



# TRANSPORTATION CORRIDOR CONCEPT REPORT UNITED STATES HIGHWAY 50



Transportation Corridor Concept Reports (TCCR) are Caltrans' long range (20-year) planning documents for each State Highway Route. The purpose and need of each TCCR are to identify existing route conditions and future needs, including existing and forecasted travel data, a concept level of service (LOS) standard, and the facility needed to maintain the concept LOS and address mobility needs over the next 20 years.

While this U.S. Highway 50 (US 50) TCCR presents travel data for all of US 50, Segment Summaries are provided only for the portion of US 50 from the Cedar Grove Exit to the Nevada State Line (Segments numbered 13 through 18). The US 50 Corridor System Management Plan (CSMP) now serves as the TCCR for US 50 from its origin at Interstate 80 in West Sacramento to the Cedar Grove Exit (Segments 1 through 12). The CSMP and the TCCR for US 50 combine to provide a comprehensive vision for all 108 miles of US 50.

## Approvals:

\_\_\_\_\_  
**Jeff Pulverman**  
District 3 Deputy Director  
Planning and Local Assistance

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Date

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District 3 Director

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Date

## **U.S. Highway 50 TCCR Summary of Major issues**

U.S. Highway 50 (US 50) is one of three remaining transcontinental routes signed with the U.S. Highway System shield. It begins at Interstate 80 (I-80) in West Sacramento and traverses portions of Yolo, Sacramento, and El Dorado Counties before passing into the State of Nevada. All 108 miles of US 50 in California lie within Caltrans District 3.

US 50 serves as a major east-west connector to I-5 and State Route (SR) 99, and interconnects with other major routes, including US 395 in Nevada. It is an Officially Designated Scenic Highway from its descent into Downtown Placerville to the western city limit of South Lake Tahoe.

Long-term planning for US 50 is addressed in two documents, the US 50 Corridor System Management Plan (CSMP) which addresses segments (numbered 1 to 12) from West Sacramento to the Cedar Grove Exit, and this TCCR, which addresses the remainder of the route from the Cedar Grove Exit to the Nevada State Line in South Lake Tahoe, which is divided into segments numbered from 13 to 18.

US 50 is part of the Interregional Transportation Strategic Plan and is classified as a “High Emphasis Route”, one of Caltrans’ highest priority route designations for interregional routes. High Emphasis Routes are intended to have priority for programming and construction to minimum facility standards in order to better assure that a statewide trunk system is in place and able to handle higher volume interregional trip movements between urbanized areas.

While LOS D is the District standard Concept Level of Service (LOS) standard for rural highway segments, it is not feasible to maintain LOS D on Segment 13 or on Segments 15 through 18, because of the monetary and environmental costs and impacts of creating additional capacity.

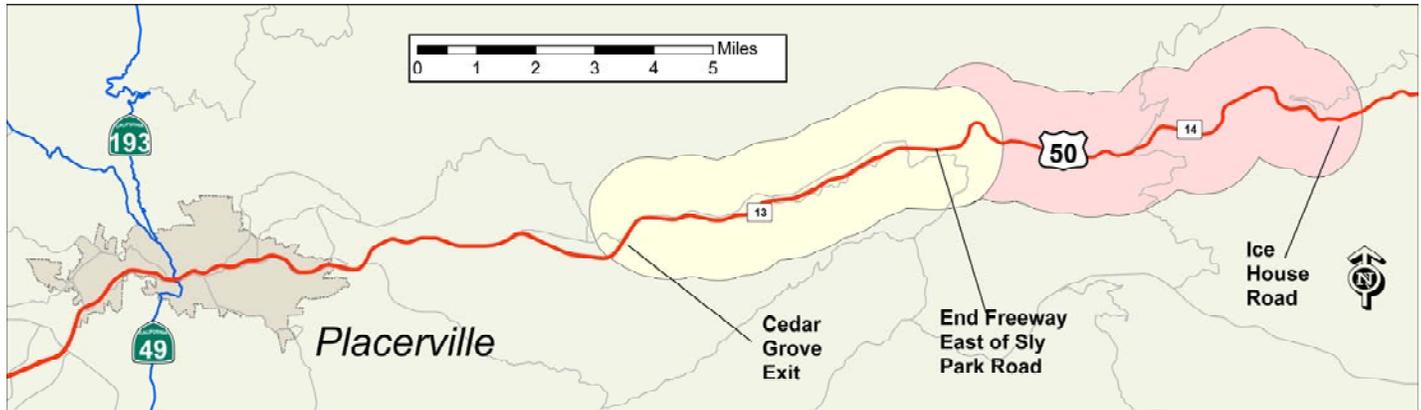
On US 50’s two-lane segments (15, 16, and 17), the Concept LOS F is a result of either low travel speed or drivers’ experience of the amount of time spent following other vehicles, or both. Additional passing opportunities and climbing lanes are needed on two-lane segments, but suitable locations for such improvements are limited due to horizontal curves. Where feasible, paved shoulders should be widened to an 8-foot standard width to improve traffic operations, to allow for enhanced pavement performance, to reduce maintenance, and to provide greater assurance of highway safety.

