division to ensure the accuracy and precision of the data presented.

Figure 1: Route Location Map



AMADOR COUNTY SUMMARY

Three segments of SR 16 in Amador County were analyzed. The division of these segments followed consideration of changes in traffic volume or its composition, a change in the number of lanes, whether the segment was urban or rural, and changes in transportation planning or land use planning agency. This method deviates from that suggested in HCM (2000) p 21-13, but provides for a more concise characterization for the need for capacity increases, verses operation improvements outside this document's scope.

Application of Highway Capacity Software (HCS version 6.1) consistent with HCM (2010) employed the two-lane highway option and HIGHPLAN (version 5.3). These models should appropriately characterize conditions on all segments within Amador County. SR 16 functions as an interregional route connecting Amador to Sacramento County, yet data portrayed significant local circulation, consideration as to the accuracy of the distribution of traffic volumes in the Caltrans Volumes Book needed evaluation. Although the analysis assumes their accuracy, Segment 3 shows the greatest traffic volume, but is farthest from Sacramento, and some of that volume is assigned to SR 124. Segment 2 shows a substantial reduction in volume from Segment 3, and the process continues through Segment 1 (The expected pattern would be increasing traffic volume with proximity to Sacramento County). However, it should be noted that truck volumes diminish directly as well, though no truck route on Latrobe Road is available to siphon off the truck volume between Segments 2 and 1. To correct for this, analysis of Segment 1 includes the same truck volume as Segment 2.

Consistency between Caltrans District 10 and District 3 planning for SR 16 was assessed. The concept facility of a four-lane expressway for rural segments was found consistent.

SR 16 has two segments, the first runs from SR 20 in Colusa County merging into Interstate 5 in Woodland, the second runs from SR 50 in Sacramento and ends at Central House at SR 49 in Amador County (In 1930, as SR 54, it had a route assignment from Michigan Bar to Central House, and in 1938 from US 50 to Drytown.). Proposed in 1919, the eastern segment was completed in 1933. Within Amador County, for approximately nine miles with a continuous two-lane undivided roadway, SR 16 connects the cities of Plymouth, Sutter Creek, and Jackson (on SR 49) with the Sacramento metropolitan area.

SR 16 along with SR 88 serve as home and work commute route consistent with recent settlement patterns in California reflecting a trade off between lower housing costs at the urban fringe compensated by higher commute costs. However, recent commercial development in Amador County along with the recession may have altered the commute pattern somewhat.

Amador County has a population of 38,091 (2010 Census). The ethnic composition of Amador County's population was 87% White, 2.5% African American, 1.8% Native American, 1.1% Asian, .2% Pacific Islander, 3.8% from other races, and 3.6% from two or more races. Hispanic or Latino of any race was 12.5%. The ethnic composition for Amador County, as compared to the State, shows a higher percentage of White and Native American population, and lower percentages for all other ethnic groups. The median income for a household in the County is $42,280 (2000 Census) which is less than the State median household income of $46,816 (2000 Census).

Amador County's land use pattern includes large areas of forest land, agricultural land for crop production and grazing, rural residences, mineral and resource mining areas, unincorporated communities, and cities, which generally consist of more developed mixes of residential, commercial and industrial uses. The Amador County General Plan does not identify any future planned development projects along SR 16.

SR 16 facilitates several travel modes other than automobile. Amador Transit provides express bus service to Sacramento, and to the interregional transit network (other local transit routes, Amtrak, private bus services, Sacramento Airport). Designated a Class III bicycle lane, SR 16's eight foot shoulders permit bicycle riders sufficient room to travel alongside traffic.

