SR-89

AUGUST 2013

CALTRANS DISTRICT 10

State Route 89

TRANSPORTATION CONCEPT REPORT

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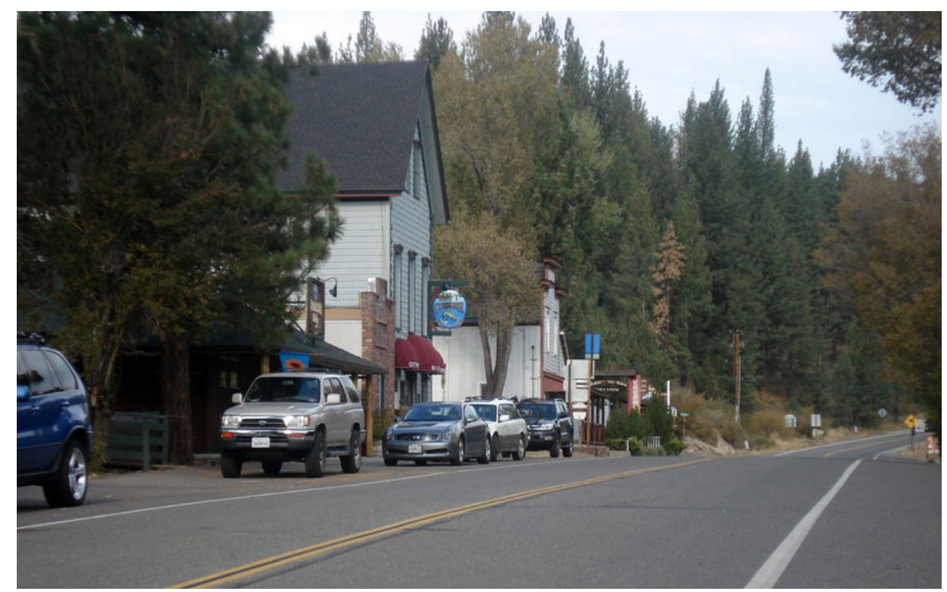


INTRODUCTION TO THE TRANSPORTATION CONCEPT REPORT

What is a Transportation Concept Report?

The 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 minimal 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 establishes a long-range vision for its highways and determines 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.

State highways within each local jurisdiction should be recognized and included in the circulation element of the general plan. 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 used for this 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, ports, airports, interregional bus service, local roadways, and facilities for neighborhood electric vehicles, used occasionally 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.

EXECUTIVE SUMMARY

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.

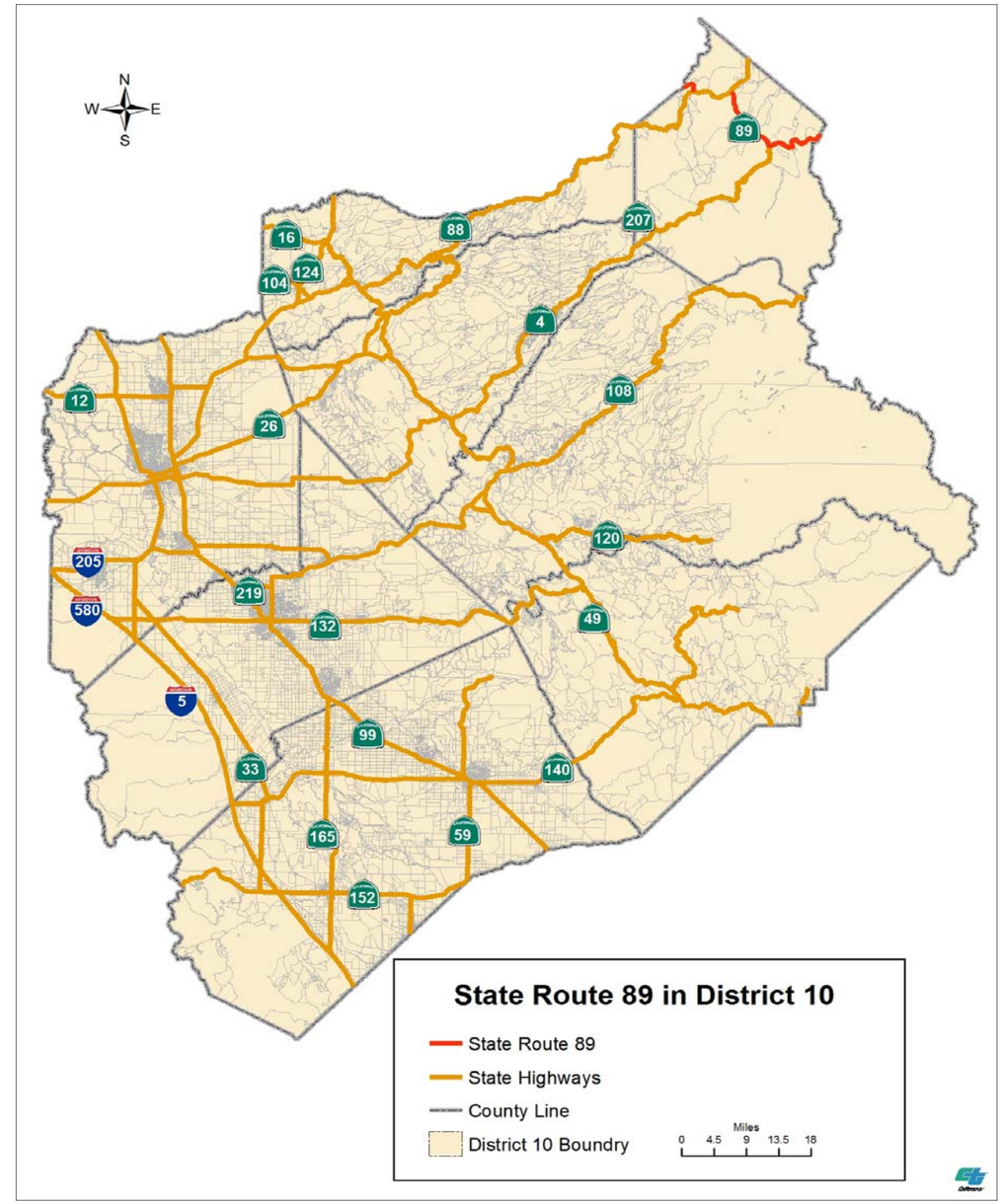
State Route 89 (SR-89) is on the Interregional Road System (IRRS), but is not included as either a High Emphasis Route or a Focus Route. The concept LOS standard for facilities with the IRRS designation in District 10 is 'C' for rural and 'D' for urban. SR-89 is included in the freeway and expressway system, requiring the minimum ultimate facility to be expressway.

With the exception of segment five, SR-89 is not part of the Federal Highway System (FHS). SR-89 is a Terminal Access (TA) route of the Surface Transportation Assistance Act (STAA) from Pine Hill Resort at PM 12.5 north to El Dorado County. South from Pine Hill Resort to the Mono County Line, SR-89 is a California Legal Advisory Route (kingpin-to-rear-axle of 36 feet). Throughout Alpine County, SR-89 is a designated scenic highway.

Current and future LOS for SR-89 are deficient on three segments. The concept facility required to address these deficiencies include four lane expressway on new or existing alignments, except for towns where restricted right of way and commercial access might dictate a four lane conventional highway on the existing alignment. Through much of Alpine County, SR -89 occurs in mountainous or rolling terrain, and attaining concept LOS can be likely achieved with operational improvements. Planned or programmed projects to meet these deficiencies are identified in the County discussion.