In the Lake Tahoe Basin (Segments 16, 17, and 18), complete streets policies including those formulated by the Tahoe Regional Planning Agency encourage innovation in areas such as winter operations and ITS. On Segment 18 in south Lake Tahoe, operational improvements are needed to enhance conditions near the Nevada State Line.

### **State and Local Responsibility**

Improvements to the State Highway System are the responsibility of both Caltrans and partner agencies. Developments affecting this Route and the regional State Highway System may necessitate local jurisdictions to provide nexus-based proportional fair-share funding for future highway improvements and other transportation system improvements.

# U.S. Highway 50 Segment 13 and 14 Summaries



**Segment 13 - Cedar Grove Exit to 0.67 miles east of Sly Park Road (R25.95/R31.97)**

Segment 13 is a 4-lane rural freeway that begins at the Cedar Grove Exit and ends at the freeway-to-conventional-highway transition east of Sly Park Road.

This segment currently operates at LOS D. While LOS is expected to decline to LOS F by 2028, no major capacity-increasing improvements are anticipated because of restricted right-of-way availability, adjacent development, and environmental impacts. Afternoon peak congestion is relatively brief.

**Segment 14, From 0.67 miles east of Sly Park Road to Ice House Road (R31.97/39.77)**

Segment 14 begins at the end of the last freeway portion of US 50 within California and descends to the South Fork of the American River at Ice House Road. Over this segment, US 50 is a rural highway beginning as three-lane conventional highway (with 2 full-service lanes westbound and one eastbound) for 2.0 miles, then a four-lane expressway for 5.3 miles, and then a three-lane conventional highway again for 0.3 miles. This variation in lane configuration is in response to varying terrain and steep grades.

The facility currently operates at LOS C. This segment is expected to maintain LOS C through the 20-year planning period. No major capacity-increasing improvements will be needed.

## Highway Improvement Projects

Construction Cost in Millions (M); Construction Completion Year

### Segment 13

Planned:

- ◆ Replace Bridge Deck over Sly Park Rd, \$5.9M, Funding in 2013/14 (2009 10-Year SHOPP Plan)
- ◆ Maintenance and Operations

Programmed:

- ◆ Construct wildlife crossings from Placerville to Strawberry, \$1.5M in Interregional Improvement (IIP) Transportation Enhancement (TE); Funding in 2010/11 (MTIP)
- ◆ Install changeable message signs and closed circuit television westbound Camino Weigh Station, \$626K shared with I-80; Funding in 2011/12 (2009 10-Year SHOPP Plan)

Conceptual:

- ◆ Support the development of parallel arterials for local trips and incident response.
- ◆ Mitigate LOS F impacts according to the County General Plan: "Traffic from residential development projects of five or more units or parcels of land shall not result in, or worsen, Level of Service 'F' (gridlock, stop-and-go) traffic congestion during weekday, peak-hour periods on any highway, road, interchange or intersection in the unincorporated areas of the County."

