

# US 50 Strategic Corridor Operations Study

*Ponderosa Road to Mather Field Road*



Prepared for:  
El Dorado County  
Department of Transportation

Submitted by:

**Dowling Associates, Inc.**

Transportation Engineering • Planning • Research • Education



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January 2006

# ***Dowling Associates, Inc.***

*Transportation Planning, Engineering, and Research*

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January 31, 2006

Mr. Steve Borroum  
Deputy Director  
El Dorado County Public Works  
2850 Fairlane Court  
Placerville, CA 95667

**Subject: US 50 Strategic Corridor Operations Planning Study**

P05-063

Dear Mr. Borroum:

Dowling Associates is pleased to present this report for the US 50 Freeway Strategic Corridor Operations Planning Study.

The purpose of this study has been to more precisely determine the needed improvements to US 50 within the next 20 years. Prior planning studies, such as the county's General Plan, had determined that additional capacity was needed in the corridor at General Plan buildout, but not whether this capacity was needed within the next 20 years, and where precisely this capacity was needed.

I would like to thank Mr. Russ Nygaard and Mr. Craig McKibbin of El Dorado County Public Works for their assistance during this project, providing data, aerial photos, interchange improvement plans, previous study reports, and advice.

I would like to give credit to the several engineers and planners at Dowling Associates who contributed to this effort. Mr. Jaskamal Singh conducted the freeway operations analysis. Mr. Franklin Cai developed the traffic forecasts. Mr. John Dillon supervised the selection of planning models for the traffic forecasts.

Please give me a call at extension 302 if you have any questions.

Sincerely,

**Dowling Associates**



Richard G. Dowling, Ph.D., P.E.  
Principal

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# 1.0 Introduction

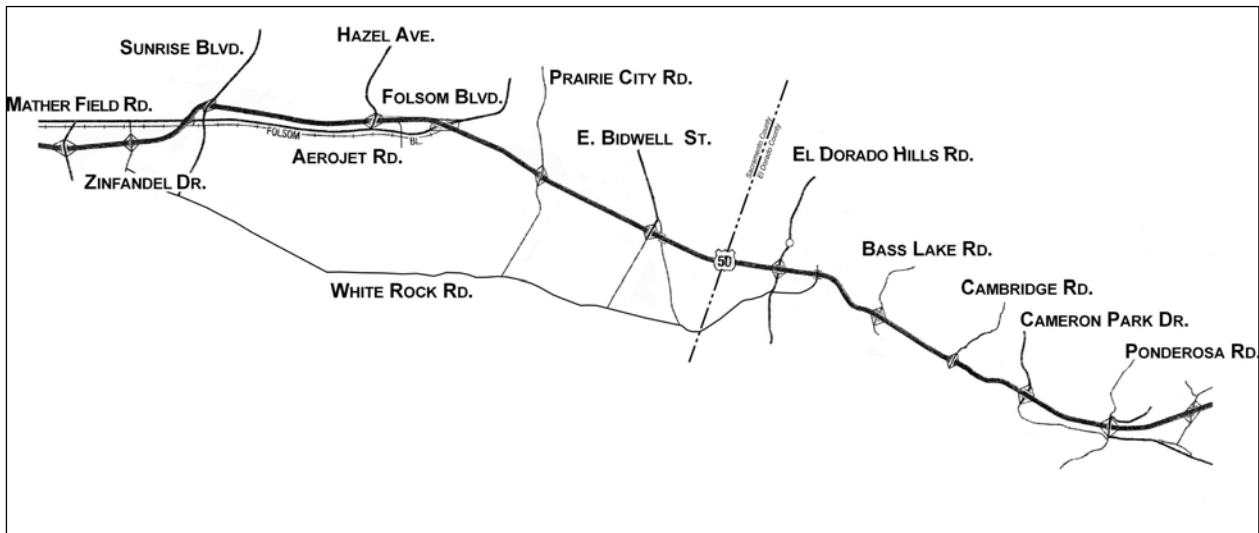
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The 2004 El Dorado County General Plan identifies the widening of the US 50 freeway between the Sacramento County line and Ponderosa Road as a needed improvement to serve the projected growth through the year 2025. The purpose of this study has been to develop a conceptual design for these improvements to US 50.

