



STATE ROUTE 108 TRANSPORTATION CONCEPT REPORT



**CALTRANS DISTRICT 9
OFFICE OF SYSTEM PLANNING
OCTOBER 2011**



**State Route 108
Transportation Concept Report**

Prepared
by
Caltrans District 9
Office of System Planning

October 2011

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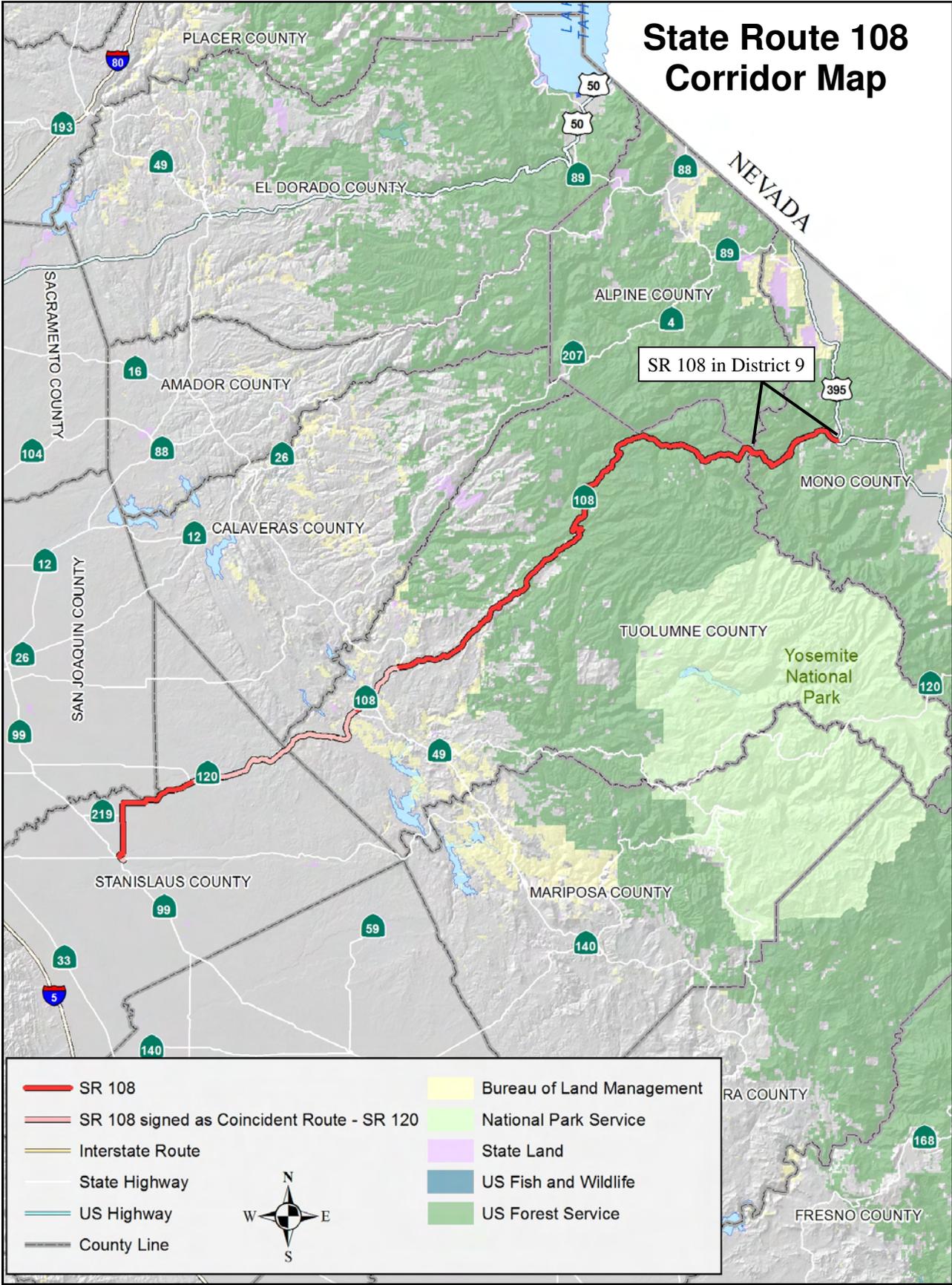
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Approval for State Route 108 Transportation Concept Report