### Segment 14

Planned:

- ◆ Maintenance and Operations

Programmed:

- ◆ Rehabilitate culverts, \$4.3M Shared with Other Routes; Funding in 2009/10 (2008 SHOPP)
- ◆ Construct wildlife crossings from Placerville to Strawberry, \$1.5M in IIP TE; Funding in 2010/11 (MTIP)
- ◆ Install Intelligent Transportation Systems, \$4.6M Shared with Other Routes; Funding in 2011/12 (2009 10-Year SHOPP Plan)

Conceptual:

- ◆ Rehabilitate Pavement, Sly Park Road to Ice House Road, \$25M; Fund by 2025
- ◆ Drainage Rehabilitation, Carson Road to Sly Park Road, \$3.0M; Fund by 2025

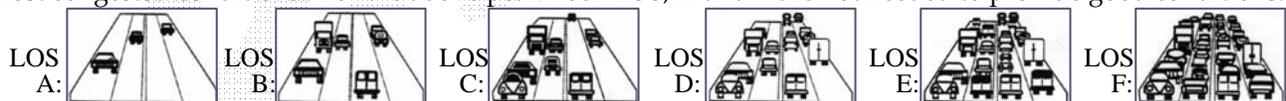
**SEGMENT SUMMARIES CONTINUE ON PAGE 6...**

# U.S. Highway 50 TCCR Data

Location					Forecasted Level of Service <sup>1</sup> (LOS) and Facility Type					
Segment	Description	County	From Post-Mile	To Post-Mile	Current LOS <sup>1</sup>	20-Yr No Build LOS <sup>1,2</sup>	20-Yr Concept LOS <sup>1,3</sup>	Existing Facility <sup>4</sup>	Concept Facility <sup>4,5,6</sup>	Ultimate Facility <sup>4,5,7</sup>
1	Interstate 80 to Yolo/Sacramento County Line	YOL	0.00	3.16	F	F	F	8F (6F btw Jefferson Blvd. ramps)	8F+2HOV+ Aux Lanes	8F+2HOV+ Aux Lanes
2	Yolo/Sacramento County Line to State Routes (SR) 99 and 51	SAC	L0.00	L2.48 = R0.00	F	F	F	8F	8F+2HOV+ Aux Lanes	8F+2HOV+ Aux Lanes
3	SR 99 and SR 51 to Watt Avenue	SAC	R0.00	R5.34	F	F	F	8F	8F+2HOV+ Aux Lanes	8F+2HOV+ Aux Lanes
4	Watt Avenue to Zinfandel Drive	SAC	R5.34	R10.92	F	F	F	8F	8F+2HOV+ Aux Lanes	8F+2HOV+ Aux Lanes
5	Zinfandel Drive to Sunrise Boulevard	SAC	R10.92	12.50	E	F	F	8F	8F+2HOV+ Aux Lanes	8F+2HOV+ Aux Lanes
6	Sunrise Boulevard to Folsom Boulevard	SAC	12.50	17.01	E	F	F	6F+2HOV to Hazel Ave., 4F+2HOV to Folsom Blvd.	6F+2HOV+ Aux Lanes to Hazel Ave., 4F+2HOV + Aux Lanes to Folsom Blvd.	8F+2HOV+ Aux Lanes
7	Folsom Boulevard to Sacramento/El Dorado County Line	SAC	17.01	23.14	D	F	F	4F+2HOV	4F+2HOV+ Aux Lanes	6F+2HOV+ Aux Lanes
8	Sacramento/El Dorado County Line to Cameron Park Drive	ELD	0.00	R6.57	E	F	F	4F	4F+2HOV+ Aux Lanes	6F+2HOV+ Aux Lanes
9	Cameron Park Drive to Missouri Flat Road	ELD	R6.57	R15.06	E	F	E	4F	4F+2HOV+ Aux Lanes to Greenstone Rd, 4F+ Aux Lanes to Missouri Flat Rd	6F+2HOV+ Aux Lanes to Greenstone, 4F+2HOV + Aux Lanes to Missouri Flat Rd
10	Missouri Flat Road to End of Freeway in Placerville	ELD	R15.06	17.25	D	F	F	4F	4F+ Aux Lanes	4F+ Aux Lanes
11	End of Freeway in Placerville to Bedford Avenue	ELD	17.25	18.11	D	E	E	4E	4E	4E
12	Bedford Ave. to Cedar Grove Exit	ELD	18.11	R25.95	D	F	F	4F to Smith Flat Rd, 4E to Camino, 4F to Cedar Grove	4F+ Aux Lanes to Smith Flat, 4E to Camino, 4F to Cedar Grove	4F+ Aux Lanes
13	Cedar Grove Exit to 0.67 mi. east of Sly Park Rd	ELD	R25.95	R31.97	D	F	F	4F	4F	4F
14	0.67 miles east of Sly Park Road to Ice House Road	ELD	R31.97	39.77	C	C	C	3C, 2.0 miles 4E, 5.3 miles 3C, 0.3 miles	3C, 2.0 miles 4E, 5.3 miles 3C, 0.3 miles	4E
15	Ice House Road to Echo Summit	ELD	39.77	66.63	E	F	F	2C; 0.35 mi. of 2-wy left turn lane	2C; 0.35 mi. of 2-wy left turn lane	2C; 0.35 mi. of 2-wy left turn lane
16	Echo Summit to SR 89 South	ELD	66.63	70.62	D	F	F	2C	2C	2C
17	State Route 89 South/Luther Pass Road to State Route 89 North/Lake Tahoe Blvd	ELD	70.62	75.45	E	F	F	2C, 4.23 miles 5C, 0.60 miles	2C, 4.23 miles 5C, 0.60 miles	4C, 4.10 miles 5C, 0.73 miles
18	State Route 89 North/Lake Tahoe Blvd to State of Nevada	ELD	75.45	80.44	C	F	F	4C with 2-way left turn lane	4C with 2-way left turn lane	4C with 2-way left turn lane