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.



ALPINE COUNTY SUMMARY

Of the eight counties that comprise District 10, Alpine is the only mountain county. For California, this translates to a place where the landscape is dominated by primary resources controlled by federal or state resource management agencies (96% of the County), with little private land upon which development can occur. The inclusion of SR-89 in the IRRS reflects a state need to develop the route as a connector between two urban places, which appears to run counter to the functional classification of the route as minor arterial in Alpine County (typically this will be designated 'Other Primary Arterial'). Though this may have implications upon what concept LOS may apply, the State has acquired right of way compatible with a multilane expressway, consistent with the IRRS designation.

Alpine County, with the smallest population of any county in the State, along with its terrain, presents several challenges to assessing current and future interregional transportation needs. The population, since it is interspersed between one town (Markleeville) and two ski resorts—Kirkwood and Bear Valley, creates weak attractors, with employment centers acting as the likely loci for work day travel. With the exception of the Alpine County Government Center, the large county employers depend on tourism, which may allow commute numbers to be disguised by larger recreational traffic volumes. One portion of the route is closed in winter (Monitor Pass), and much of the route is on steep or winding grades with narrow lanes and narrow shoulders.

SR-89 was divided into five segments. These divisions primarily followed considerations of changes in traffic volume particularly the change in truck volume (truck volume includes recreational vehicle types), grade, or connection to other State highways. This provides a more concise characterization for the need for capacity increases, verses operation improvements generally beyond this document's scope.

To characterize LOS, two software applications were employed—Highway Capacity Software (HCS 5.4) and the Florida Department of Transportation (FDOT 2009) software (both are packaged together under the McTrans HCS trademark). Typically the two softwares provide equivalent results and serve as a useful means to assess modeling errors. In contexts where the traffic volumes are low, the LOS results may diverge greatly, but the volume to capacity ratio will remain equivalent. In these contexts, the LOSPLAN result was preferred, as is the case in segments one through two (segment three appears to be a special case, and is discussed below). Segments four and five present higher traffic volumes, but serve primarily as a work commute (segment four) or as a recreation route to Lake Tahoe (segment five).

Future forecast volumes were obtained through three linear projections: 1) from past traffic volumes of the previous twenty years to present, and extended twenty years further, 2) from the local transportation planning jurisdiction's travel demand model (TDM), and 3) from the Department of Finance's twenty year population growth projection for Alpine County. The three projections are then compared for consistency, and may result in one projection being dropped, usually because it overestimates or underestimates future growth compared to the last validated transportation planning jurisdiction's TDM.

The population of Alpine County is 1,175. Within that population, 75% of the residents report themselves as white, 20.4% as Native American, with the remainder other races. Of the total population, 7.1% report that they have Latino or Hispanic ancestry. The median age of residents is 46.7 years, compared to 35.2 years for the State as a whole (2010 census). The median household income was $41,875 which was below the median statewide household income of $47,493 (2000 Census). Current Department of Finance population projections indicate a population decline of 2.7% for 2012, following a population decline of 6.2% for 2011. Approximately 20% of the population has incomes below the federal poverty line (2000 Census). A significant proportion of the County population is represented by members of the federally-recognized Washoe Tribe of California and Nevada with their Woodfords Community CouncIl at Hung-a-Lel-Ti.

Land uses along the SR-89 corridor conform to either the Toiyabe National Forest Plan (segments one and five), and the Alpine County General Plan (2010). General plans characterize and distribute future population density, and would influence future traffic volumes, while forest plans emphasize land uses necessary to conserve or protect natural resources, and would not directly influence future traffic volumes. The Alpine County General Plan stresses preservation of local communities, and development compatible with the natural setting of Alpine County. The Plan anticipates fostering little to no population growth, and foresees a highway maintenance model consistent with current local revenues and expenditures.

One approved project, the Mahalee Lodge and Village development, will likely increase local traffic in Markleeville at the intersection of SR-89 and Montgomery Street. The project has been recently downsized, but will likely increase daily traffic by a 1000 trips with 100 trips occurring during peak hour.

Because of little development in or around Markleeville and Woodfords, the housing stock in Alpine County is limited, and many workers in Markleeville live in Douglas County Nevada, and commute in. This in part may be balanced by a resident out commute to obtain goods and services unavailable in Markleville in either Lake Tahoe or Nevada.

SR-89 supports few multimodal opportunities. Dial-a-ride transit service provides transportation between the eastern portion of the County, the Lake Tahoe area, and adjoining towns in Nevada. Although there is considerable recreational bicycle use of SR-89, bicycle LOS for the route is 'D' reflecting narrow shoulders and lane widths along the Class III route. Sidewalks are not present. SR-89 does allow access to Alpine County's general aviation airport north of Markleeville.

Although SR-89 plays a small role in the interregional transport of goods and services, it connects Markleeville to local and regional markets.

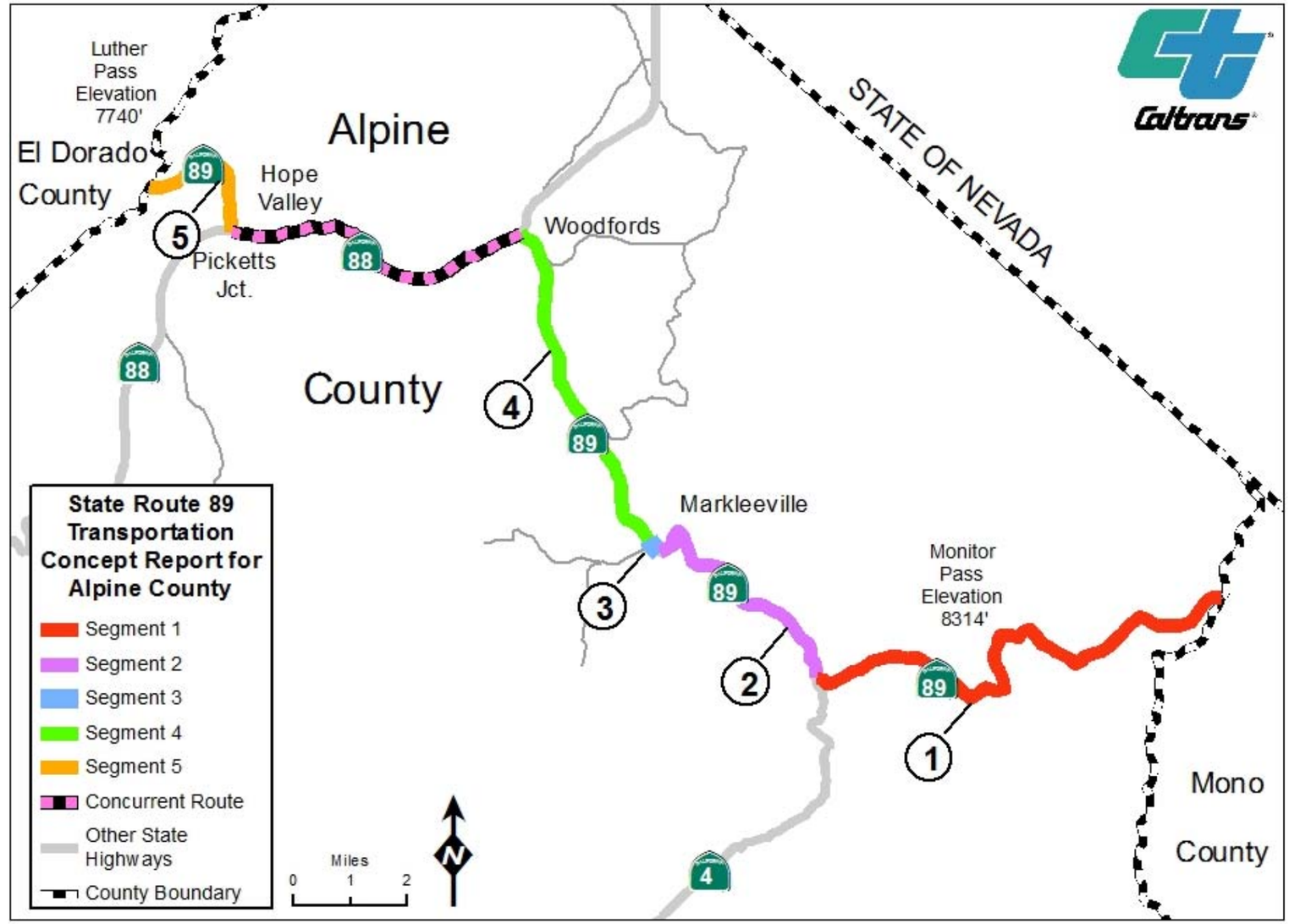
The role that recreation travel plays in local Annual Average Daily Traffic (AADT) measurements remains unclear. Traffic volumes along segments four and five are quite high as a share of local population, but whether this reflects Alpine County's remoteness in the need for every day motor vehicle travel, or just summer and winter recreation peaks cannot be discerned in this report. Given the size of the local traffic share, investment in a traffic management system approach to provide real time detection and recordation of traffic events appears unjustified as more heavily traveled segments of Caltrans District 10's system go unmonitored. At this time, four locations employ traffic monitoring stations (Mono County Line, the intersection of with SR-4, and Pickett's Junction Weigh Station), and no additions are currently proposed.