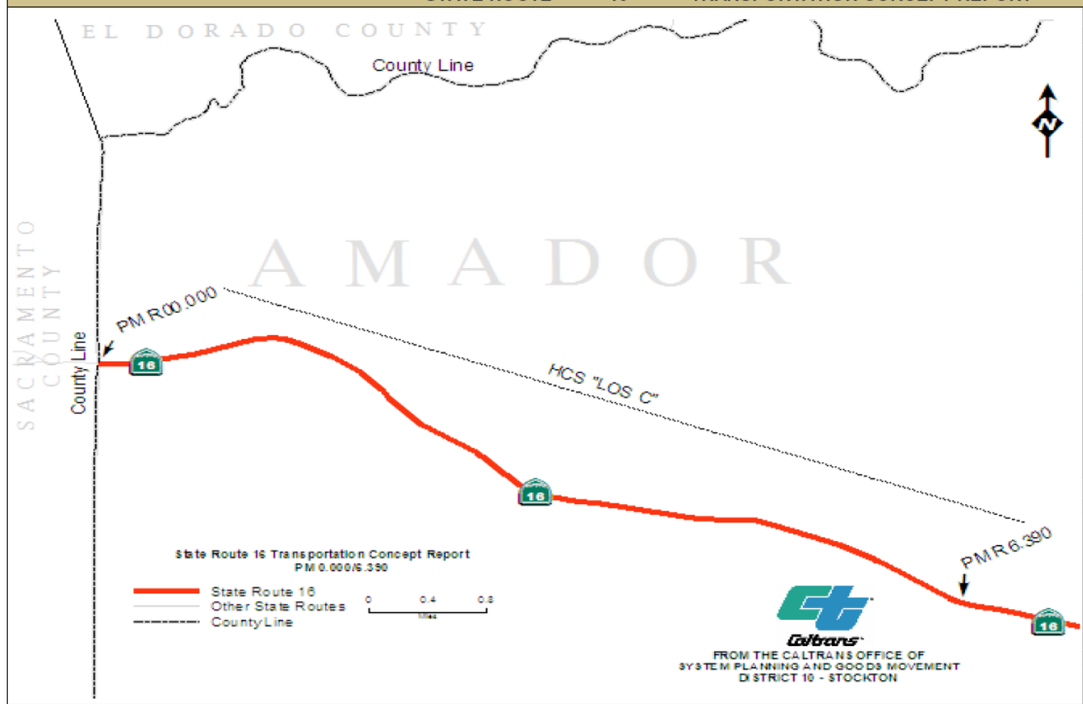
SR 16 plays an important role in the movement of freight from Amador County. As a Terminal Access Route on the National Network, it connects via SR 49 and Plymouth, to the wineries in the Shenandoah Valley. Geometric constraints on SR 49 south of Central House, constrain both truck and freight access to the rest of Amador County to the SR 88 corridor, with the exception of trucks meeting the advisory conditions of SR 49 (Kingpin to Rear axle of 34 feet or less).

Consideration of operational improvements as a means to retain the Concept LOS should be undertaken prior to consideration of capacity increases. Included in this would be the development and implementation of access management plans, particularly for those segments where turning movements play a significant role in accidents or diminished operations.

Current and future LOS on all segments will degrade below the concept LOS. The concept facility to address these deficiencies would be a four-lane expressway. No planned projects to upgrade the future facility exist.

AMADOR COUNTY FACT SHEETS—SEGMENT 1

STATE ROUTE 16- TRANSPORTATION CONCEPT REPORT | AMADOR COUNTY | SEGMENT 1



Segment Location:

Description:	Sacramento County Line to Latrobe Road		
Post Mile:	R0.00-6.390	**Rural/Urban/Urbanized:**	Rural
Length:	6.39	**Within City Limits:**	No
Functional Classification:	Minor Arterial	**Local Planning Jurisdiction:**	Amador County Transportation Commission

Roadbed Information

Number of Lanes:	2-Lane	**Bridge Name:**	Arkansas Creek (PM RO.2)
Terrain:	Rolling	**Lane Width:**	12-20'
Grade %		**Right of Way Width:**	140-350'
Accessible to Bicycles:	Yes	**Shoulder Width:**	8
Bridge Needs		**Median Width:**	00'
Postmile	0.00-6.39	**Distressed Lane Miles**	0.416
Bridge#	#26-0029	**Present Serviceability Rating**	3

Route Designations

Functional Classification:	Minor Arterial	**Scenic Highway (Designated):**	No
Facility Type:	Expressway	**Scenic Highway (Eligible)**	No
Interregional Road System:	Yes	**Trucking Network:**	
High Emphasis Route:	No	**National Network, Terminal Access**	Yes
Focus Route/Gateway Route:	No	**Surface Transportation Assistance Act (STAA)**	Yes
National Highway System	No	**California Legal:**	Yes
Freeway Expressway System	Yes	**Advisory**	No
Strategic Highway Network	No	**Additional Restrictions**	None
Freeway Agreement:	Yes	**Access to Intermodal Freight Facility**	No

Environmental Status

Resource	Level of Impact	Resource	Level of Impact
Flood Plains:	100 yr	**Cultural Resources:**	High
Wetlands:	Low	**Leaking Underground Tanks:**	High
Special Status Species:	Low	**Possible Hazardous Waste:**	High-Lead

Air Quality:

Ozone	Particulate Matter 10 m	Particulate Matter 2.5 m	Carbon Monoxide
Non-attainment□8 hr	Attainment Unclassified	Attainment Unclassified	Attainment Unclassified