## Study Focus Area

The study area covers a total of 24 miles of the US 50 freeway from Ponderosa Road in El Dorado County to Mather Field Road in Sacramento County. The study boundary was expanded to include US 50 in Sacramento County in recognition of the impacts of planned growth in the cities of Folsom and Rancho Cordova on future US 50 operations.

**Exhibit 1. US 50 Study Corridor**



## Approach

Existing 2003 and forecasted 2025/2027 AM and PM peak period conditions were evaluated for the freeway. Freeway operations were evaluated for two 4-hour peak periods (6-10 AM, 3-7PM).

Counts of ramp and mainline traffic for the 4-hour peak periods in 2003 were obtained from Caltrans.

The SACMET model (MTP 2027 version) was used to develop AM and PM Peak 4-hour period forecasts for US 50 because the Sacramento County portion of US 50 included in the study area lies outside of the boundaries of the El Dorado County Travel Demand Model. It was also desired to produce traffic forecasts for US 50 consistent with the 2027 Metropolitan Transportation Plan, adopted in 2005.

The SACMET model forecasts for US 50 inside El Dorado County were compared to the 2025 forecasts produced by the El Dorado County model for the 2004 General Plan and separate improvements developed to address the two different traffic forecast levels produced by the two models. In addition, a combined set of improvements was developed that addresses the maximum forecast produced by the two models for any given directional segment of the freeway.

The FREQ model, developed by Dr. Adolf May of the University of California for Caltrans, was used to evaluate existing and future freeway mainline, merge, and weaving operations for each hour of each peak period. The FREQ model was calibrated against Caltrans congestion data and field observations of backups.

## Conclusions

The study concludes that a total of 10.6 lane-miles of HOV lanes and 9.9 lane-miles of auxiliary and through lane additions are required within El Dorado County to maintain level of service “E” conditions on US 50 for both weekday peak periods through the year 2025.

An additional 3.9 lane-miles of HOV lanes and 8.7 lane-miles of auxiliary lane and through lane additions are required within Sacramento County to maintain level of service “E” conditions on US 50 east of Mather Field Road.

Details on the recommended improvements for 2025 can be found in Chapter 4, Recommended Freeway Improvements.

Chapter 5 provides recommendations for interim improvements for the year 2015.

## 2. Freeway Operations Model

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This chapter describes the development and calibration of the freeway operations model used in this freeway corridor study.

### Freeway Operations Model Selection

The University of California, Institute of Transportation Studies, FREQ model was selected to identify future freeway operations problems and to test various improvement alternatives. This model was selected because of the ease with which it can be quickly coded and validated, and because it produces outputs that can be readily used to determine the potential effectiveness of various capacity improvement options.

The development of the FREQ program has been sponsored by Caltrans for over 30 years. FREQ is used in most all Caltrans district offices to assess freeway facility operations. More information on the FREQ model can be found at <http://www.its.berkeley.edu/computing/software/FREQ.html>.

The latest 2005 edition of FREQ, the FREQ12 model with combined HOV Lane and Ramp Metering modules was used in this freeway corridor study.

FREQ is a macroscopic freeway facility operations simulation model based on the classical speed-flow and density-flow relationships. FREQ evaluates one direction of freeway travel at a time. The analyst inputs on-ramp and off-ramp demands for a single direction by time slice within each peak period. FREQ estimates an origin-destination table from the ramp volumes for each time slice. FREQ then propagates the vehicles down the length of the freeway, queuing them up when demand exceeds capacity and reducing the volumes reaching downstream off-ramps when traffic is trapped at a bottleneck. Excess demand is stored on the freeway at the end of each time slice and then released in the following time slice, if capacity permits. FREQ predicts speeds and densities of traffic based on the volume/capacity ratios and the classical speed-flow and flow-density curves. FREQ outputs speed, density, volume/capacity ratio, fuel consumptions, and pollutant emissions by time slice and study section.

The analyst must calibrate FREQ to the local conditions. This is done by running FREQ for existing conditions and comparing the model predicted queues with those observed in the field at the time the traffic counts were collected. The analyst adjusts the capacity of the freeway sections until the congestion onset time, congestion clearance time, and length of queues matches that observed in the field.