Modeling and analysis indicate that three of the five segments will experience deficient LOS by 2030. For segments four and five, the deficiency in part reflects terrain and grade conditions that may adversely affect automobile and truck performance. Improvements to traffic operation by permitting increased passing opportunities may address this need. For segment three, serving Markleeville, the two modeling softwares returned discrepant results, which in

part, may be attributed to the low posted speed limit in town, resulting in a deficient LOS for the HCS Two Lane Highway Analysis. Further analysis will be required, as neither of the existing software models provided can address town sites without traffic signals.

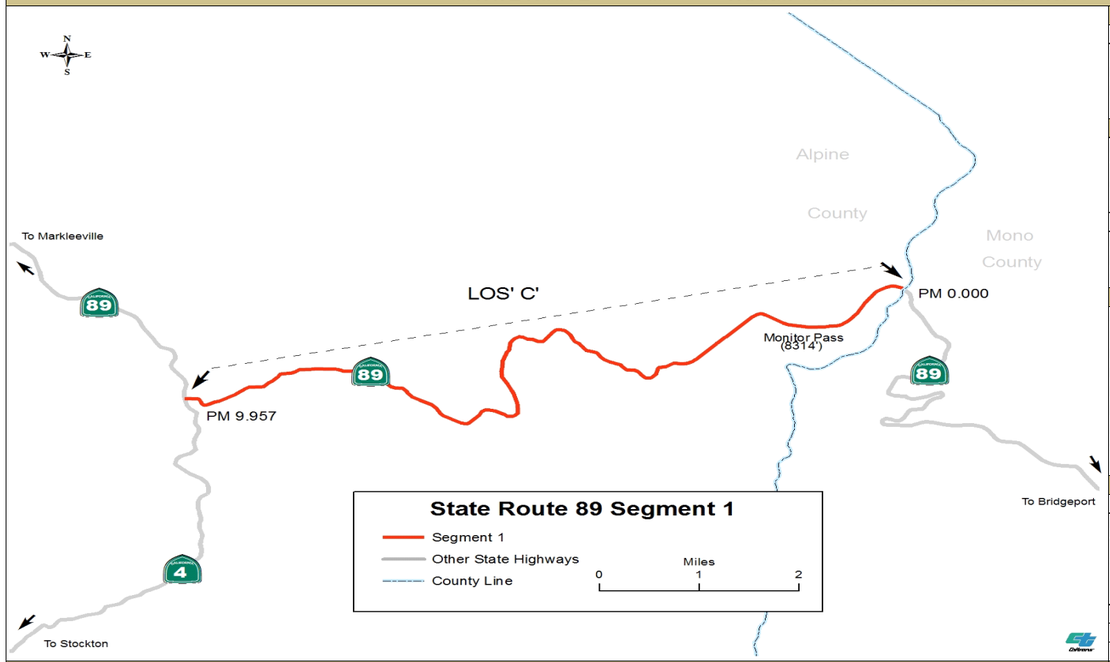
The Alpine County Local Transportation Commission (ACLTC) Regional Transportation Plan (RTP, 2010) indicates that no financially constrained or programmed projects exist at the time of the final draft of this document. The document embraces a “maintenance emphasis alternative”, to, in part, avoid expenditure for capacity increasing highway projects, given current funding uncertainties and a declining population base. The RTP, currently recognizes that systems needs within Alpine may be better addressed on highways in adjoining Calaveras and Amador Counties (as well as with Mono and El Dorado), and indicates future capacity increases within Alpine County would be incompatible with local planning.

It bears noting the Alpine County’s Bicycle and Pedestrian Master Plan (2010) provides several improvements along SR-89 that will improve bicycle LOS—these anticipate a Class II Bicycle Lane from Weber Avenue north for approximately four tenths of a mile, and upgrading shoulders and pavement marking from Laramie Street to SR-4. Sidewalks and a pedestrian friendly setting within Markleeville are also recommended.



ALPINE COUNTY FACT SHEETS—SEGMENT 1

STATE ROUTE 89 TRANSPORTATION CONCEPT REPORT ALPINE COUNTY SEGMENT 1



Segment Location:

Description:	From Mono/Alpine County Line to Jct. SR-4		
Post Mile:	0.00-9.9578	**Rural/Urban/Urbanized:**	Rural
Length:	9.957	**Within City Limits:**	No
Functional Classification:	Minor Arterial	**Local Planning Jurisdiction:**	Alpine County Local Transportation Commission
		Other Agency/Entity	Alpine County Planning Department

Roadbed Information (approximate)

Number of Lanes:	Two	**Lane Width (ft.):**	11
Terrain:	Mountainous	**Right of Way Width (ft.):**	134-400
Grade %	6	**Shoulder Width (ft.):**	0-1
Accessible to Bicycles:	Yes	**Median Width (ft.):**	None
Bridge Needs		**Distressed Lane Miles**	0.00
Postmile	N/A	**Present Serviceability Rating**	4
Bridge#	N/A		
Bridge Name:	N/A		

Route Designations

Functional Classification:	Minor Arterial	**Scenic Highway (Designated):**	Yes
Facility Type:	Conventional Highway	**Scenic Highway (Eligible)**	Yes
Interregional Road System:	Yes	**Trucking Network**	
High Emphasis Route:	No	**National Network, Terminal Access**	No
Focus Route/Gateway Route:	No	**Surface Transportation Assistance Act (STAA)**	No
National Highway System	No	**California Legal:**	No
Freeway Expressway System	Yes	**Advisory**	Yes
Strategic Highway Network	No	**Additional Restrictions**	N/A
Freeway Agreement:	No	**Access to Intermodal Freight Facility**	No