Travel Forecast Data

Base Free Flow Speed: 65 MPH

Existing Facility: 2-Lane Expressway

	2009		2020		2030	
	HCS	LOSPLAN	HCS	LOSPLAN	HCS	LOSPLAN
Level of Service:	C	D	D	D	D	D
Volume/Capacity:	0.25	0.33	0.29	0.34	0.32	0.39
Peak Hour Volume:	605		700		785	
Average Daily Traffic:	6,350		7,350		8,250	
Peak Hour Directional Split:	70/30		70/30		70/30	
Truck Volume % of Total ADT:	7.0		7.0		7.0	
Peak Hour % of Trucks:	5.6		5.6		5.6	

Level of Service (LOS) calculated using Highway Capacity Software (HCS+T7F) and Florida Department of Transportation HIGHPLAN 2009 Multilane and Two-Lane Highway Level of Service. Analysis for Conceptual Planning and Preliminary Engineering Version Data: 7/17/2010. All LOS reflects vehicles only. LOS does not reflect multi modal at this time.

Existing Transportation Network

Bicycle Facility		Airports		Intermodal Commuter Facilities	Intermodal Freight Facilities
Yes/No	Yes	Yes/No	None	Yes/No	Yes/No
PM	0.00/6.390	PM		PM	PM
Location	Route	Location		Location	Location
Class	Class III				
LOS	Not assessed				

Pedestrian Facility	Park and Rides		Freight Distribution	Transit Bus
Yes/No	Yes/No	None	Yes/No	Yes/No
PM	PM		PM	PM
Location	Location		Location	Location
LOS				

Traffic Collision Rate (Average collision rates statewide for this type facility)

Actual Accident	Rate	Statewide Average	Rate
Fatal & Injury	0.27	**Fatal & Injury**	0.27
Total	0.49	**Total**	0.60

3-Year Period Evaluated Rates - Rates are incidents per million vehicle miles from 4/1/2007 to 3/31/2010

Segment Route Concept

Concept Level of Service:	C
Concept Facility 2030	4-Lane Expressway
Ultimate Transportation Corridor:	4-Lane Expressway
Comments:	

❶ Programmed / ① Planned Projects

	Post Mile	Location	Description
①	0.00-6.390	There are no planned projects for this segment	
❶	0.00-6.391	There are no programmed projects for this segment	

Intelligent Transportation System (ITS) Elements & Detection

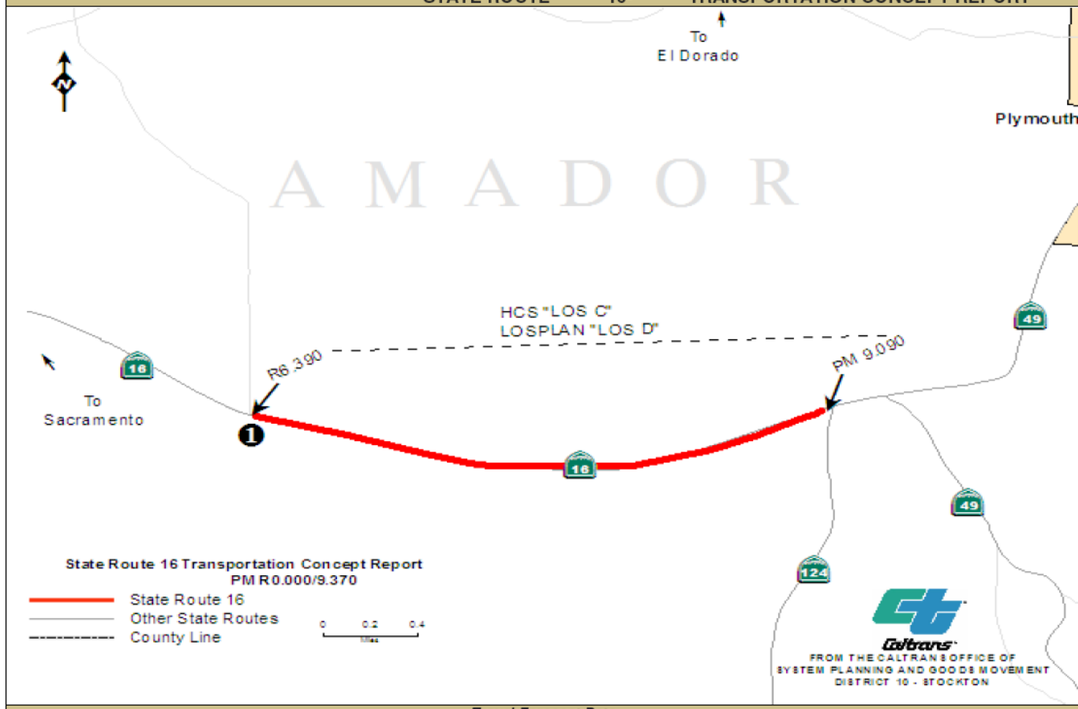
Postmile	ITS Element	Status	Direction
	None in this Segment		

Note: This information is for overview purposes only and does not replace a full report from Right of Way, Environmental, or any other Branch or Division.

