

DEPARTMENT OF TRANSPORTATION

DISTRICT 3

703 B STREET

MARYSVILLE, CA 95901

PHONE (530) 741-4233

FAX (530) 741-4245

TTY 711

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September 25, 2013

Kimberly A. Kerr, Acting Director
El Dorado County Community Development Agency
2850 Fairlane Court
Placerville, CA 95667-4197

Dear Ms. Kerr:

Thank you for your letter dated September 13, 2013, wherein you posed a series of questions related to Level of Service (LOS), performance measures, planned state highway improvements, and PeMS data regarding US Highway 50 (US 50) within El Dorado County.

Your questions and our responses are as follows:

1. *How does Caltrans calculate LOS on U.S. Highway 50 (i.e., by use of the Highway Capacity Manual 2010 Planning-level analysis, Design-Level analysis, Operational-level analysis methodologies or other methodologies)? Were HOV and/or Auxiliary lanes and volumes considered? Which performance measure or alternative tools are used in the determination of service flow rates? If a 15-minute analysis period under prevailing conditions was assumed, what peak-hour factor was applied?*

LOS calculations used in the Caltrans District 3 System Planning Program documents are derived from a *Highway Capacity Manual 2010* freeway planning-level analysis. Highway Capacity Software 2010 is used in conjunction with several data sources, including:

- Traffic Volumes on California State Highways
- Annual Average Daily Truck Traffic on California State Highways
- California Highway Log
- Caltrans Digital Photolog

HOV and auxiliary lane volumes are excluded from the mixed flow LOS Calculations, since including the HOV lanes would not provide an accurate indicator of the LOS for the mixed flow lanes. HOV lane LOS calculations are derived separately. Peak Hour Factors are used in the LOS calculations. The *Highway Capacity Manual 2010* states that typical freeway Peak Hour Factors range from 0.85 to 0.98. In our planning level studies, default values from the Highway Capacity Software are used because of data limitations. These values are 0.94 for urban freeways and 0.88 for rural freeways.

2. *What effect, if any, does construction activity on the highway or within Caltrans Right-of-Way have on the LOS measurements or projections? Do temporary delays during such construction factor into the LOS analysis? If LOS is calculated during construction activity is it annotated as such? Does LOS analysis reflect accident/incident history on U.S. Highway 50?*

Construction activity has minimal or no effect on LOS calculations because the traffic volumes used from the annual *Traffic Volumes on California State Highways* take sample counts, schedule counts to avoid routes with construction activity and make adjustments to compensate for seasonal influence, weekly variations and other variables which may be present. These normalized volumes are then used to calculate LOS.

3. *What has Caltrans determined the LOS to be along U.S. Highway 50 within El Dorado County? Specifically, what is LOS determined to be from the West County line on U.S. Highway 50 to Cameron Park Drive?*

As part of the Caltrans System Planning Program, every State Highway System route is analyzed on a segment by segment basis based on the Highway Capacity Manual 2010 freeway analysis and plans for the route are summarized in documents entitled "transportation concept reports" (TCRs) and "Corridor System Management Plans (CSMPs)". Route segmentation for both the CSMPs and TCRs is based on political boundaries, geometric changes in the route facility and significant changes in traffic volumes.

The LOS on US 50 for the segment between the Sacramento/El Dorado County Line and Cameron Park Drive is currently operating at LOS E. However, the portion of the segment from the County Line to the El Dorado Hills Blvd. Interchange operates at LOS F during the peak hour.

4. *What does Caltrans project the LOS to be on Highway 50 through 2035 within El Dorado County?*

The projected 2035 LOS for segments of US 50 in El Dorado County, as currently indicated in our latest draft US 50 TCR and draft US 50 CSMP, are indicated in the following table:

DRAFT US 50 CSMP				
Location		Current Traffic Data 2012	Future Traffic Data-2035 (No Build)	Future Traffic Data-2035 (Build)
County	Description/Location	LOS	LOS	LOS
ED	SAC/ED County Line to Cameron Park Drive	E	F	F
ED	Cameron Park Drive to Missouri Flat Road	D	E	D
ED	Missouri Flat Road to End of Freeway in Placerville	D	D	E
ED	End of Freeway in Placerville to Bedford Avenue	C	C	C
ED	Bedford Avenue to Cedar Grove Exit	C	C	C
DRAFT US 50 TCR				
Location		Current Traffic Data 2012	Future Traffic Data-2035 (No Build)	Future Traffic Data-2035 (Build)
County	Description/Location	LOS	LOS	LOS
ED	Cedar Grove Exit to 0.67 mi east of Sly Park Road	B	C	C
ED	0.67 mi east of Sly Park Road to Ice House Road	B	C	C
ED	Ice House Road to Echo Summit	E	F	F
ED	Echo Summit to State Route 89 South/Luther Pass Road	E	E	E
ED	State Route 89/Luther Pass Road to State Route 89North/Lake Tahoe Blvd	E	F	F
ED	State Route 89 North/Lake Tahoe Blvd to Nevada State Line	E	F	F

The LOS information above includes both the "Build" and "No Build" scenarios. The "No Build" scenario assumes no improvements are made to US50. The "Build" scenario assumes the construction of the projects indicated in Attachment A.

5. *What population growth rate was assumed by Caltrans in the LOS projection for U.S. Highway 50 in El Dorado County through 2035?*

The Sacramento Area Council of Governments' (SACOG) SACSIM model was used to determine the growth of traffic volumes and the impact of potential projects on those volumes. The boundary of the SACSIM model ends at the summit, from that point growth factors were developed using a linear regression methodology.

6. *What Caltrans improvements are planned and assumed in the LOS projection for U.S. Highway 50 in El Dorado County through 2035?*

The improvements indicated in Attachment A are included in our projected 2035 LOS calculations based on the projects' inclusion in the latest financially constrained long-range plans of SACOG, the El Dorado County Transportation Commission (EDCTC) and the Tahoe Regional Planning Agency.

7. *What are the parameters and assumptions used for the PeMS data? How do these parameters and assumptions relate to question #1?*

In our planning documents, PeMS is used to report various outcome performance measures, including peak hour speeds, peak hour and daily vehicle hours of delay, peak hour and daily vehicle miles of travel and specific bottleneck data. Since these performance measures are used to describe recurrent congestion, we only capture and report data from Tuesdays, Wednesdays and Thursdays.

Your letter also indicated that mention has been made that Caltrans has no plans to provide any improvements to US 50 during the next 20 years. Caltrans does, in fact, have plans to improve US 50 during the next 20 years. These projects are indicated in Attachment A. However, these projects will not prevent certain segments of US 50 from operating at LOS F, as indicated in the table.

Caltrans is currently updating our CSMP and TCR for the entire length of US 50 in California. It is likely that the route segmentation may change from that used in the current Plan to more accurately reflect operating conditions, such as including a separate segment from the County Line to the El Dorado Hills Blvd. Interchange. Also, our *District System Management and Development Plan*, which provides guidance for the System Planning Program, indicates a concept level of service standard (lowest acceptable LOS) of D for rural areas and E for urban areas. At this juncture, we intend to include those standards in our plan for US 50. For those segments of US 50 which are projected to fall below these standards, we will identify the US 50 improvement projects which must be built to maintain the concept LOS standard. We look forward to sharing a draft of this Plan with you in the next few months.

The determination of LOS is a complicated process with many variables. We also fully realize that LOS indicators are a key ingredient in how the El Dorado County Board of Supervisors implements Measure Y and makes other decisions. Therefore, we would like to meet with you,

SACOG and EDCTC to come to a consensus agreement on how to mutually determine and report LOS for US 50 in El Dorado County. We will schedule this meeting for as soon as feasible and look forward to continuing our close working relationship.

Meanwhile, if you have any additional questions, please contact Susan Zanchi, Acting Chief, Office of System Management Planning and Project Delivery at (530) 741-4199 or via email at susan.zanchi@dot.ca.gov.