Environmental Status

Degree of Impact		Degree of Impact	
Flood Plains:	Low to Moderate	**Cultural Resources:**	Moderate
Wetlands:	Low to Moderate	**Leaking Underground Tanks:**	Low
Special Status Species:	Low to Moderate	**Possible Hazardous Waste:**	Low

Air Quality

Ozone	Particulate Matter 10 m	Particulate Matter 2.5 m	Carbon Monoxide
Unclassified	Attainment	Attainment	Unclassified

Travel Forecast Data

Posted Speed: 55 MPH	2009		2020		2030	
Existing Facility: Two lane conventional highway	HCS	LOSPLAN	HCS	LOSPLAN	HCS	LOSPLAN
Level of Service:	B	C	C	C	C	C
Volume/Capacity:	0.09	0.14	0.10	0.14	0.11	0.14
Peak Hour Volume:	115		135		153	
Average Daily Traffic:	450		520		590	
Peak Hour Directional Split:	70/30		70/30		70/30	
Truck Volume % of Total ADT:	5.4		5.4		5.4	
Peak Hour % of Trucks:	4.3		4.3		4.3	

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	No	Yes/No	No	Yes/No	No
PM	0.00-9.9578	PM		PM		PM	
Location	On route	Location		Location		Location	
Class	III						
LOS	D						

Pedestrian Facility		Park and Rides		Freight Distribution		Transit Bus	
Yes/No	No	Yes/No	No	Yes/No	No	Yes/No	No
PM		PM		PM		PM	
Location		Location		Location		Location	
LOS							

Segment Route Concept

Concept Level of Service:		C
Concept Facility	**2030**	Two lane conventional highway
Ultimate Transportation Corridor:		Two lane conventional highway

Comments:

Intelligent Transportation System (ITS) Elements & Detection

Postmile	ITS Element	Status	Direction
0.550	TMS	Existing	Both
9.957	TMS	Existing	Both

① Planned ❶ Programmed

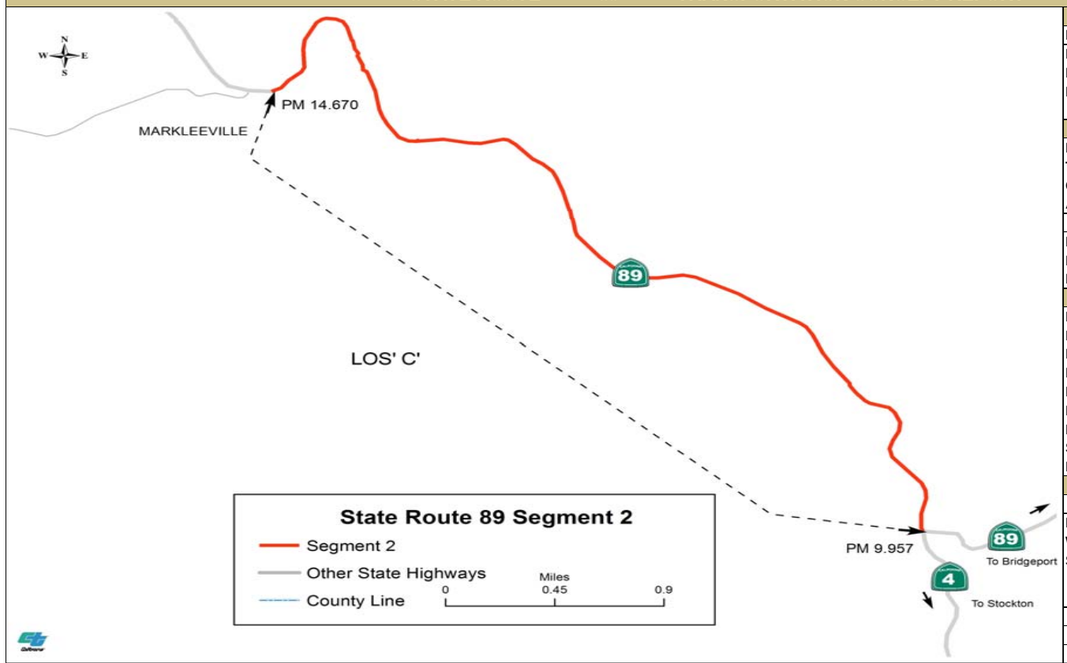
	Post Mile	Location	Description
❍		There are no planned projects for this segment.	
●		There are no programmed projects for this segment.	

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

ALPINE COUNTY FACT SHEETS—SEGMENT 2

STATE ROUTE 89 TRANSPORTATION CONCEPT REPORT ALPINE COUNTY SEGMENT 2



Segment Location:

Description:	Jct. SR-4 to Laramie Street		
Post Mile:	9.957-14.670	**Rural/Urban/Urbanized:**	Rural
Length:	4.713	**Within City Limits:**	No
Functional Classification:	Minor Arterial	**Local Planning Jurisdiction:**	Alpine County Local Transportation Commission
		Other Agency/Entity	Alpine County Planning Department

Roadbed Information (approximate)

Number of Lanes:	Two	**Lane Width (ft.):**	10-12
Terrain:	Rolling	**Right of Way Width (ft.):**	132-400
Grade %	0-3	**Shoulder Width (ft.):**	0-2
Accessible to Bicycles:	Yes	**Median Width (ft.):**	None
Bridge Needs		**Distressed Lane Miles**	7.85
Postmile	N/A	**Present Serviceability Rating**	3
Bridge#	N/A		
Bridge Name:	N/A		

Route Designations

Functional Classification:	Minor Arterial	**Scenic Highway (Designated):**	Yes
Facility Type:	Conventional Highway	**Scenic Highway (Eligible)**	Yes
Interregional Road System:	Yes	**Trucking Network**	
High Emphasis Route:	No	**National Network, Terminal Access**	No
Focus Route/Gateway Route:	No	**Surface Transportation Assistance Act (STAA)**	No
National Highway System	No	**California Legal:**	PM 12.460-14.670
Freeway Expressway System	Yes	**Advisory**	PM 9.957-12.460
Strategic Highway Network	No	**Additional Restrictions**	N/A
Freeway Agreement:	No	**Access to Intermodal Freight Facility**	No

Environmental Status

Degree of Impact		**Degree of Impact**	
Flood Plains:	Low to Moderate	**Cultural Resources:**	Moderate
Wetlands:	Low to Moderate	**Leaking Underground Tanks:**	Low
Special Status Species:	Low to Moderate	**Possible Hazardous Waste:**	Low

Air Quality

Ozone	Particulate Matter 10 m	Particulate Matter 2.5 m	Carbon Monoxide
Unclassified	Attainment	Attainment	Unclassified

Travel Forecast Data

Posted Speed: 55 MPH	2009		2020		2030	
Existing Facility:						
Two lane conventional highway	**HCS**	**LOSPLAN**	**HCS**	**LOSPLAN**	**HCS**	**LOSPLAN**
Level of Service:	C	C	C	C	C	C
Volume/Capacity:	0.08	0.11	0.09	0.12	0.10	0.12
Peak Hour Volume:	105		121		137	
Average Daily Traffic:	980		1,110		1,124	
Peak Hour Directional Split:	70/30		70/30		70/30	
Truck Volume % of Total ADT:	5.4		5.4		5.4	
Peak Hour % of Trucks:	4.3		4.3		4.3	