Comments

AMADOR COUNTY FACT SHEETS—SEGMENT 2

STATE ROUTE 16- TRANSPORTATION CONCEPT REPORT | AMADOR COUNTY | SEGMENT 2



Segment Location:

Description:	Latrobe Road to SR-124		
Post Mile:	R6.390-9.090	Rural/Urban/Urbanized:	Rural
Length:	2.70	Within City Limits:	No
Functional Classification:	Minor Arterial	Local Planning Jurisdiction:	Amador County Transportation Commission

Roadbed Information

Number of Lanes:	2-Lane	Bridge Location:	None in this segment
Terrain:	Rolling	Lane Width:	12'
Grade %		Right of Way Width:	140-350'
Accessible to Bicycles:	Yes	Shoulder Width:	8
Bridge Needs		Median Width:	00'
Postmile	06.39-9.09	Distressed Lane Miles	None
Bridge#	N/A	Present Serviceability Rating	3

Route Designations

Functional Classification:	Minor Arterial	Scenic Highway (Designated):	No
Facility Type:	Expressway	Scenic Highway (Eligible)	No
Interregional Road System:	Yes	**Trucking Network:**	
High Emphasis Route:	No	National Network, Terminal Access	Yes
Focus Route/Gateway Route:	No	Surface Transportation Assistance Act (STAA)	Yes
National Highway System	No	California Legal:	Yes
Freeway Expressway System	Yes	Advisory	No
Strategic Highway Network	No	Additional Restrictions	None
Freeway Agreement:	Yes	Access to Intermodal Freight Facility	No

Environmental Status

Resource	Level of Impact	Resource	Level of Impact
Flood Plains:	100 yr	Cultural Resources:	Moderate
Wetlands:	Moderate	Leaking Underground Tanks:	Moderate
Special Status Species:	Low	Possible Hazardous Waste:	High-Lead

Air Quality:

Ozone	Particulate Matter 10 m	Particulate Matter 2.5 m	Carbon Monoxide
Non-attainment□8 hr	Attainment Unclassified	Attainment Unclassified	Attainment Unclassified

Travel Forecast Data

Base Free Flow Speed: 65 MPH

Existing Facility: 2-Lane Expressway

	2009		2020		2030	
	HCS	LOSPLAN	HCS	LOSPLAN	HCS	LOSPLAN
Level of Service:	C	D	D	D	D	D
Volume/Capacity:	0.27	0.34	0.32	0.36	0.35	0.41
Peak Hour Volume:	665		770		865	
Average Daily Traffic:	7,000		8,100		9,100	
Peak Hour Directional Split:	70/30		70/30		70/30	
Truck Volume % of Total ADT:	7.3		7.3		7.3	
Peak Hour % of Trucks:	5.8		5.8		5.8	

Level of Service (LOS) calculated using Highway Capacity Software (HCS+T7F) and Florida Department of Transportation HIGHPLAN 2009 Multilane and Two-Lane Highway Level of Service. Analysis for Conceptual Planning and Preliminary Engineering Version Data: 7/17/2010. All LOS reflects vehicles only. LOS does not reflect multi modal at this time.

Existing Transportation Network

Bicycle Facility		Airports		Intermodal Commuter Facilities	Intermodal Freight Facilities
Yes/No	Yes	Yes/No	None	Yes/No	Yes/No
PM	6.390/9.090	PM		PM	PM
Location	Route	Location		Location	Location
Class	Class III				
LOS	Not assessed				

Pedestrian Facility	Park and Rides		Freight Distribution	Transit Bus
Yes/No	Yes/No	None	Yes/No	Yes/No
PM	PM		PM	PM
Location	Location		Location	Location
LOS				

Traffic Collision Rate (Average collision rates statewide for this type facility)

Actual Accident	Rate	Statewide Average	Rate
Fatal & Injury	0.24	Fatal & Injury	0.27
Total	0.81	Total	0.60

3-Year Period Evaluated Rates - Rates are incidents per million vehicle miles from 4/1/2007 to 3/31/2010

Segment Route Concept

Concept Level of Service:	C
Concept Facility 2030	4-Lane Expressway
Ultimate Transportation Corridor:	4-Lane Expressway
Comments:	

❶ Programmed -- ① Planned Projects

	Post Mile	Location	Description
①		There are no planned projects for this segment	
❶	6.408-6.41	SR-16/Latrobe Rd	Interchange Improvements