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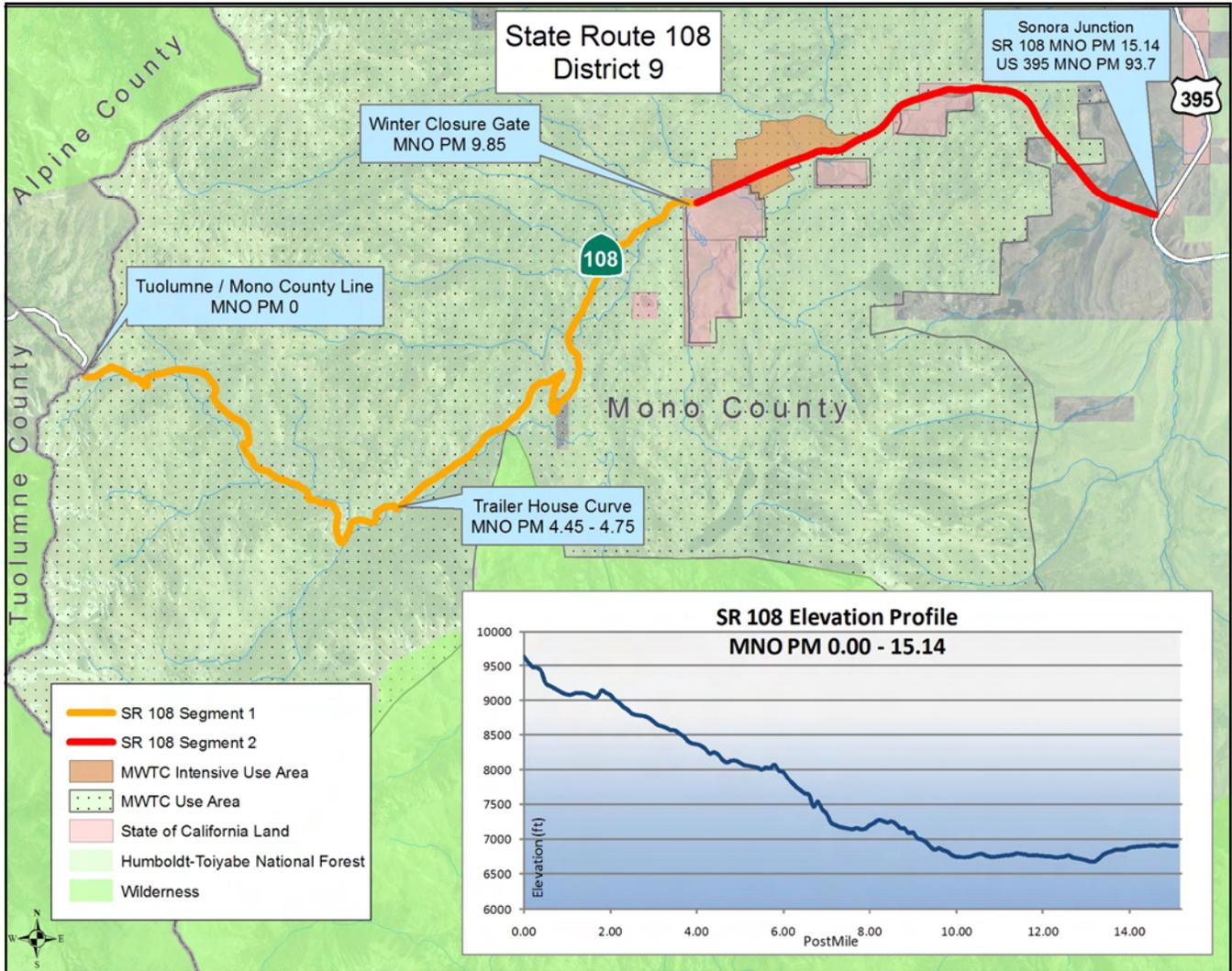
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State Route 108 Corridor Map