Sincerely,


JODY JONES
District Director

c: David Defanti, El Dorado County CDA Assistant Director
Claudia Wade, El Dorado County CDA Long Range Planning Division
Natalie Porter, El Dorado County CDA Long Range Planning Division
Sharon Scherzinger, EDCTC
Nathan Strong, City of Placerville
Jeff Pulverman, Deputy District Director, Planning & Local Assistance, Caltrans
Nieves Castro, Supervising Transportation Planner, Planning & Local Assistance, Caltrans

JJ/tw

US 50 Planned and Programmed State Highway Projects

County	Rte	Post Mile Limits	Project Lead	Project Name	Project Description	Type of Project	Agency Source	Estimated Total Cost (1,000s)	Proposed Completion Year
ELD	50	16.276	City of Placerville	Western Placerville Interchanges (Ph 1B)	Realign Fair Lane to correct a non-standard curve and construct Class II Bike Lanes, sidewalks and retaining walls.	Bike Lanes/ Pedestrian Ramp Improvements	MTP	\$820	2014
ELD	50	18.517	City of Placerville	US 50 Broadway EB signalization and lengthening	Lengthen EB exit ramp of US 50 at Broadway and install traffic signal	Signalization and Ramp Improvements	MTP	\$2,000	2035
ELD	50		ELD County	US 50 WB Auxiliary Lane - Silva Valley Parkway to Empire Ranch Rd	Construct new WB auxiliary lane within median of US 50 between Silva Valley Parkway and Empire Ranch Rd future new interchanges.	Auxiliary Lanes	MTP	\$2,500	2035
ELD	50	R14.01	ELD County	US 50/EI Dorado Rd Interchange Improvements (Ph.1)	Includes signalization and widening of existing ramps	Interchange Improvements	MTP	\$3,538	2035
ELD	50	0.00/ 0.86	ELD County	US 50 Widen and WB Auxiliary Lane - EI Dorado Hills to Empire Ranch Rd	Widen US 50 and add auxiliary lane to WB US 50 connecting the EI Dorado Hills Blvd/ Latrobe Rd Interchange to the future Empire Ranch Rd interchange located in Folsom. Construction to be concurrent with or after the EI Dorado Hills Blvd JIC.	Widen US 50; Auxiliary Lanes	MTP	\$3,988	2035
ELD	50	R1.65	ELD County	US 50/Silva Valley Pkwy Interchange (Ph 2)	Final Phase of new interchange: construct EB diagonal and WB loop on-ramps to US 50	New Interchange	MTP	\$14,200	2035
ELD	50	4.96/ R8.56	ELD County	US 50 Auxiliary Lane EB - Cambridge to Ponderosa	EB US 50 auxiliary lane between Cambridge Rd and Ponderosa Rd interchanges	Auxiliary Lanes	MTP	\$14,550	2035
ELD	50	EB 4.96/6.57 WB 6.57/R3.23	ELD County	US 50 Auxiliary Lane at Cambridge Road	EB US 50 between Cambridge Rd and Cameron Park Dr interchanges; and WB between Cameron Park Dr and Bass Lake Rd interchanges. Includes bridge widening to add two lanes and ramp widening.	Auxiliary Lanes	MTP	\$15,500	2035
ELD	50	0.86	ELD County	US 50/EI Dorado Hills Blvd Interchange Westbound ramps	Final Phase: Construct new WB off-ramp undercrossing, improve WB on/off-ramps with dedicated HOV on-ramp lane, ramp metering and 1,000 ft merge lane.	Interchange Improvements	MTP	\$19,160	2015
ELD	50	R15.06	ELD County	US 50/Missouri Flat Rd Interchange Improvements (Phase 2)	Highway and interchange improvements for additional traffic capacity needed to accommodate local development projects.	Interchange Improvements	ELD County	\$20,000	2035
ELD	50	R1.65/R3.23	ELD County	US 50/ Bass Lake Rd Interchange (Ph. 1); WB Auxiliary Lane	Interchange Improvements: Phase 1, ramp widening, road widening, signals and WB auxiliary lane between Bass Lake and Silva Valley interchanges. Phase 1 assumes bridge replacement.	Interchange Auxiliary Lanes	MTP	\$20,828	2035
ELD	50	R8.56	ELD County	US 50/Ponderosa Rd North Shingle Rd Realignment	Realign approximately 1/4 mile of Durock Rd to Sunset Ln and signalize new intersection. Durock Rd will be two through lanes with turn pockets at the intersection and center turn lane.	Interchange Improvements	MTP	\$5,020	2024
SAC	50	R9.51	City of Rancho Cordova	Mather Field Rd./US 50 Interchange	Interchange Modification: at U.S. 50/Mather Field Rd.	Interchange Improvements	MTP	\$5,647	2025
ELD	50	0.86	ELD County	US 50/EI Dorado Hills Blvd Interchange Eastbound Ramps	Reconstruct EB diagonal on-ramp and EB loop off-ramp for the ultimate configuration; add a lane to NB EI Dorado Hills Blvd under the overpass (eliminates merge lane and improves traffic flow from the EB loop off-ramp); EB diagonal on-ramp will be metered with an HOV bypass.	Interchange Improvements	MTP	\$5,904	2035
ELD	50	6.57/ R8.56	ELD County	US 50 Bus/Carpool Lanes (Phase 2B)	Phase 2B: US 50- Cameron Park Dr to Ponderosa Rd Interchange - Add HOV lanes in median. PA&ED completed by Caltrans, and Caltrans advancing project design through Co-Op Agreement with the County. Interoperational Agreement between the County and Shingle Springs Band of Miwok Tribe for funding.	Bus/Carpool Lanes	MTP/MTI P	\$22,637	2025
ELD	50	R8.56	ELD County	US 50/Ponderosa Rd Interchange Durock Rd Realignment	Realign approximately 1/4 mile of Durock Rd to Sunset Ln and signalize new intersection. Durock Rd will be two through lanes with turn pockets at the intersection and center turn lane.	Interchange Improvements	MTP	\$7,151	2026
ELD	50	R14.01	ELD County	US 50/EI Dorado Rd Interchange Improvements (Ph.2)	Construction of left- and right-turn lanes and additional through traffic lanes in all approaches to the interchange	Interchange Improvements	MTP	\$7,285	2035
ELD	50	15.29/16.503	City of Placerville	US 50 Western Placerville Interchanges (Ph 1A)	At US 50/Ray Lawyer Dr. Construct WB access ramp from R. Lawyer Dr onto US50. Auxiliary lane between WB access ramp and existing WB off-ramp at Placerville Dr	Interchange Improvements, Operational Improvements	MTP	\$9,215	2014