## Input Data

The FREQ model requires demand data and freeway geometry data.

The demand data consists of total vehicles (plus percent HOV's and percent trucks) entering/exiting the study area on the freeway plus on-ramp and off-ramp volumes by time slice.

For the corridor study two 4-hour long peak periods were selected for analysis:

- AM Peak Period = 06:00-10:00 AM
- PM Peak Period = 03:00-07:00 PM

It was decided to split each peak period into 4 one-hour long time slices for FREQ modeling purposes. While 15-minute long time slices would ordinarily have been more desirable, the hourly count data, which was available, suggested that one-hour time slices would be more practical and sufficiently accurate for corridor operations analysis purposes.

Mainline and ramp counts for each peak period were obtained from Caltrans 03. The counts were collected by Caltrans in 2003.

The percent of total traffic that was 2+ person HOV was computed from PeMS traffic counts for the HOV lane east of Hazel Avenue (see the PeMS website at <http://pems.eecs.berkeley.edu/Public/> for more information on PeMS). Automated traffic counts at this location suggested that HOV's accounted for approximately 11.5% of the westbound AM peak period traffic on US 50. This same percent was applied to both directions and both peak periods on US 50.

The HOV's were split between 2 person and 3+ person HOV's assuming that 90% of the HOV's are 2-person HOV's. The remainder was split between 3+ person HOV's and buses. The final percentages are listed below:

- Auto with 1 passenger = 0.885
- Autos with 2 passenger = 0.100
- Autos with 3 or more passenger = .014
- Buses = 0.001

Based on Caltrans daily truck traffic volumes (2003), it was estimated that trucks account for 6% of the peak period traffic in the US 50 corridor.

The average occupancy of HOV with three or more passengers was assumed to be 3.200. The average occupancy of buses was assumed to be 40 persons.

The input geometries are shown in the following two exhibits:

- Exhibit 2. US 50 Westbound Geometry – Existing (2003)
- Exhibit 3. US 50 Eastbound Geometry – Existing (2003)



The freeway geometry data was obtained from field observations and from “As-Built” drawings provided by Caltrans 03. The geometric data required by FREQ consists of number of lanes, lengths of freeway mainline sections between ramps and lane/grade changes, percent grades, and number of lanes on each ramp. FREQ has a limit of 4% as the maximum grade that can be input. There were about a half a dozen sections where the freeway grades reached 5% to 7%. Seven percent was the maximum grade constructed on the US 50 corridor.