	SR 108		Bureau of Land Management
	SR 108 signed as Coincident Route - SR 120		National Park Service
	Interstate Route		State Land
	State Highway		US Fish and Wildlife
	US Highway		US Forest Service
	County Line		

Caltrans District 9 State Route 108 Segment Map & Elevation Profile



Acronyms

- MNO Mono County
- MWTC Mountain Warfare Training Center (U.S. Marine Corps)
- PM Post Mile
- SR 108 State Route 108
- US 395 United States Route 395

State Route 108 Transportation Concept Report

INTRODUCTION

The Transportation Concept Report (TCR) is a long range planning document that describes the current characteristics of the State Route 108 (SR 108) transportation corridor and establishes a twenty-year planning concept. This TCR defines the California Department of Transportation's (Caltrans) goals for the development of the corridor in terms of facility type and Level of Service (LOS), while broadly identifying the improvements needed to reach those goals.

LOS calculations are based on the year 2000 Highway Capacity Manual (HCM). The 2000 HCM includes substantial changes to capacity calculations as compared to past editions. As a result, LOS calculations will differ from former reports or studies based on earlier editions of the HCM.

This TCR was prepared by the Caltrans District 9 System Planning Branch, with the cooperation of local and regional agencies. All information in this TCR is subject to revision as conditions change and new information is obtained. Consequently, the nature and size of identified improvements may change during project development and environmental analysis stages. Final determinations are made at the time of project planning and design.



SR 108 - Primary Winter Closure Gate

CONCEPT RATIONALE

SR 108 is two lane conventional highway that is functionally classified as a Rural Minor Arterial. This route is part of the Interregional Road System (IRRS) connecting Central California to other states. Caltrans recommends continued rehabilitation and operational improvements on SR 108 due to its status as an interregional route, Surface Transportation Assistance Act of 1982 (STAA) Truck Network, an alternate trans-Sierra route, and its access to military facilities. Table 1 summarizes the current and future facility and LOS for SR 108. The Ultimate Facility is the goal for the route beyond the twenty year planning horizon.

Table 1 – SR 108 Facility Summary									
Segment County Post-Mile	Segment Length	Current Facility	Concept Facility	Ultimate Facility	2007 AADT	Current LOS	10-Yr LOS	20-Yr LOS	Route Concept LOS
1 Mono 0.0 – 9.85	9.85	2-C	2-C	2-C	735	B	B	C	C
2 Mono 0.0 – 15.14	16.43	2-C	2-C	2-C	1,190	B	B	C	C

LOS calculated using Class II facility designation
For acronyms used in this table, see page 9

ROUTE SYNOPSIS

This TCR covers the 15.14 miles of SR 108 located in Mono County, and it is addressed in two segments (see Table 2). This portion of the highway starts at Sonora Pass (Tuolumne/Mono County line) and winds down slope, through mountainous terrain, to its terminus junction at US 395. This highway serves local, interregional, and recreational traffic; while also providing the only paved access to the U.S. Marine Corps Mountain Warfare Training Center (MWTC).



SR 108 - Mountainous Terrain

The Average Annual Daily Traffic (AADT) for the route is between 735 and 1,190 vehicles. Truck traffic and recreational vehicles make up 2.3% of AADT. The functional classification, description, facility type, users, designation, Right of Way (R/W), and truck networks for each segment are in Table 2.