Intelligent Transportation System (ITS) Elements & Detection

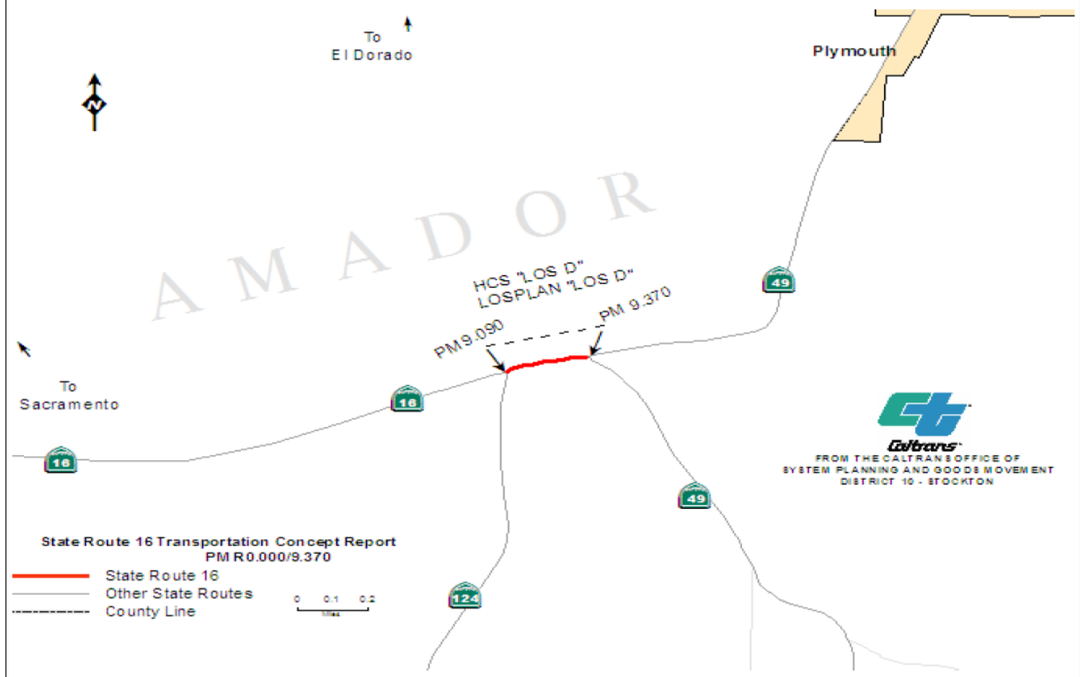
Postmile	ITS Element	Status	Direction
	None in this Segment		

Note: This information is for overview purposes only and does not replace a full report from Right of Way, Environmental, or any other Branch or Division.

Comments:

AMADOR COUNTY FACT SHEETS—SEGMENT 3

STATE ROUTE 16- TRANSPORTATION CONCEPT REPORT | AMADOR COUNTY | SEGMENT 3



Segment Location:

Description:	SR-124 to SR-49		
Post Mile:	9.090-9.370	Rural/Urban/Urbanized:	Rural
Length:	0.28	Within City Limits:	No
Functional Classification:	Minor Arterial	Local Planning Jurisdiction:	Amador County Transportation Commission

Roadbed Information

Number of Lanes:	2-Lane	Bridge Location:	None in this segment
Terrain:	Rolling	Lane Width:	12'
Grade %		Right of Way Width:	140-350'
Accessible to Bicycles:	Yes	Shoulder Width:	8
Bridge Needs		Median Width:	00'
Postmile	9.09-9.37	Distressed Lane Miles	None
Bridge#	N/A	Present Serviceability Rating	3

Route Designations

Functional Classification:	Minor Arterial	Scenic Highway (Designated):	No
Facility Type:	Expressway	Scenic Highway (Eligible)	No
Interregional Road System:	Yes	**Trucking Network:**	
High Emphasis Route:	No	National Network, Terminal Access	Yes
Focus Route/Gateway Route:	No	Surface Transportation Assistance Act (STAA)	Yes
National Highway System	No	California Legal:	Yes
Freeway Expressway System	Yes	Advisory	No
Strategic Highway Network	No	Additional Restrictions	None
Freeway Agreement:	Yes	Access to Intermodal Freight Facility	No

Environmental Status

Resource	Level of Impact	Resource	Level of Impact
Flood Plains:	100 yr	Cultural Resources:	Moderate
Wetlands:	Low	Leaking Underground Tanks:	Moderate
Special Status Species:	Low	Possible Hazardous Waste:	High-Lead

Air Quality:

Ozone	Particulate Matter 10 m	Particulate Matter 2.5 m	Carbon Monoxide
Non-attainment□8 hr	Attainment Unclassified	Attainment Unclassified	Attainment Unclassified