## Exhibit 2. US 50 Westbound Geometry – Existing (2003)

US 50 Westbound No. Subsection Description	HOV Lanes	Mixed Lanes	HOV Cap	Mixed Cap (vph)	Length (ft)	Origin/ Destin.	Grade
1 US 50 Mainline WB In to Ponderosa Off		2		4900	6920	OD	1%
2 Ponderosa Off to Shingle Sp NB Loop On		2		4900	1320		0%
3 Shingle Sp NB Loop On to Merge		3		7350	300	O	-2%
4 Merge to Ponderosa On		2		4900	740		-3%
5 Ponderosa SB On to Merge		3		7350	300	O	-2%
6 Merge to Cameron Off		2		4900	6810	D	-2%
7 Cameron Off to Cameron NB Loop On		2		4900	1210		1%
8 Cameron NB Loop On to Merge		3		7350	300	O	4%
9 Merge to Cameron SB On		2		4900	740		2%
10 Cameron SB On to Merge		3		7350	320	O	1%
11 Merge to Cambridge Off		2		4900	5700	D	-5%
12 Cambridge Off to On		2		4900	1160		5%
13 Cambridge On to Lane Drop		3		7350	2320	O	2%
14 Lane Drop to Bass Off		2		4900	5280	D	-1%
15 Bass Off to On		2		4900	2380		-2%
16 Bass On to Merge		3		7350	300	O	1%
17 Merge to El Dorado Off		2		4900	9870	D	-5%
18 El Dorado Off HOV Start		2		4900	1584	D	1%
19 HOV Start to El Dorado On	1	2	1500	4900	1056	O	2%
20 El Dorado On to Crest of Hill	1	2	1500	4900	6494	O	2%
21 Crest of Hill to Exit Lane	1	2	1500	4900	2900		-7%
22 Exit Lane to Bidwell Off	1	3	1500	7350	1320	D	-7%
23 Bidwell Off to Scott NB Loop On	1	2	1500	4900	2060		-2%
24 Scott NB Loop On to Merge	1	3	1500	7350	320	O	-4%
25 Merge to Bidwell SB On	1	2	1500	4900	900		-3%
26 Bidwell SB On to Merge	1	3	1500	7350	1425	O	-2%
27 Merge to Prairie City Off	1	2	1500	4900	7075	D	-1%
28 Prairie Off to Prairie NB Loop On	1	2	1500	4900	1850		-1%
29 Prairie City NB Loop On to Merge	1	3	1500	7350	264	O	1%
30 Merge to Prairie City SB On	1	2	1500	4900	1160		-1%
31 Prairie City SB On to Merge	1	3	1500	7350	1375	O	-1%
32 Merge to Folsom Off	1	2	1500	4900	8610	D	-1%
33 Folsom Off to On	1	2	1500	4900	1795		-2%
34 Folsom On to Hazel Off	1	3	1500	7350	3170	OD	0%
35 Hazel Off to Hazel NB Loop On	1	2	1500	4900	1795		0%
36 Hazel NB Loop On to Merge	1	3	1500	7350	300	O	0%
37 Merge to Hazel SB On	1	2	1500	4900	950		0%
38 Hazel SB On to HOV End	1	3	1500	7350	11670	OD	0%
39 HOV End to Sunrise Off		4		9800	2480	OD	0%
40 Sunrise Off to On		3		7350	3855		0%
41 Sunrise On to Zinfandel Off		4		9800	5330	OD	0%
42 Zinfandel Off to Zin NB Loop On		4		9800	1110		0%
43 Zin NB Loop On to Zinfandel SB On		4		9800	740	O	0%

US 50 Westbound		HOV	Mixed	HOV	Mixed	Length	Origin/	
No.	Subsection Description	Lanes	Lanes	Cap	Cap (vph)	(ft)	Destin.	Grade
44	Zinfandel SB On to Merge		5		12250	1850	O	0%
45	Merge to Mather Off		4		9800	3800	D	0%
46	Mather Off to Mather NB Loop On		4		9800	1220		0%
47	Mather NB Loop On to Mather SB On		5		12250	1110	O	0%
48	Mather SB On to Merge		6		14700	300	O	0%
49	Merge to US 50 WB Mainline Out		5		12250	1900	D	0%