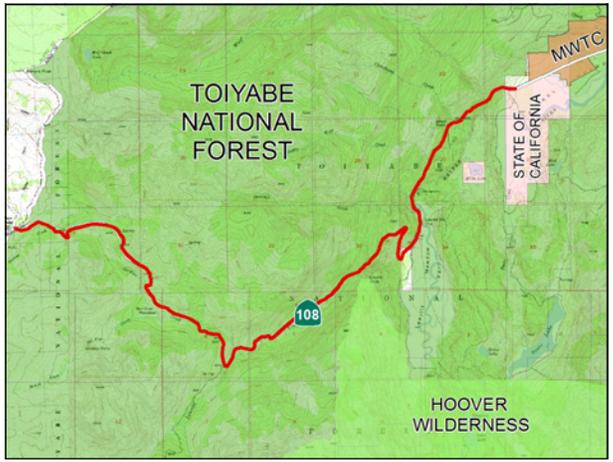
Table 2 - SR 108 Facility & Designations								
Segment County Post-Mile	Functional Class	Description	Present Facility	R/W Width & Rights	Users	Facility Designations	National Truck Network	See Page #
1 Mono 0.0 - 9.85	Rural Minor Arterial	Sonora Pass to winter closure gate	2-C	60 - 100 ft, easements	Local, interregional, recreational, military	CA Freeway & Expressway System, IRRS	CA Legal Advisory Route	5
2 Mono 9.85 - 15.14	Rural Minor Arterial	Winter closure gate to US 395	2-C	60 - 100 ft, easements	Local, interregional, recreational, military	CA Freeway & Expressway System, IRRS	STAA Terminal Access	7

For acronyms used in this table, see page 9.

COMMUNITY ISSUES & PUBLIC OUTREACH

Major improvements to SR 108 will be planned utilizing a collaborative, interdisciplinary approach involving all stakeholders. This approach will attempt to integrate and balance community, aesthetic, historic, and environmental values with regard to transportation safety, maintenance, and performance goals. Stake-holders in the SR 108 planning area are community members and agencies, including, but not limited to: Mono County, U.S. Forest Service, U.S. Marine Corps, and the communities of Bridgeport, Coleville, and Walker. Caltrans continuously consults with these stakeholders regarding SR 108 proposed projects.

STATE ROUTE 108 - SEGMENT FACT SHEET

SEGMENT 1 of 2	Through Lanes	2		
Length, miles	9.85	Shoulder Width, ft		0
Beginning PM	0.00	Median Width, ft		0
Ending PM	9.85	Lane Width, ft		9 - 12
Surrounding Terrain: Mountainous				
Facility Classification				
Present: 2-C	Concept: 2-C	Ultimate: 2-C		
Level of Service				
Present: B	Concept: C			

Segment Description

This segment begins at the Tuolumne/Mono County line (PM 0.0) and ends at the primary winter closure gate (PM 9.85). It traverses mountainous terrain and is a two-lane conventional highway that is classified as a Rural Minor Arterial along its entire length in Mono County. The majority of the facility is in good condition, with a posted speed limit of 45 mph and unpaved shoulders. This highway has the steepest grade on the California State Highway System, with 25% grade at Sonora Pass (PM 0.0). The facility crosses two bridges in this segment: Soda Creek Bridge (#47-0018) and Wolf Creek Bridge (#47-0016). The U.S. Marine Corps has a training area Camp Cloudburst at PM 9.04. On a Maintenance Service Level (MSL) scale of 1 to 3, this segment is a Class 3.

Highway Network Affiliation

Functional Classification: Rural Minor Arterial	CA Freeway and Expressway System: Yes
National Truck Network: CA Legal Advisory - 30ft KPRA	Interregional Road System (IRRS): Yes
Strategic Highway Corridor Network: No	National Highway System: No
Scenic Highway: Eligible State Scenic Highway	Regionally Significant: Yes
	Life Line: No

Traffic Flow, Present and Projected

Year	Average Annual Daily Traffic	Design Hourly Volume	Level of Service
2009	735	220	B
2019	865	260	B
2029	1005	300	C

Maintenance Program

Maintenance Service Level: Class 3

Maintenance Station:
 Sonora - HMS (17 miles north of Bridgeport)
 Highway 395, Bridgeport, CA 93517
 MNO 395 PM 93.81