### Notes/Definitions

- Level of Service (LOS)**-A measure of traffic density conditions, with "A" representing the least amount of density and "F" the most congested conditions. For the above peak hour LOS, A and B are not needed to provide good conditions.



**LOS A** - Free Flowing Conditions.

**LOS B** - Speeds at or near free-flow speed, but presence of other users begins to be noticeable.

**LOS C** - Speeds at or near free-flow speed, but freedom to maneuver is noticeably restricted.

**LOS D** - Speeds begin to decline slightly with increasing flow; freedom to maneuver is more restricted.

**LOS E** - Operating conditions at or near roadway capacity. Even minor disruptions to the traffic stream can cause delay.

**LOS F** - Breakdown in vehicle flow. Queues form quickly behind point in the roadway where the arrival flow rate temporarily exceeds the departure rate.

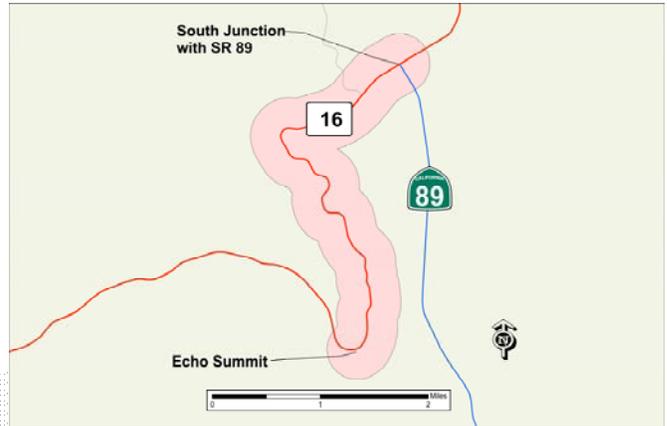
Note: For segments featuring one lane in either direction or intersection delay, LOS is experienced differently. On Segment 13, which is at LOS C in the Peak Hour, the 2.0-mile single eastbound lane experiences LOS F congestion that is atypical and nonrecurring<sup>11</sup>.