Design Speed = 70 mph

Percent Trucks = 6%

Percent HOV's = 11.5%

### Exhibit 3. US 50 Eastbound Geometry – Existing (2003)

US 50 Eastbound No. Subsection Description	HOV Lanes	Mixed Lanes	HOV Cap	Mixed Cap (vph)	Length (ft)	Origin/ Destin.	Grade
1 US 50 Mainline EB In to Mather Off		4		9800	5810	OD	0%
2 Mather Off to Mather SB Loop On		4		9800	1320		0%
3 Mather SB Loop On to Merge		5		12250	300	O	1%
4 Merge to Mather NB On		4		9800	800		0%
5 Mather NB On to Merge		5		12250	320	O	0%
6 Merge to Exit Lane		4		9800	3480		0%
7 Exit Lane to Zinfandel Off		5		12250	1425	D	0%
8 Zinfandel Off to Zin SB Loop On		4		9800	1056		1%
9 Zin SB Loop On to Zin NB On		4		9800	1056	O	0%
10 Zin NB On to Merge		5		12250	320	O	0%
11 Merge to Sunrise Off		4		9800	5230	D	0%
12 Sunrise Off to HOV Start		3		7350	1584	D	0%
13 HOV Start to Sunrise On	1	3	1500	7350	2640	O	0%
14 Sunrise On to Merge	1	4	1500	9800	1056	O	0%
15 Merge to Hazel Exit Lane	1	3	1500	7350	12672		0%
16 Exit Lane to Hazel Off	1	4	1500	9800	1000	D	0%
17 Hazel Off to Hazel On	1	3	1500	7350	2112		0%
18 Hazel On to Aerojet Off	1	4	1500	9800	528	OD	1%
19 Aerojet Off to Lane Drop	1	4	1500	9800	740		0%
20 Lane Drop to Folsom Off	1	3	1500	7350	2640	D	0%
21 Folsom Off to Folsom On	1	2	1500	4900	1056		4%
22 Folsom On to Merge	1	3	1500	7350	156	O	-1%
23 Merge to Prairie City Off	1	2	1500	4900	10296	D	1%
24 Prairie Off to Prairie NB Loop On	1	2	1500	4900	2320		0%
25 Prairie NB Loop On to Merge	1	3	1500	7350	211	O	0%
26 Merge to Prairie City SB On	1	2	1500	4900	1110		3%
27 Prairie City SB On to Merge	1	3	1500	7350	1320	O	0%
28 Merge to Start Exit Lane	1	2	1500	4900	5280		1%
29 Exit Lane to Bidwell Off	1	3	1500	7350	1584	D	2%
30 Bidwell Off to Bidwell SB Loop On	1	2	1500	4900	2220		3%
31 Bidwell SB Loop On to Scott On	1	3	1500	7350	900	O	0%
32 Scott NB On to Merge	1	4	1500	9800	1330	O	6%
33 Merge to Crest of Hill	1	3	1500	7350	3010		7%
34 Crest of Hill to Lane Drop	1	3	1500	7350	1270		-6%
35 Lane Drop to HOV End	1	2	1500	4900	2640	D	-1%
36 HOV End to Latrobe SB Off		3		7350	1584	OD	-3%
37 Latrobe SB Off to El Dorado NB Off		3		7350	1400	D	1%
38 El Dorado NB Off to El Dorado On		2		4900	1640		-2%
39 El Dorado On to Truck Climb Lane		2		4900	4380	O	3%
40 Truck Climb Lane to Bass Off		3		7350	5970	D	6%
41 Bass Lake Off to End Truck Lane		3		7350	1320		-1%
42 End Truck Lane to Bass Lake On		2		4900	792		7%
43 Bass Lake On to Merge		3		7350	300	O	0%

US 50 Eastbound No. Subsection Description	HOV Lanes	Mixed Lanes	HOV Cap	Mixed Cap (vph)	Length (ft)	Origin/ Destin.	Grade
44 Merge to Cambridge Off		2		4900	6200	D	0%
45 Cambridge Off to Cambridge On		2		4900	1375		-1%
46 Cambridge On to Merge		3		7350	300	O	0%
47 Merge to Cameron Park Off		2		4900	7230	D	3%
48 Cameron Off to Cameron On		2		4900	2480		2%
49 Cameron On to Grade Change		2		4900	5280	O	0%
50 Grade Change to Ponderosa Off		2		4900	844	D	4%
51 Ponderosa Off to Ponderosa On		2		4900	1270		2%
52 Ponderosa On to Mainline Out		2		4900	2640	OD	-2%

23.83 miles

Design Speed = 70 mph  
Percent Trucks = 6%  
Percent HOV's = 11.5%

The default capacities of 1500 vehicles per hour per lane for ramps and 2200 vehicles per hour per lane for the freeway mainline were used initially in the analysis. These two initial estimates were then calibrated to match existing operations observations.