Collision Data and Use Patterns

Collisions			Use Patterns	
Classification	Rate, incidents/million vehicle miles		Directional Traffic Split	50/50 W/E
	Actual	Statewide Average	10-Year Traffic Growth %	1.5
Fatality and Injury	0.66	1.10	Trucks/Total Vehicles %	2.3
Total	0.66	2.17		

STATE ROUTE 108 - SEGMENT FACT SHEET

Traffic Analysis

SR 108 functions as a rural highway and is an east/west trans-Sierra route. Fatality + Injury and Total Actual Collision Rates are below the statewide average for a similar facility. Steep grades and curves cause trucks and recreational vehicles to typically move much slower than other traffic. Narrow lanes, steep grades, curves, and unpaved shoulders increase the frequency of vehicle off-tracking. This segment is a California Legal Advisory truck route with a kingpin-to-rear-axle (KPRA) advisory of 30 feet. Both military vehicles and troops frequently use the highway for training purposes. Winter snow and ice conditions impact the road surface, and as a result chain requirements and road closures occur. This portion of the route is typically closed for the winter (November to May).

Route Concept Improvement Recommendations

When feasible widen lanes, improve curve radii, and install paved shoulders with safety edge and rumble strip. Consider providing paved pullouts in areas with steep grades. Throughout this segment, dirt roads/driveways are used for recreational and military training purposes. Therefore, verifying locations for sight distance and paving access aprons is recommended.

Land Use

Usage: Recreational, Forestry, and Military

Land managers/owners: United States Forest Service (USFS); State of California Wildlife Conservation Board; and private parcels. There a Forest Service campground at Leavitt Meadows.

Right of Way

Width: 60 – 100 ft

Rights: Easement from the U.S. Forest Service (PM 0.0-14.18). This portion of the route is also designated as U.S. Forest Service Highway #038

Environmental

Endangered / Threatened Species: Listed in the California Natural Diversity Database (CNDDDB) 2010
California Wolverine: CA Threatened
Great Gray Owl: CA Endangered

Air Quality

Air Basin: Great Basin Valleys

State of California Ambient Air Quality Standard:

Ozone: Non-attainment
PM-10: Non-attainment

National Ambient Air Quality Standard:

8-Hour Ozone: Unclassified / Attainment
PM-10: Unclassified / Attainment

Transit Service, Modal Options, & Complete Streets

Transit Service: None

Modal: Bicycles and pedestrians are allowed

Complete Streets: Alternate forms of transportation are permitted. There are unpaved shoulders and no sidewalks.

Programmed Projects

At the time of publication, the SR 108 Trailerhouse Curve project (MNO 108 PM 4.0/5.0) is in the feasibility study phase to examine curve corrections, truck turn-a-rounds, and regulatory signs. This project would address some of the operational issues with tractor trucks and the existing road geometry.

STATE ROUTE 108 - SEGMENT FACT SHEET

SEGMENT 2 of 2	Through Lanes 2	
Length, miles 5.29	Shoulder Width, ft 0	
Beginning PM 9.85	Median Width, ft 0	
Ending PM 15.14	Lane Width, ft 11- 12	
Surrounding Terrain: Mountainous		
Facility Classification		
Present: 2-C	Concept: 2-C	Ultimate: 2-C
Level of Service		
Present: B	Concept: C	

Segment Description

This segment begins at the primary winter closure gate (PM 9.85), crosses Walker River Bridge (#47-0020), and ends at its terminus junction with US 395 (PM 15.14). It traverses mountainous terrain and is a two-lane conventional highway that is classified as a Rural Minor Arterial along its entire length in Mono County. The majority of the facility is in good condition, with a posted speed limit of 55 mph and unpaved shoulders. The U.S. Marine Corps Mountain Warfare Training Center (MWTC) entrance is located at PM 11.07. This segment is classified as a CA Legal Advisory Route from the winter closure gate to the MWTC, and as an STAA Terminal Access Route from the MWTC to US 395. On a Maintenance Service Level (MSL) scale of 1 to 3, this segment is a Class 3.