# U.S. Highway 50 TCCR Data *continued*

Location	Current Traffic Data – 2008					Prior 3 Years	Future Traffic Data – 2028				
Segment	Percentage of Trucks	Peak Directional Split <sup>8</sup>	Peak Hour Traffic	Average Annual Daily Traffic <sup>9</sup>	Volume over Capacity <sup>10</sup>	Reported Collision Rate Index (% Compared to State Average) <sup>12</sup>	Peak Hour Traffic	Average Annual Daily Traffic <sup>9</sup>	Volume over Capacity <sup>10</sup> (No-Build)	Volume over Capacity <sup>10</sup> (Build)	
1	6%	60%	15,370	178,080	1.09	+26.0%	23,911	277,032	1.69	1.36	
2	4%	59%	20,378	226,765	1.35	+19.8%	28,080	312,480	1.86	1.93	
3	4%	59%	21,423	219,450	1.45	+24.2%	27,942	286,230	1.89	1.66	
4	4%	59%	17,535	194,250	1.15	-32.2%	24,783	274,540	1.63	1.36	
5	4%	60%	14,175	156,450	0.93	-32.9%	20,331	224,394	1.33	1.10	
6	4%	66%	12,826	134,620	0.89	-14.1%	18,888	198,247	1.31	1.40	
7	3%	66%	8,692	98,580	0.87	-11.3%	13,341	151,311	1.33	1.36	
8	4%	61%	7,314	74,200	0.95	-35.4%	11,454	116,200	1.65	1.14	
9	4%	62%	6,042	65,720	0.92	-60.9%	8,647	94,054	1.32	0.96	
10	4%	57%	4,988	53,550	0.69	+20.0%	7,101	76,245	0.98	1.02	
11	4%	55%	4,968	55,890	N/A <sup>11</sup>	+81.1%	6,595	74,196	N/A <sup>11</sup>	N/A <sup>11</sup>	
12	4%	62%	4,275	39,655	0.77	+6.2%	5,474	50,782	0.99	0.99	
12	4%	62%	4,275	39,655	0.77	-7.0%	5,474	50,782	0.99	0.99	
13	5%	65%	2,204	13,120	0.46	+8.5%	2,741	16,320	0.57	0.57	
14	3%	65%	1,948	13,530	0.71 <sup>11</sup>	-50.9%	2,423	16,830	0.89 <sup>11</sup>	0.89 <sup>11</sup>	
15	3%	65%	1,538	9,225	0.56 <sup>11</sup>	-24.6%	1,913	11,475	0.88 <sup>11</sup>	0.88 <sup>11</sup>	
16	3%	55%	2,511	19,988	0.91 <sup>11</sup>	-45.5%	3,124	24,863	1.14 <sup>11</sup>	1.14 <sup>11</sup>	
17	3%	55%	3,290	36,494	N/A <sup>11</sup>	-59.4%	4,186	46,434	N/A <sup>11</sup>	N/A <sup>11</sup>	

2. **20-Year LOS (No Build)**–The LOS that would be expected at 20 years with no improvements.
3. **20-Year Concept LOS**–The minimum acceptable LOS over the next 20 years.
4. **Facility Type Codes**–C = Conventional Highway; E = Expressway; F = Freeway; HOV = High Occupancy Vehicle lanes; Aux = Auxiliary lanes.
5. **Operational Improvements** are included in future facilities for all segments. Examples of operational improvements include Traffic Operations Systems improvements and Auxiliary Lanes.
6. **Concept Facility**–The future roadway with improvements needed in the next 20 years. If LOS “F”, no further degradation of service from existing “F” is acceptable, as indicated by delay performance measurement
7. **Ultimate Facility**–The future roadway with improvements needed beyond a 20 year timeframe.
8. **Peak Directional Split**–The percentage of total traffic in the heaviest traveled direction during the peak hour.
9. **Average Annual Daily Traffic (AADT)**–The average number of vehicles per day in both directions.
10. **Volume over Capacity (V/C)**–The volume of traffic compared to the capacity of the roadway.
11. **Volume over Capacity does not determine LOS** for two- or three- lane facilities, or segments with intersection delay.
12. **Reported Collision Rate Index (% Compared to State Average)**– The percentage by which each segment’s reported collisions rate (fatal, injury, and property-damage-only) is above or below the statewide average reported collisions rate on comparable facilities. Source: 3-Year Caltrans Traffic Accident Surveillance and Analysis System data.

# U.S. Highway 50 Segment 15 & 16 Summaries



## Segment 15 - Ice House Road to Echo Summit (39.77/66.63)

Segment 15 is a 2-lane conventional highway with six extents of passing lanes in both directions, two extents of eastbound-only passing lanes, and short extents with a two-way left-turn lane in Strawberry (0.10 mi.) and Twin Bridges (0.25 mi.). Joining the South Fork of the American River up to Twin Bridges, US 50 then rises on a steep grade to Sayles Flat. From there, Segment 15 climbs to Echo Summit.

The facility currently operates at LOS E. It is not feasible to provide enough passing opportunity in 20 years to avoid LOS F. However, a limited, targeted approach could provide more regular spacing between passing opportunities. Adding eastbound passing lanes to Segment 15 would provide more utility because the lanes tend to run uphill and because peak eastbound traffic is greater than peak westbound traffic.

## Segment 16 - Echo Summit to South Junction with SR 89 (66.63 to 70.62)

Segment 16, a two-lane conventional highway, descends almost 1,000 feet from Echo Summit to the junction of US 50 and SR 89 South on an average grade of 4.5%, with some steeper sections. From 0.1 to 0.8 miles east of the summit, Segment 15 is cut into rock faces with the roadway supported by rock wall abutments on the downhill side. Roadway shoulders are either very narrow or non-existent. Several small turn-outs are available along the eastbound lane.