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	No	Yes/No	No	Yes/No	No
PM	9.957-14.670	PM		PM		PM	
Location	On route	Location		Location		Location	
Class	III						
LOS	D						

Pedestrian Facility		Park and Rides		Freight Distribution		Transit Bus	
Yes/No	No	Yes/No	No	Yes/No	No	Yes/No	No
PM		PM		PM		PM	
Location		Location		Location		Location	
LOS							

Segment Route Concept

Concept Level of Service:	C
Concept Facility 2030	Two lane conventional highway
Ultimate Transportation Corridor:	Two lane conventional highway
Comments:	

Intelligent Transportation System (ITS) Elements & Detection

Postmile	ITS Element	Status	Direction
	None		

① *Planned* ❶ *Programmed Projects*

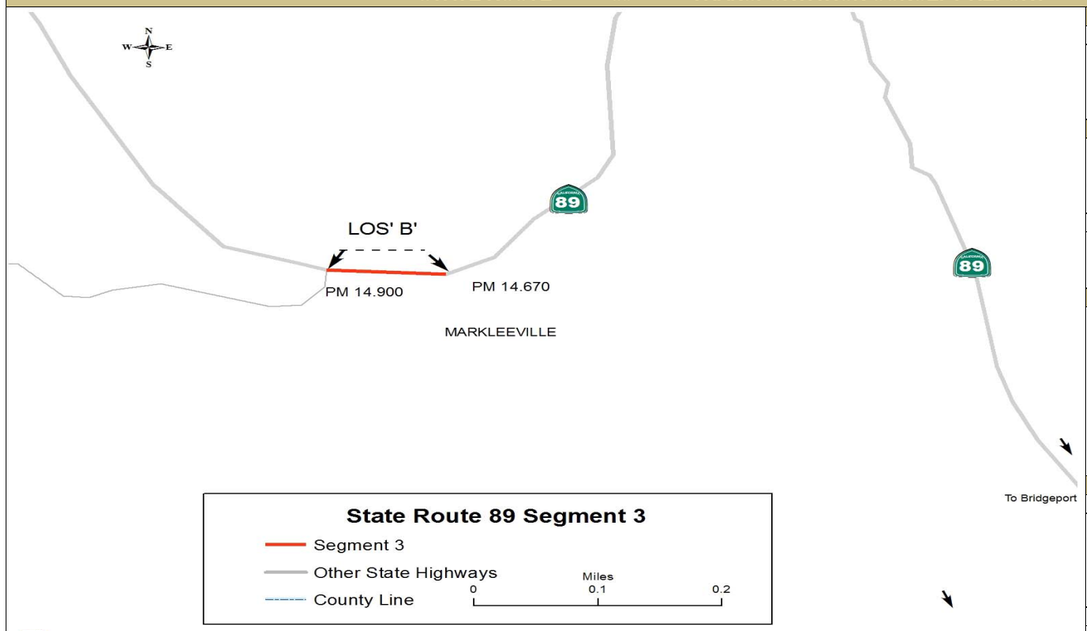
Post Mile	Location	Description
❍	There are no planned projects for this segment.	
●	There are no programmed projects for this segment.	

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:

ALPINE COUNTY FACT SHEETS—SEGMENT 3

STATE ROUTE 89 TRANSPORTATION CONCEPT REPORT ALPINE COUNTY SEGMENT 3



Segment Location:

Description:	Laramie Street to Montgomery Street (Markleeville)		
Post Mile:	14.670-14.900	**Rural/Urban/Urbanized:**	Rural
Length:	0.23	**Within City Limits:**	No
Functional Classification:	Minor Arterial	**Local Planning Jurisdiction:**	Alpine County Local Transportation Commission
		Other Agency/Entity	Alpine County Planning Department

Roadbed Information (approximate)

Number of Lanes:	Two	**Lane Width (ft.):**	11-12
Terrain:	Level	**Right of Way Width (ft.):**	80
Grade %	N/A	**Shoulder Width (ft.):**	3-6
Accessible to Bicycles:	Yes	**Median Width (ft.):**	None
Bridge Needs		**Distressed Lane Miles**	1.00
Postmile	014.690	**Present Serviceability Rating**	3
Bridge#	31 0002		
Bridge Name:	Markleville Creek		

Route Designations

Functional Classification:	Minor Arterial	**Scenic Highway (Designated):**	Yes
Facility Type:	Conventional Highway	**Scenic Highway (Eligible)**	Yes
Interregional Road System:	Yes	**Trucking Network**	
High Emphasis Route:	No	**National Network, Terminal Access**	Terminal Access PM 14.8/14.9
Focus Route/Gateway Route:	No	**Surface Transportation Assistance Act (STAA)**	Partial
National Highway System	No	**California Legal:**	PM 14.670-14.800
Freeway Expressway System	Yes	**Advisory**	No
Strategic Highway Network	No	**Additional Restrictions**	N/A
Freeway Agreement:	Yes	**Access to Intermodal Freight Facility**	No

Environmental Status

Degree of Impact		Degree of Impact	
Flood Plains:	Low to Moderate	**Cultural Resources:**	High
Wetlands:	Low to Moderate	**Leaking Underground Tanks:**	Low
Special Status Species:	Low	**Possible Hazardous Waste:**	Low

Air Quality

Ozone	Particulate Matter 10 m	Particulate Matter 2.5 m	Carbon Monoxide
Unclassified	Attainment	Attainment	Unclassified

Travel Forecast Data

Posted Speed: 35 MPH	2009		2020		2030	
Existing Facility: Two lane conventional highway	HCS	LOSPLAN	HCS	LOSPLAN	HCS	LOSPLAN
Level of Service:	E	B	E	B	E	B
Volume/Capacity:	0.07	0.08	0.08	0.08	0.08	0.09
Peak Hour Volume:	145		165		185	
Average Daily Traffic:	910		1,020		1,130	
Peak Hour Directional Split:	70/30		70/30		70/30	
Truck Volume % of Total ADT:	13.3		13.3		13.3	
Peak Hour % of Trucks:	10.6		10.6		10.6	

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	No	Yes/No	No	Yes/No	No
PM	14.670-14.900	PM		PM		PM	
Location	On route	Location		Location		Location	
Class	III						
LOS	N/A						

Pedestrian Facility		Park and Rides		Freight Distribution		Transit Bus	
Yes/No	No	Yes/No	No	Yes/No	No	Yes/No	No
PM		PM		PM		PM	
Location		Location		Location		Location	
LOS							

Segment Route Concept

Concept Level of Service:		C
Concept Facility	**2030**	Two lane conventional highway
Ultimate Transportation Corridor:		Two lane conventional highway

Comments:

Intelligent Transportation System (ITS) Elements & Detection

Postmile	ITS Element	Status	Direction
	None		

❍ *Planned* ● *Programmed Projects*

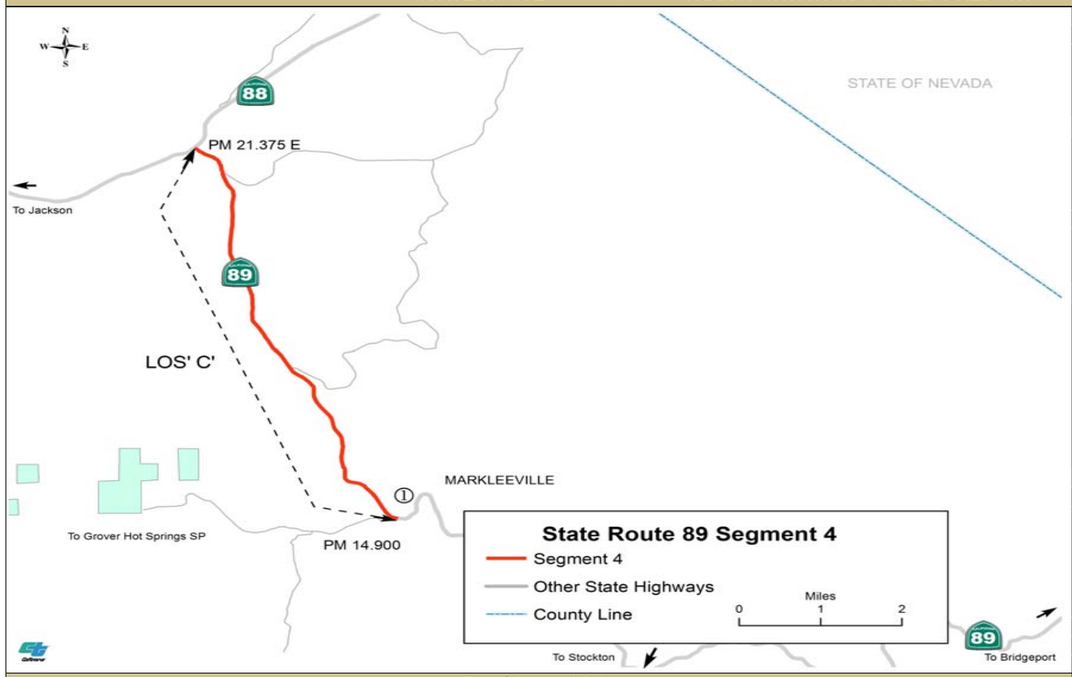
Post Mile	Location	Description
❍	There are no planned projects for this segment.	
●	There are no programmed projects for this segment.	

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:

ALPINE COUNTY FACT SHEETS—SEGMENT 4

STATE ROUTE 89 TRANSPORTATION CONCEPT REPORT ALPINE COUNTY SEGMENT 4



Segment Location:

Description:	Montgomery Street to Jct. SR-88 E/ SR 89 (Woodfords)		
Post Mile:	14.900-21.375E	**Rural/Urban/Urbanized:**	Rural
Length:	6.475	**Within City Limits:**	No
Functional Classification:	Principal Arterial	**Local Planning Jurisdiction:**	Alpine County Local Transportation Commission
		Other Agency/Entity	Alpine County Planning Department

Roadbed Information (approximate)

Number of Lanes:	Two	**Lane Width (ft.):**	11-12
Terrain:	Rolling	**Right of Way Width (ft.):**	140
Grade %	0-3	**Shoulder Width (ft.):**	3-6
Accessible to Bicycles:	Yes	**Median Width (ft.):**	None
Bridge Needs		**Distressed Lane Miles**	12.48
Postmile	N/A	**Present Serviceability Rating**	4
Bridge#	N/A		
Bridge Name:	N/A		

Route Designations

Functional Classification:	Principal Arterial	**Scenic Highway (Designated):**	Yes
Facility Type:	Conventional Highway	**Scenic Highway (Eligible)**	Yes
Interregional Road System:	Yes	**Trucking Network**	
High Emphasis Route:	No	**National Network, Terminal Access**	Terminal Access
Focus Route/Gateway Route:	No	**Surface Transportation Assistance Act (STAA)**	Yes
National Highway System	Yes	**California Legal:**	Yes
Freeway Expressway System	Yes	**Advisory**	No
Strategic Highway Network	No	**Additional Restrictions**	N/A
Freeway Agreement:	Yes	**Access to Intermodal Freight Facility**	No

Environmental Status

Degree of Impact		Degree of Impact	
Flood Plains:	Low to Moderate	**Cultural Resources:**	High
Wetlands:	Low to Moderate	**Leaking Underground Tanks:**	Low
Special Status Species:	Low	**Possible Hazardous Waste:**	Low

Air Quality

Ozone	Particulate Matter 10 m	Particulate Matter 2.5 m	Carbon Monoxide
Unclassified	Attainment	Attainment	Unclassified

Travel Forecast Data

Posted Speed: 55 MPH
Existing Facility:
Two lane conventional highway

	2009		2020		2030	
	HCS	LOSPLAN	HCS	LOSPLAN	HCS	LOSPLAN
Level of Service:	D	C	D	D	D	D
Volume/Capacity:	0.22	0.19	0.25	0.21	0.27	0.24
Peak Hour Volume:	325		378		423	
Average Daily Traffic:	1,750		1,987		2,224	
Peak Hour Directional Split:	70/30		70/30		70/30	
Truck Volume % of Total ADT:	13.3		13.3		13.3	
Peak Hour % of Trucks:	10.6		10.6		10.6	

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	Yes	Yes/No	No	Yes/No	No
PM	14.900-21.375	PM	R19.223	PM		PM	
Location	On route	Location	Airport Way	Location		Location	
Class	III						
LOS	D						

Pedestrian Facility		Park and Rides		Freight Distribution		Transit Bus	
Yes/No	No	Yes/No	No	Yes/No	No	Yes/No	Yes
PM		PM		PM		PM	20.676
Location		Location		Location		Location	Alpine Cnty Public Work
LOS							

Segment Route Concept

Concept Level of Service:	C
Concept Facility 2030	Two lane conventional highway
Ultimate Transportation Corridor:	Four lane expressway

Comments:

① Planned ❶ Programmed Projects

	Post Mile	Location	Description
①	14.900	Markleeville TMS Station #40	
●		There are no programmed projects for this segment.	

Intelligent Transportation System (ITS) Elements & Detection

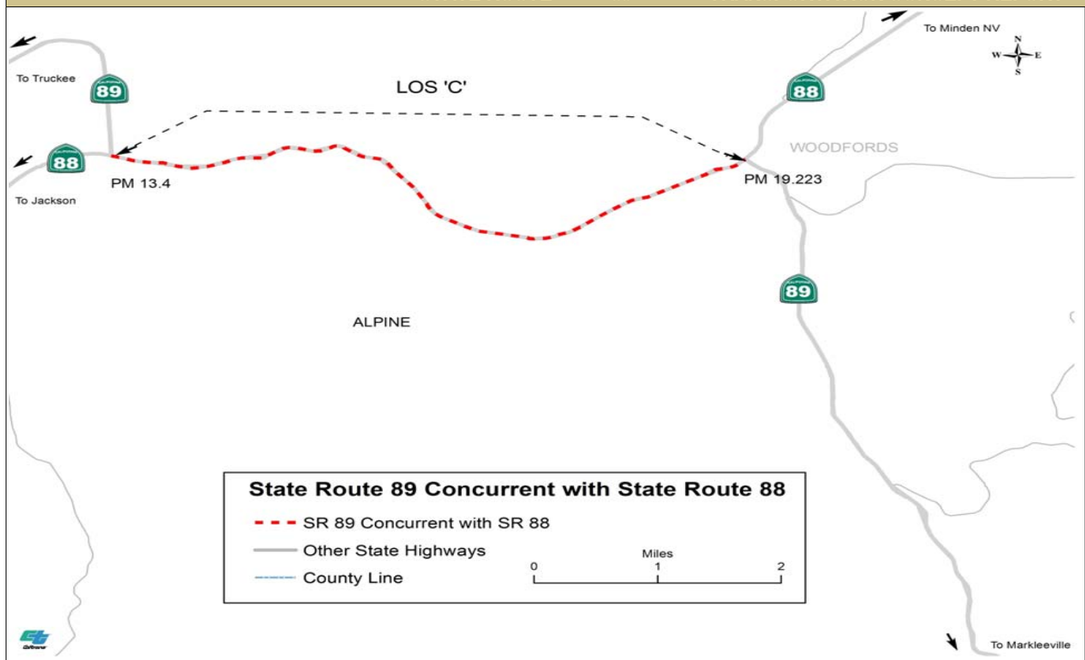
Postmile	ITS Element	Status	Direction
	None		

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: Segment built as conventional highway, but is subject to access control.