Travel Forecast Data

Base Free Flow Speed: 65 MPH

Existing Facility: 2-Lane Expressway

	2009		2020		2030	
	HCS	LOSPLAN	HCS	LOSPLAN	HCS	LOSPLAN
Level of Service:	D	D	D	D	D	E
Volume/Capacity:	0.33	0.40	0.35	0.46	0.40	0.52
Peak Hour Volume:	810		935		1,050	
Average Daily Traffic:	8,500		9,850		11,050	
Peak Hour Directional Split:	70/30		70/30		70/30	
Truck Volume % of Total ADT:	7.7		7.7		7.7	
Peak Hour % of Trucks:	6.2		6.2		6.2	

Level of Service (LOS) calculated using Highway Capacity Software (HCS+T7F) and Florida Department of Transportation HIGHPLAN 2009 Multilane and Two-Lane Highway Level of Service. Analysis for Conceptual Planning and Preliminary Engineering Version Data: 7/17/2010. All LOS reflects vehicles only. LOS does not reflect multi modal at this time.

Existing Transportation Network

Bicycle Facility		Airports		Intermodal Commuter Facilities	Intermodal Freight Facilities
Yes/No	Yes	Yes/No	None	Yes/No	Yes/No
PM	9.090/9.370	PM		PM	PM
Location	Route	Location		Location	Location
Class	Class III				
LOS	Not assessed				

Pedestrian Facility	Park and Rides		Freight Distribution	Transit Bus
Yes/No	Yes/No	None	Yes/No	Yes/No
PM	PM		PM	PM
Location	Location		Location	Location
LOS				

Traffic Collision Rate (Average collision rates statewide for this type facility)

Actual Accident	Rate	Statewide Average	Rate
Fatal & Injury	2.24	Fatal & Injury	0.27
Total	2.99	Total	0.60

3-Year Period Evaluated Rates - Rates are incidents per million vehicle miles from 4/1/2007 to 3/31/2010

Segment Route Concept

Concept Level of Service:	C
Concept Facility 2030	4-Lane Expressway
Ultimate Transportation Corridor:	4-Lane Expressway
Comments:	

❶ Programmed -- ① Planned Projects

	Post Mile	Location	Description
①		There are no planned projects for this segment	
❶		There are no programmed projects for this segment	

Intelligent Transportation System (ITS) Elements & Detection

Postmile	ITS Element	Status	Direction
9.090	Flashing Beacon	Existing	NB
9.093	Traffic Monitoring Station	Existing	Both
9.370	Flashing Beacon	Existing	NB

Note: This information is for overview purposes only and does not replace a full report from Right of Way, Environmental, or any other Branch or Division.

Comments:

APPENDIX A: ACRONYMS

AAD	Amador Air District
AADT	Annual Average Daily Traffic
ACOE	U.S. Army Corps of Engineers
ACRA	Amador County Recreation Agency
ACTC	Amador County Transportation Commission
ACUSD	Amador County Unified School District
ADA	Americans with Disabilities Act of 1990
ADT	Average Daily Traffic
AEDC	Amador Economic Development Corporation
AHS	Automated Highway System
APE	Area of Potential Effects
ARTS	Amador Regional Transit System
ATIS	Advance Transportation Information System
ATSD	Advanced Transportation System Development
AVI	Automated Vehicle Identification
BN&SF	Burlington Northern and Santa Fe Railroad
BMS	Bridge Management System
CAWS	Caltrans Automated Warning System
CBD	Central Business District
CCA	Construction Contract Acceptance
CCAA	California Clean Air Act
CCTV	Closed Circuit Television
CE	Categorical Exclusion
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHIN	California Highway Information Network
CHP	California Highway Patrol
CIP	Congestion Improvement Program
CMAQ	Congestion Mitigation and Air Quality
CMIA	Corridor Mobility Improvement Account
CMP	Congestion Management Plan
CMS	Changeable Message Sign
CNDDB	California Natural Diversity Data Base
CO	Carbon Monoxide
COG	Council of Governments
COS	Capital Outlay Support
CSIP	Corridor Safety Improvement Program
CSMP	Corridor System Management Plan
CSS	Context Sensitive Solutions
CTC	California Transportation Commission
CTIS	California Transportation Investment Strategy
CY	Calendar Year
DBE	Disadvantaged Business Enterprise
DEA	Division of Environmental Analysis
DEIS	Draft Environmental Impact Statement
DOC	California Department of Conservation
DOT	Department of Transportation
DSMP	District System Management Plan
DVHD	Daily Vehicle Hours of Delay
EA	Environmental Assessment
EB	Eastbound
EEO	Equal Employment Opportunity
EIS	Environmental Impact Statement
EIR	Environmental Impact Report
E/O	East Of
EPA	Environmental Protection Agency
EPMS	Encroachment Permit Management System
ESA	Environmental Sensitive Area
EXPW	Expressway
FAHP	Federal-aid Highway Program
FAPG	Federal-aid Policy Guide
FARS	Fatality Analysis Reporting System
F&E	Freeway and Expressway System
FAT	Fatalities
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Administration
FHWA	Federal Highway Administration
FIS	Federal Inspection Facility
FSP	Freeway Service Patrol
FTA	Federal Transit Administration
FY	Fiscal Year
HAR	Highway Advisory Radio
HICOMP	State Highway Congestion Monitoring Program
HOV	High Occupancy Vehicle
HPMS	Highway Performance Monitoring System
HPSR	Historic Property Survey Report
I/C	Interchange
ICES	Inter-modal Corridor of Economic Significance
IIP	Interregional Improvement Program
IR	Incident Rate
IRRS	Interregional Road System
ISTEA	Intermodal Surface Transportation Efficiency Act
IT	Information Technology
ITMS	Intermodal Transportation Management System
ITS	Intelligent Transportation Systems
ITSP	Interregional Transportation Strategic Plan
JCT	Junction
LOS	Level of Service
LROP	Long Range Operations Plan
LRT	Light Rail Transit
LTAP	Local Technical Assistance Program
LU	Legacy for Users
METS	Materials Engineering and Testing Service
MIS	Major Investment Study
MOU	Memorandum of Understanding
MSL	Maintenance Service Level
MVTM	Million Vehicle Miles Traveled
NAAQS	National Ambient Air Quality Standards
NAFTA	North American Free Trade Agreement
NB	Northbound