The facility currently operates at LOS D, but on peak weekends, LOS F can occur due to heavy recreational traffic. LOS is expected to decline over the 20-year planning period. It is considered infeasible to add lanes due to the environmental sensitivity of the area and the topography.

## Highway Improvement Projects

Construction Cost in Millions (M); Construction Completion Year

### Segment 15

#### Planned:

- ◆ Maintenance and Operations.

#### Programmed:

- ◆ Construct Wildlife Crossings between Placerville and Strawberry, \$1.5M in IIP TE; Funding in 2010/11 (MTIP)
- ◆ Install Intelligent Transportation Systems, \$4.6M Shared with Other Routes; Funding in 2011/12 (2009 10-Year SHOPP Plan)

#### Conceptual:

- ◆ Drainage Rehabilitation, South Fork American River Bridge near Riverton to Wright Lake Road, \$3.5M; Fund by 2025
- ◆ Investigate additional passing lanes targeted to provide more regular spacing of passing opportunities.

### Segment 16

#### Planned:

- ◆ Maintenance and Operations

#### Programmed:

- ◆ Upgrade Rock Retaining Wall/Guard Wall, 0.1 to 1.2 miles east of Echo Summit Rd, \$8.9M, Funding in 2010/11 (2009 10-Year SHOPP Plan)
- ◆ Water Quality Improvements, Echo Summit to Old Meyers Grade Rd, \$1.2M, Funding in 2010/11 (2009 10-Year SHOPP Plan)
- ◆ Water Quality Improvements, Old Meyers Grade Rd to 0.1 mile east of Incline Rd, \$46.1M, Funding in 2011/12 (2009 10-Year SHOPP Plan)

#### Conceptual:

- ◆ Replace Echo Summit Viaduct with new structure.
- ◆ Investigate additional westbound passing opportunities.

# U.S. Highway 50 Segment 17 & 18 Summaries



## Segment 17 - South Junction with SR 89 to North Junction with SR 89 (70.62/75.45)

Segment 17 begins as a 2-lane conventional highway with a two-way left turn lane passing through the unincorporated community of Meyers. At Pioneer Trail, it becomes a 2-lane highway with narrow shoulders. After passing into the City of South Lake Tahoe, it becomes a 4-lane facility with a two-way left turn lane at PM 74.84. The segment ends at the South Wye (“Y”), where SR 89 continues north and US 50 turns east.

During Sunday-peak and seasonal congestion, westbound traffic will sometimes queue back from Echo Summit all of the way to the Wye. Traffic leaving South Lake Tahoe via Pioneer Trail adds to peak congestion. The facility currently operates at LOS E, and is expected to decline to LOS F by 2028. Though improvement to 4 lanes is envisioned beyond 2028, studies may recommend 4 lanes before 2028 in some locations.

## Segment 18, North Junction with SR 89 to the Nevada State Line (75.45/80.44)

Segment 18 is a 4-lane conventional urban arterial with a center turn lane. This is the “main street” of South Lake Tahoe. Most of the commercial, tourist, and recreational uses are located along this segment and there are many individual driveways. The segment ends at the Nevada State line.

This segment operates at LOS C in weekday peak hours, but existing peak summer traffic causes significant congestion. There are 14 signalized intersections along this segment. Further signal synchronization will help improve operations and reduce congestion. Sidewalk conditions vary significantly along the route. Programmed (STIP and SHOPP) and planned projects will rehabilitate sidewalks to ADA compliant conditions. Class II bike lanes are also proposed.

## Highway Improvement Projects

Construction Cost in Millions (M); Construction Completion Year

### Segment 17

#### Planned:

- ◆ Synchronize Signals, Meyers to Stateline, \$3.2M; 2010 (RTP)
- ◆ Intersection Improvements, US 50/Apache Ave, \$374K, 2012 (RTP)
- ◆ Maintenance and Operations

#### Programmed:

- ◆ Water Quality Improvement Project, South Tahoe Airport to Route 89, \$22.1M, Funding in 2011/12 (2009 10-Year SHOPP Plan)
- ◆ Class II bike lanes and sidewalk rehabilitation, Portion of \$56M shared with Segment 17 projects; Year 2012 (RTP)

#### Conceptual:

- ◆ Participate in El Dorado County’s Meyers Highway Corridor Operations Study; operational strategies considered could include a roundabout or nontraditional connection at US 50/ Pioneer Trail and/or extension of westbound channelization in the vicinity of the Pioneer Trail intersection.
- ◆ Mitigate LOS F impacts to the unincorporated portion of Segment 17 from residential development in accordance with the County General Plan (See Segment 13 for excerpt). Because residential developments of five or more units are rare, contributions from impact fees will be low.