Highway Network Affiliation

Functional Classification: Rural Minor Arterial	CA Freeway and Expressway System: Yes
National Truck Network: STAA Terminal Access CA Legal Advisory - 30ft KPRA	Interregional Road System (IRRS): Yes
Strategic Highway Corridor Network: No	National Highway System: No
Scenic Highway: Eligible State Scenic Highway	Regionally Significant: Yes
	Life Line: No

Traffic Flow, Present and Projected

Year	Average Annual Daily Traffic	Design Hourly Volume	Level of Service
2009	1190	275	B
2019	1330	300	B
2029	1465	340	C

Maintenance Program

Maintenance Service Level: Class 3
Maintenance Station:
 Sonora - HMS (17 miles north of Bridgeport)
 Highway 395, Bridgeport, CA 93517
 MNO 395 PM 93.81

Collision Data and Use Patterns

Collisions			Use Patterns	
Classification	Rate, incidents/million vehicle miles		Directional Traffic Split	50/50 W/E
	Actual	Statewide Average	10-Year Traffic Growth %	1.0
Fatality and Injury	0.94	0.48	Trucks/Total Vehicles %	2.3
Total	1.25	1.07		

STATE ROUTE 108 - SEGMENT FACT SHEET

Traffic Analysis

SR 108 functions as a rural highway and is an east/west trans-Sierra route. Fatality + Injury and Total Actual Collision Rates are above the statewide average for a similar facility. Half of the collisions occurred during snow and ice conditions. This segment has a STAA Terminal Access classification and is open year-round because it is the only paved access to the U.S. Marine Corps MWTC. Both military vehicles and troops frequently use the highway for training purposes. Winter snow and ice conditions impact the road surface, and as a result chain requirements and road closures occur.

Route Concept Improvement Recommendations

When feasible widen lanes and install paved shoulders with safety edge and rumble strip. Consider a truck turn-around where the STAA Terminal Access ends (PM 11.1). Throughout this segment, dirt roads/driveways are used for recreational and military training purposes. Therefore, verifying locations for sight distance and paving access aprons is recommended.

Land Use

Usage: Recreational, Forestry, and Military

Land managers/owners: United States Forest Service (USFS); State of California Wildlife Conservation Board; and private parcels.

Right of Way

Width: 60 – 100 ft

Rights: Easement from the U.S. Forest Service (PM 0.00-14.18) and a private party (PM 14.18-15.14).

A majority of the segment is designated as U.S. Forest Service Highway #038.

Environmental

Endangered / Threatened Species: Listed in the California Natural Diversity Database (CNDDDB) 2010
California Wolverine: CA Threatened

Air Quality

Air Basin: Great Basin Valleys

State of California Ambient Air Quality Standard:

Ozone: Non-attainment

PM-10: Non-attainment

National Ambient Air Quality Standard:

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Transit Service, Modal Options, & Complete Streets

Transit Service: None

Modal: Bicycles and pedestrians are allowed

Complete Streets: Alternate forms of transportation are permitted. There are unpaved shoulders and no sidewalks.

Programmed Projects

At the time of publication, the SR 108 Trailerhouse Curve project (MNO 108 PM 4.0/5.0) is in the feasibility study phase to examine curve corrections, truck turn-a-rounds, and regulatory signs. This project would address some of the operational issues with tractor trucks and the existing road geometry.

ACRONYMS

2-C	Two-Lane Conventional Highway
AADT	Average Annual Daily Traffic
Caltrans	California Department of Transportation
CHP	California Highway Patrol
CNDDDB	California Natural Diversity Database
FHWA	Federal Highway Administration
HCM	Highway Capacity Manual
HMS	Highway Maintenance Station
IRRS	Interregional Road System
KPRA	Kingpin-to-Rear-Axle
LOS	Level of Service
MNO	Mono County
MSL	Maintenance Service Level
MWTC	Mountain Warfare Training Center (U.S. Marine Corps)
NAAQS	National Ambient Air Quality Standards
NHS	National Highway System
NTN	National Truck Network
PM	Post Mile
R/W	Right-of-Way
SR 108	State Route 108
STAA	Surface Transportation Assistance Act of 1982
STRAHNET	Strategic Highway Network
TCR	Transportation Concept Report
US 395	United States Highway 395