ELD	50	4.96	ELD County	US 50/ Cambridge Rd Interchange Improvements (Ph. 1)	Includes widening existing EB and WB on/off-ramps; addition of new WB on-ramp; reconstruction of local intersections; and installation of traffic signals at EB and WB ramp terminal intersections; preliminary engineering for Phase 2 to be performed under Phase 1.	Interchange Improvements	MTP	\$10,645	2035
ELD	50	R3.23/4.96	ELD County	US 50 Auxiliary Lane at Bass Lake Road	WB US 50 between Bass Lake Rd and Cambridge Rd Interchanges. Includes additional ramp and road widening.	Auxiliary Lanes	MTP	\$23,640	2035
ELD	50	R8.56/R12.19	ELD County	US 50 Bus/Carpool Lanes (Ph 3)	Phase 3: US 50-Ponderosa Road to Greenstone Road	Bus/Carpool Lanes	MTP	\$34,730	2035
SAC	50	16.9/ 17.2	CT	Natomas OC Ramp Meter & Widening	Add ramp meter and widen Natomas OC	Transportation Management Systems	SHOPP	\$3,240	2020
SAC	50	12.50/21.50	CT	US 50 Auxiliary Lane	Add Aux Lane(s) - EB from Sunrise to Scott	Auxiliary Lanes	CT	\$3,500	2025
ELD	50	R6.56	ELD County	US 50/Ponderosa Rd/So Shingle Rd Interchange Improvements	Widen existing US 50 overcrossing to accommodate 5 lanes, and realignment of WB loop on-ramp, ramp widening, and widening of Ponderosa Rd, Mother Lode Dr, and So. Shingle Rd.	Interchange Improvements	MTP	\$16,399	2028
SAC	50	21.5	City of Folsom	US 50 at Scott Road	Ramp modifications and overpass widening for US 50/East Bidwell/Scott Road interchange to improve access to development south of US 50.	Capacity Enhancement	MTP	\$3,740	2020