ALPINE COUNTY FACT SHEETS—SR-88 CONCURRENT SEGMENT

STATE ROUTE 89 TRANSPORTATION CONCEPT REPORT ALPINE COUNTY SR-88 CONCURRENT SEGMENT 1



Segment Location:

Description:	SR-89 N to SR 89 S		
Post Mile:	13.4-19.223	**Rural/Urban/Urbanized:**	Rural
Length:	5.823	**Within City Limits:**	No
Functional Classification:	Principal Arterial	**Local Planning Jurisdiction:**	Alpine County Local Transportation Commission
		Other Agency/Entity	Alpine County

Roadbed Information (approximate)

Number of Lanes:	Two	**Lane Width (ft.):**	12
Terrain:	Mountainous	**Right of Way Width (ft.):**	120-420
Grade %	>3	**Shoulder Width (ft.):**	1 to 10
Accessible to Bicycles:	Yes	**Median Width (ft.):**	N/A
Bridge Needs		**Distressed Lane Miles**	10.95
Postmile	14.8, 16.22	**Present Serviceability Rating**	2
Bridge#	31 0022, 31 0005		
Bridge Name:	West Fork Carson River		

Route Designations

Functional Classification:	Principal Arterial	**Scenic Highway (Designated):**	Yes
Facility Type:	Expressway	**Scenic Highway (Eligible)**	Yes
Interregional Road System:	Yes	**Trucking Network**	
High Emphasis Route:	No	**National Network, Terminal Access**	Terminal Access
Focus Route/Gateway Route:	No	**Surface Transportation Assistance Act (STAA)**	Yes
National Highway System	Yes	**California Legal:**	Yes
Freeway Expressway System	Yes	**Advisory**	No
Strategic Highway Network	No	**Additional Restrictions**	No
Freeway Agreement:	Yes	**Access to Intermodal Freight Facility**	No

Environmental Status

Degree of Impact		Degree of Impact	
Flood Plains:	Moderate	**Cultural Resources:**	Moderate to High
Wetlands:	Low to Moderate	**Leaking Underground Tanks:**	Low to Moderate
Special Status Species:	Low	**Possible Hazardous Waste:**	Low to Moderate

Air Quality

Ozone	Particulate Matter 10 m	Particulate Matter 2.5 m	Carbon Monoxide
Unclassified	Non-Attainment	Attainment	Unclassified

Travel Forecast Data

Posted Speed: 55 MPH	2009		2020		2030	
Existing Facility: Two lane expressway	**HCS**	**LOSPLAN**	**HCS**	**LOSPLAN**	**HCS**	**LOSPLAN**
Level of Service:	C	N/A	C	N/A	C	N/A
Volume/Capacity:	0.17	N/A	0.21	N/A	0.25	N/A
Average Daily Traffic:	3,250		4,000		4,600	
Peak Hour Volume:	420		510		600	
Peak Hour Directional Split:	60/40		60/40		60/40	
Truck Volume % of ADT:	8.0		8.0		8.0	
Peak Hour % of Trucks:	6.4		6.4		6.4	

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	No	Yes/No	No	Yes/No	No
PM	13.400-19.223	PM		PM		PM	
Location	On route	Location		Location		Location	
Class	III						
LOS	D						
Pedestrian Facility		**Park and Rides**		**Freight Distribution**		**Transit Bus**	
Yes/No	No	Yes/No	No	Yes/No	No	Yes/No	No
PM		PM		PM		PM	
Location		Location		Location		Location	
LOS							

Segment Route Concept

Concept Level of Service:		C
Concept Facility	**2030**	Two lane expressway
Ultimate Transportation Corridor:		Four lane expressway

Comments:

① Planned ❶ Programmed Projects

Post Mile	Location	Description
❍	There are no current programmed projects	
●	There are no current planned projects	

Intelligent Transportation System (ITS) Elements & Detection

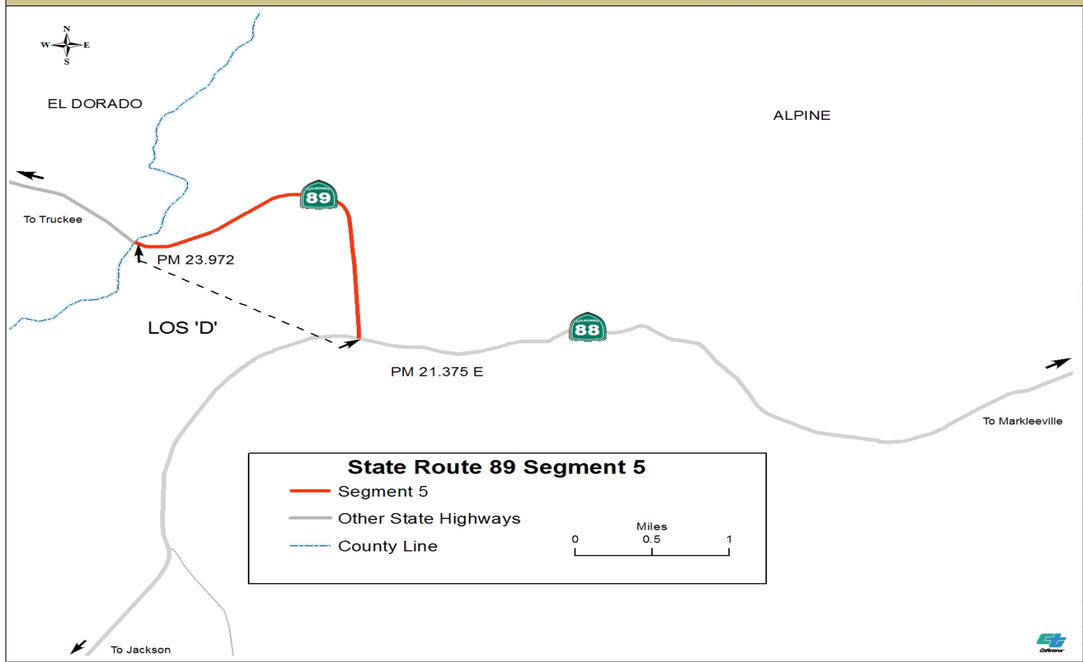
Postmile	ITS Element	Status	Direction
	None		

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:

ALPINE COUNTY FACT SHEETS—SEGMENT 5

STATE ROUTE 89 TRANSPORTATION CONCEPT REPORT ALPINE COUNTY SEGMENT 5



Segment Location:

Description:	West Jct. SR-88 to El Dorado County Line		
Post Mile:	21.376E-23.972	**Rural/Urban/Urbanized:**	Rural
Length:	2.596	**Within City Limits:**	No
Functional Classification:	Principal Arterial	**Local Planning Jurisdiction:**	Alpine County Local Transportation Commission
		Other Agency/Entity	Alpine County Planning Department

Roadbed Information (approximate)

Number of Lanes:	Two	**Lane Width (ft.):**	12-14
Terrain:	Mountainous	**Right of Way Width (ft.):**	100
Grade %	>3	**Shoulder Width (ft.):**	5-11
Accessible to Bicycles:	Yes	**Median Width (ft.):**	None
Bridge Needs		**Distressed Lane Miles**	5.17
Postmile	N/A	**Present Serviceability Rating**	3
Bridge#	N/A		
Bridge Name:	N/A		

Route Designations

Functional Classification:	Principal Arterial	**Scenic Highway (Designated):**	Yes
Facility Type:	Conventional Highway	**Scenic Highway (Eligible)**	Yes
Interregional Road System:	Yes	**Trucking Network**	
High Emphasis Route:	No	**National Network, Terminal Access**	Terminal Access
Focus Route/Gateway Route:	No	**Surface Transportation Assistance Act (STAA)**	Yes
National Highway System	Yes	**California Legal:**	Yes
Freeway Expressway System	Yes	**Advisory**	No
Strategic Highway Network	No	**Additional Restrictions**	N/A
Freeway Agreement:	No	**Access to Intermodal Freight Facility**	No

Environmental Status

Degree of Impact		Degree of Impact	
Flood Plains:	Low to Moderate	**Cultural Resources:**	Moderate
Wetlands:	Low to Moderate	**Leaking Underground Tanks:**	Low
Special Status Species:	Low	**Possible Hazardous Waste:**	Low

Air Quality

Ozone	Particulate Matter 10 m	Particulate Matter 2.5 m	Carbon Monoxide
Unclassified	Attainment	Attainment	Unclassified

Travel Forecast Data

Posted Speed: 55 MPH	2009		2020		2030	
Existing Facility: Two lane expressway	HCS	LOSPLAN	HCS	LOSPLAN	HCS	LOSPLAN
Level of Service:	D	D	D	D	D	D
Volume/Capacity:	0.25	0.22	0.28	0.25	0.30	0.28
Peak Hour Volume:	390		438		485	
Average Daily Traffic:	2,300		2,577		2,854	
Peak Hour Directional Split:	70/30		70/30		70/30	
Truck Volume % of Total ADT:	13.3		13.3		13.3	
Peak Hour % of Trucks:	10.6		10.6		10.6	

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	No	Yes/No	No	Yes/No	No
PM	21.376-23.972	PM		PM		PM	
Location	On route	Location		Location		Location	
Class	III						
LOS	D						

Pedestrian Facility		Park and Rides		Freight Distribution		Transit Bus	
Yes/No	No	Yes/No	No	Yes/No	No	Yes/No	No
PM		PM		PM		PM	
Location		Location		Location		Location	
LOS							

Segment Route Concept

Concept Level of Service:		C
Concept Facility	**2030**	Two lane conventional highway
Ultimate Transportation Corridor:		Four lane expressway
Comments:		

Intelligent Transportation System (ITS) Elements & Detection

Postmile	ITS Element	Status	Direction
21.376	TMS	Existing	Both
21.377	TMS	Existing	Both

① Planned ❶ Programmed Projects

	Post Mile	Location	Description
❍		There are no planned projects for this segment.	
●		There are no programmed projects for 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:

APPENDIX A: GLOSSARY

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

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

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.

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 FDOT'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.

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

High Emphasis Route: see *Highway Capacity Manual.*

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.

LOSPLAN: FDOT's LOS software developed as a quality/LOS application. The application employs the 2000 HCM methodologies for automobiles and other leading methodologies for the bicycle, pedestrian, and bus modes to compute quality/LOS for planning and preliminary engineering. The software includes ARTPLAN, FREEPLAN, and HIGHPLAN options for multi-model analysis of arterials, freeways and two-lane highways.

Mountainous: see *Terrain.*

Rolling: see *Terrain.*

Rural: see *Census Designation.*

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

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.

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.

APPENDIX B: ACRONYMS

AADT	Annual Average Daily Traffic
ACLTC	Alpine County Local Transportation Commission
ADT	Average Daily Traffic
CAWS	Caltrans Automated Warning System
CCTV	Closed Circuit Television
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
CO	Carbon Monoxide
CSMP	Corridor System Management Plan
CSS	Context Sensitive Solutions
CTC	California Transportation Commission
DSMP	District System Management Plan
EB	Eastbound
E/O	East Of
EPA	Environmental Protection Agency
ESA	Environmental Sensitive Area
EXPW	Expressway
F&E	Freeway and Expressway System
FAT	Fatalities
FDOT	Florida Department of Transportation
FEMA	Federal Emergency Management Administration
FHS	Federal Highway System
FHWA	Federal Highway Administration
FY	Fiscal Year
HAR	Highway Advisory Radio
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
I/C	Interchange
IIP	Interregional Improvement Program
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
MIS	Major Investment Study
MOU	Memorandum of Understanding
MSL	Maintenance Service Level
NAAQS	National Ambient Air Quality Standards
NB	Northbound
NEPA	National Environmental Policy Act
NHS	National Highway System
N/O	North Of
NTN	National Truck Network
OWP	Overall Work Program
PA&ED (phase)	Project Approval and Environmental Document
PCS	Pavement Condition Survey
PeMS	Performance Measurement System (Detection)
PG&E	Pacific Gas and Electric Company
PHV	Peak Hour Volume
PM-2.5	2.5 Micron Diameter Particulate Matter (diesel exhaust)
PM-10	10 Micron Diameter Particulate Matter (dust)
PR	Project Report
PSR	Project Study Report
RAS	Regional Arterial System
RIP	Regional Improvement Plan
ROW	Right-of-Way
RT	Regional Transit
RTE	Route
RTIP	Regional Transportation Improvement Plan
RTIF	Regional Transportation Impact Fee
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
R/W	Right of Way
RWIS	Roadside Weather Information System
SAFETEA-LU	Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users
SB	Southbound
SHOPP	State Highway Operations Protection Program
SIP	State Implementation Plan
S/O	South of
SOP	Status of Projects
SOV	Single Occupancy Vehicle
SR	State Route
STAA	Surface Transportation Assistance Act
STIP	State Transportation Improvement Program
STRAHNET	Strategic Highway Network
TA	Terminal Access

APPENDIX B: ACRONYMS [CONTINUED]

TASAS	Traffic Accident Surveillance and Analysis System
TBD	To Be Determined
TCM	Transportation Control Measure
TCR	Transportation Concept Report
TDM	**T**ravel Demand Model
TEA-21	Transportation Equity Act of the 21st Century
TOS	Traffic Operations System
TPA	Transportation Planning Agency
TSDP	Transportation System Development Plan
TSM	Transportation System Management
UAPCD	Unified Air Pollution Control Districts
UTC	Ultimate Transportation Corridor
V/C	Volume to Capacity
VMT	Vehicle Miles Traveled
WB	Westbound