NBIS	National Bridge Inspection Standards
NEPA	National Environmental Policy Act
NHS	National Highway System
NAC	Noise Abatement Criteria
N/O	North Of
NTN	National Truck Network
OC	Over-crossing
OH	Overhead
OTS	Office of Traffic Safety
OWP	Overall Work Program
PA&ED	Project Approval and Environmental Document (phase)
PCS	Pavement Condition Survey
PD&E	Project Development and Environment
PEAR	Project Approval Environmental Document
PeMS	Performance Measurement System (Detection)
PG&E	Pacific Gas and Electric Company
PHV	Peak Hour Volume
PIF	Public Interest Finding
PM	Post Mile
PMS	Pavement Management System
PM-10	Particular Matter
PR	Project Report
PS&E	Plans, Specifications and Estimates
PSR	Project Study Report
PTOC	Primary Traffic Operations Center
RAQS	Regional Air Quality Strategy
RAS	Regional Arterial System
RCMP	Regional Congestion Management Plan
RCR	Route Concept Report
RIP	Regional Improvement Plan
ROW	Right-of-Way
RT	Regional Transit
RTE	Route
RTIP	Regional Transportation Improvement Plan
RTIF	Regional Transportation Impact Fee
RTL	Ready to List
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
R/W	Right of Way
RWIS	Roadside Weather Information System
SACOG	Sacramento Area Council of Governments
SAFETEA-LU	Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users
SB	Southbound
SGP	Strategic Growth Plan
SHOPP	State Highway Operations Protection Program
SHS	State Highway System
SIP	State Implementation Plan
S/O	South of
SOP	Status of Projects
SOV	Single Occupancy Vehicle
SP	Southern Pacific Rail Road
SPR	State Planning and Research
SPRR	Southern Pacific Railroad
SR	State Route
STAA	Surface Transportation Assistance Act
STIP	State Transportation Improvement Program
STRAHNET	Strategic Highway Network
TA	Terminal Access
TASAS	Traffic Accident Surveillance and Analysis System
TBD	To Be Determined
TCM	Transportation Control Measure
TCR	Transportation Concept Report
TCRP	Traffic Congestion Relief Program
TDM	Transportation Demand Management
TEA-21	Transportation Equity Act of the 21st Century
TIP	Transportation Improvement Plan
TMC	Transportation Management Center
TMP	Transportation Management Plan
TMS	Traffic Monitoring Station/Transportation Management System
TOS	Traffic Operations System
TPA	Transportation Planning Agency
TSDP	Transportation System Development Plan
TSI	Transportation System Information
TSM	Transportation System Management
UC	Under-crossing
UPRR	Union Pacific Rail-Road
USC	United States Code
UTC	Ultimate Transportation Corridor
V/C	Volume to Capacity
VMT	Vehicle Miles Traveled
WB	Westbound

APPENDIX B: GLOSSARY

Bicycle Routes: Refers to travel ways specific to users employing bicycles. There are three general classifications: 'III'--bicycles share street with automobiles without separation; 'II'--bicycles share street within their own designated lane; and 'I'--bicycles travel independent of automobile traffic, often sharing right of way with pedestrians or equestrians.