GLOSSARY

Annual Average Daily Traffic - AADT

The average 24-hour volume of traffic that is calculated over a year

Concept Facility

Highway facility type and characteristics considered viable with or without improvement within the 20-year planning period given financial, environmental, planning, and engineering factors

Concept LOS

Highest and best Level of Service that can be achieved in the 20-year planning period based on the concept facility

Conventional Highway

A highway without controlled access. Grade separations at intersections and access control may be used when justified

Design Hour Volume - DHV

The 30th highest hour traffic volume in a selected year for a given segment

Directional Split

The percentage of traffic in the peak direction during the peak hour

Functional Classification

Guided by Federal legislation, refers to a process by which streets and highways are grouped into classes or systems according to the character of the service that is provided, i.e. Principal and Minor Arterial Roads, Collector Roads, and Local Roads

Interregional Road System - IRRS

Statewide network of legislatively identified interregional routes, outside urbanized areas, that provide access to, and links between, the state's rural and urban regions, economic centers, and major recreational areas

Level of Service - LOS

A qualitative rating of the effectiveness of a transportation system in serving travel, A (best) through F (worst)

National Highway System - NHS

Federally-designated system of major highways in each state, including all interstate highways

Programmed Projects

Capacity-enhancing, safety, and/or operational improvement projects programmed through STIP or SHOPP

Route Designations

Identifies whether or not the subject segment of a route is designated as being part of the National Highway System, Interregional Highway System, California Freeway/Expressway, Scenic Highway, National Truck Network, Strategic Highway Network, and other highways of regional significance

Strategic Highway Corridor Network - STRAHNET

A network of highways that provide defense access, continuity, and emergency capabilities to military bases for defense purposes

Surface Transportation Assistance Act of 1982 - STAA

The FHWA provides standards for STAA trucks. These standards designate the maximum truck size that all states must allow on highways in the National Truck Network.

REFERENCES & INFORMATION

Digital Highway Inventory Photography Program (DHIPP), Caltrans HQ Project Delivery, 2002
Eastern Sierra Transit Authority (ESTA) <<http://easternsierratransitauthority.com>> 2011
Federal Highway Administration <www.fhwa.dot.gov> 2011
Great Basin Unified Air Pollution Control District <www.gbuapcd.org> 2010
157 Short Street, Bishop, CA. 93514
Highway Capacity Manual, 2000
Lahontan Regional Water Quality Control Board <www.swrcb.ca.gov/rwqcb6> 2010
2501 Lake Tahoe Boulevard, South Lake Tahoe, CA. 96150
Long-Term Socio-Economic Forecasts, Caltrans <www.dot.ca.gov/hp/tpp/offices/ote/> 2010
Mono County Community Development Department <www.mono.ca.gov> 2011
Mono County Regional Transportation Plan, Circulation Element, 2008
National Agriculture Imagery Program (NAIP), US Department of Agriculture, 2010
Post Mile Log, Caltrans District 9, 2007
State Route 108 Transportation Concept Report, 2001
Table B Collision Data, US 6, 2006–2008
Transportation System Development Plan, Caltrans District 9, 2006

Environmental Sources of Information:

California Natural Diversity Database (CNDDDB), 2010

On SR 108, an initial assessment of known biological resources in a 2000-foot wide corridor is listed under Environmental Concerns within the segment fact sheets. This information does not represent all possible environmental constraints that may exist, such as cultural resources (historic and pre-historic), floodplain encroachment, hazardous materials, noise, and visual impacts. Any project that is being considered for programming would require environmental clearance in compliance with all Federal, State, and Local environmental laws and regulations.

California Climate Change Law: AB 32 and SB 375

Caltrans is working through the project development process to help local agencies understand, prepare, and comply with the new California climate change laws, AB 32 and SB 375, by incorporating planning, environmental, construction, and maintenance strategies that may reduce greenhouse gas emissions, which are based upon sound and current science.