### Segment 18

#### Planned (RTP is Source unless otherwise noted):

- ◆ Create new loop road, Park Ave to Stateline, \$113M, 2022
- ◆ Synchronize Signals, Meyers to Stateline, \$3.2M; 2010
- ◆ Intersection Improvements, US 50/Sierra Blvd., \$849K, 2011
- ◆ Class II bike lanes and sidewalk rehabilitation, North Junction SR 89 to Trout Creek, Portion of \$56M; Year 2012

#### Programmed:

- ◆ Water Quality Improvements, SR 89 North to Trout Creek \$38.2M; Funding in 2001/11 (2009 10-Year SHOPP Plan)
- ◆ Water Quality Improvements, Trout Creek to Ski Run Bl., \$33.4; Funding in 2009/10 (2008 SHOPP)
- ◆ Water Quality Improvements, Ski Run Blvd. to Nevada State Line, \$7.7M; Funding in 2010/11 (2008 SHOPP)
- ◆ Add Curb, Gutter, Sidewalk, and Class II Bike Lane, Trout Creek to Ski Run Bl., \$25.5M (Portion of \$56M in RTP), Funding in 2009/10 (RTIP)

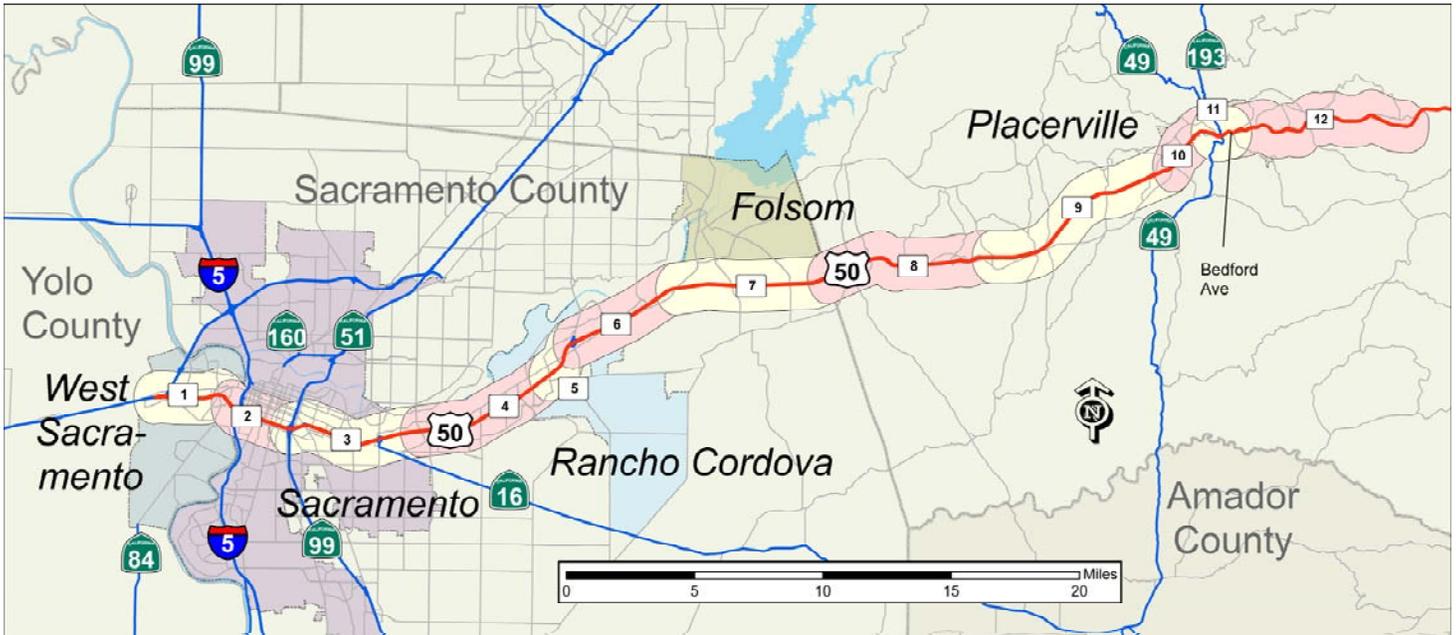
#### Conceptual:

- ◆ Encourage consolidation of driveways and other access management measures in order to preserve capacity/reduce congestion/reduce travel times and to improve safe access for and between pedestrians, bicyclists, transit, and other modes.

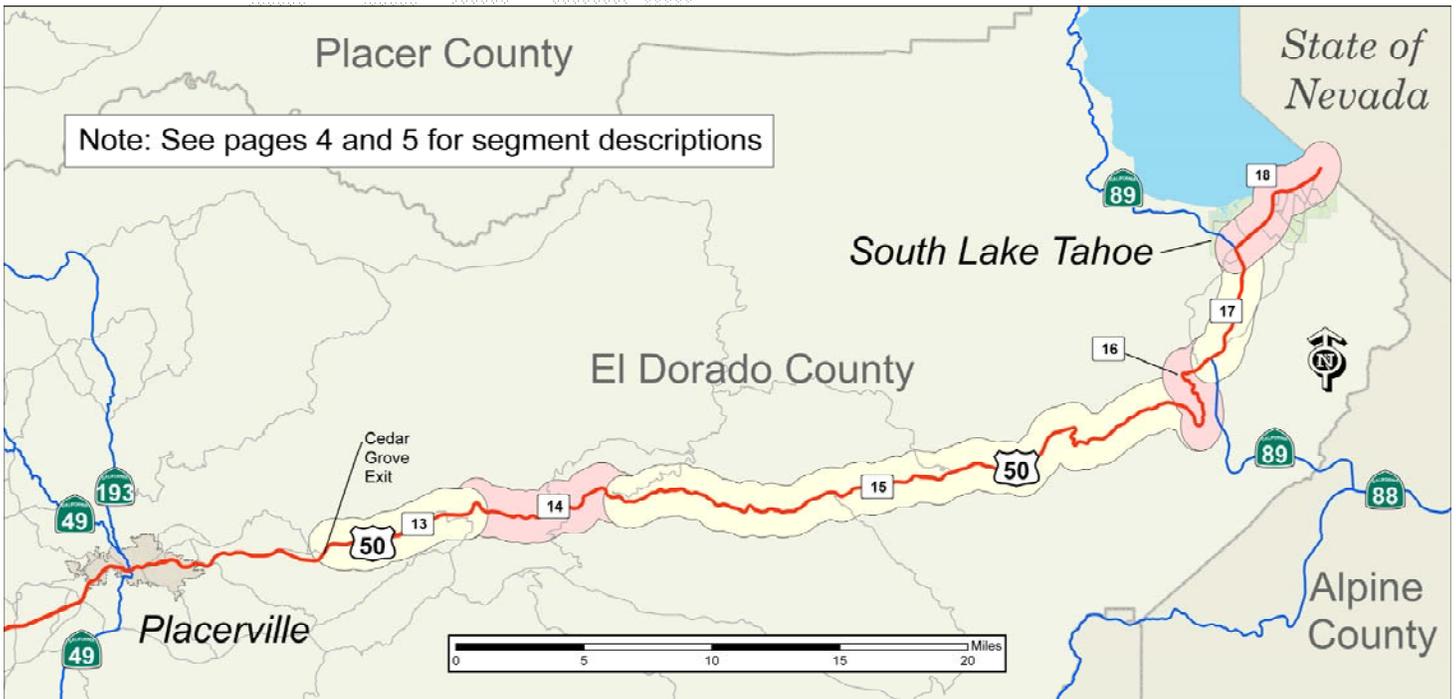


# U.S. Highway 50 Segmentation Maps

Segments Described in the CSMP and Segments Described in this TCCR



Map of Segments 1-12; No Segment Summaries Provided in this TCCR (See CSMP)



Map of Segments 13-18; Segment Summaries Included in this TCCR

Please contact below for questions and concerns about this TCCR:

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Caltrans District 3 Website - <http://www.dot.ca.gov/dist3/>

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