California Environmental Quality Act (CEQA): Passed in 1971, CEQA provides the framework in which undertakings that may affect the environment are evaluated and if found to be adverse are to be mitigated for, as part of the governmental decision making process. For local governments, implementation of general plans and land use designations became a requirement and a bench mark for which changes in zoning or land uses could be assessed.

Census Designation: The designation of *rural* (population below 5,000), *or urbanized* (population between 5,000 and 50,000), or *urban* (populations of 50,000 or greater) highways are obtained from the California Road System Maps published by FHWA, based upon census designed urbanized areas, and urbanized clusters. The most recent version dates from 2007.

Concept Level of Service: see *Level of Service.*

Concept Facility: Highway facility that best maintains the Concept LOS at the end of the twenty year planning period.

Conventional Highway: Highway which permits direct access by both road intersections and driveways.

Expressway: Highway, usually an arterial, typically with access limited to at grade road intersections

Federal Highway System: Designated by the Federal Highway Administration, these segments of state highways serve to either support interstate commerce, national defense, or other responsibilities of the federal government. As such they are eligible for federal funding, and subject to the National Environmental Policy Act (NEPA).

Focus Route: see *Interregional Road System.*

Freeway: A divided arterial highway with full access control and grade separations at intersections.

Highway Capacity Manual (HCM): Published by the National Research Council's Transportation Research Board, the HCM is the national standard for methodologies to evaluate and estimate highway performance. Approved software packages developed to reduce the computation effort associated with the HCM are Highway Capacity Software's (HCS) various modules and the Florida Department of Transportation's ARTPLAN, FREEPLAN, and HIGHPLAN. The most recent update of HCM is for 2010, though several of the software interfaces are not yet currently available. Analyses performed for this document were consistent with HCM 2000.

High Emphasis Route: see *Interregional Road System.*

Highway Capacity Software (HCS): see *Highway Capacity Manual*.

Interregional Road System (IRRS): A State planning effort that emphasized highways within the Freeway and Expressway system that provided network connections to urban places statewide, but were not yet constructed to freeway or expressway standards. The most recent expression of this plan (1998) discussed Focus and High Emphasis routes, and established short term and long term improvements for these specific routes.

Level: see *Terrain.*

Level of Service (LOS): A qualitative performance measure that describes the perception of the commuter (driver, bicyclist, pedestrian, transit) of the operational conditions within a traffic stream on a highway segment. Generally scaled in a range from A through F, and historically as a performance measure for automobiles, the LOS targets optimal utility expressed as the *concept LOS* (C for rural highways on the IRRS, D for urban highways on the IRRS and all routes not on the IRRS). Although the current version of the Highway Capacity Manual includes LOS calculations for users other than drivers, standards have yet to be established by the State.

Mountainous: see *Terrain.*

National Environmental Policy Act (NEPA): Established in 1971, this environmental policy applies to federal undertakings or efforts that have a federal nexus. Federal agencies were tasked to develop policies and standards to evaluate and assess the environmental impacts of federal undertakings, while the Act established general policies regarding public notification and report standards.

Rolling: see *Terrain.*

Rural: see *Census Designation.*

Terrain: refers to topography specific to its affect on trucks and other heavy vehicle operation (see HCM). Level terrain contains any combination of grades or horizontal or vertical alignments that permit heavy vehicles to maintain the same speed as passenger cars; rolling terrain contains any combination of grades or horizontal or vertical alignments that causes heavy vehicles to reduce their speed substantially below that of passenger car speeds, but not to where they crawl for a significant length of time; mountainous terrain is any combination of grades or horizontal or vertical alignment that causes heavy vehicles to operate at crawl speed for significant distances or at frequent intervals. HCM methodologies address highway segments with level or rolling terrain with a set of constant values. Mountainous terrain requires separate upgrade or downgrade analysis, and recommends that any segment with grades between 2% and 3% with a length of more than half a mile be considered a separate segment.

Surface Transportation Assistance Act (STAA): Federal highway legislation that included federal design standards and requirements for trucks (see Truck Routes).

Truck Routes: may refer to either federal standards (contained in STAA) or California standards. Routes with an STAA designation permit travel by tractor trailers with a fifty five foot long trailer, or tandems with trailers no greater than twenty eight and a half feet, while California legal routes permit limit the overall truck length to sixty five feet total for single and seventy five for tandems. Advisory truck routes usually possess highway geometrics that limit truck length for safe operation. Restricted truck routes have legal restrictions on the type of truck or activity.

Urban: see *Census Designation.*

Urbanized: see *Census Designation.*