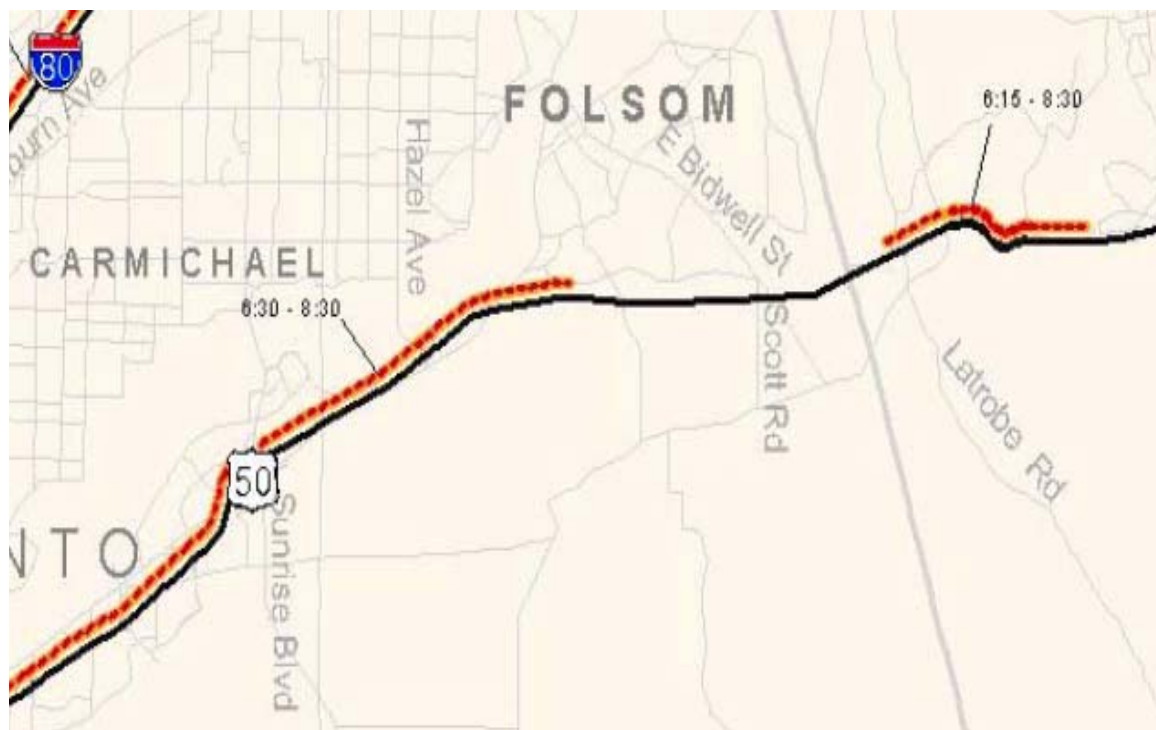
The default design speed of 65 mph was revised upwards to 70 miles per hour.

## FREQ Model Calibration

The FREQ12 model was run 4 times (once for each direction and for each peak period) and the results compared to field observations by the consulting team and Caltrans reported congestion on the corridor.

The Caltrans 2002 HICOMP report was consulted to determine existing bottleneck locations and duration for the US 50 study corridor (see Exhibit 4. Caltrans HICOMP Report for US 50). This report shows that congestion on the study section of US 50 routinely occurs only in the westbound direction during the morning peak period. One congestion segment extends from downtown Sacramento back to just short of the Prairie City Road interchange. The second congestion segment extends back from the El Dorado Hills on ramp to just short of the Cambridge interchange. All congestion clears by 8:30 AM according to the HICOMP report.

**Exhibit 4. Caltrans HICOMP Report for US 50**



Caltrans 2002 HICOMP Report ([www.dot.ca.gov/hq/traffops/sysmgtp/HICOMP/](http://www.dot.ca.gov/hq/traffops/sysmgtp/HICOMP/)).

The HCS software was used to compute Highway Capacity Manual (HCM) (Year 2000 edition) estimates of freeway mainline capacity for critical segments of the freeway. The results are shown below.

**Exhibit 5. Highway Capacity Manual Estimated Capacities**

Section Type	HCM Capacity	Capacity/Lane	Comments
2-lanes, flat and all downgrades	4025 vph	2012 vph/lane	
3-lanes, 1 mile 6% upgrade	4706 vph	1569 vph/lane	El Dorado to Bass Lake Grade
2-lanes, 1.5 mile 3% upgrade	3785 vph	1892 vph/lane	Cambridge to Cameron Park Grade

Assumptions: 6% trucks, 6% recreational vehicles, 70 mph base free flow speed.

The HCM estimates of capacity were a great deal lower than the observed peak hour mainline volumes on US 50. For example, the HCM estimates a capacity of 2012 vph per lane for a flat 2-lane section of freeway. Five uncongested sections of US 50 were found to exceed that capacity by up to 25% in the westbound direction during the morning peak hour in the year 2003. Thus the default capacity of 2200 vehicles per hour per lane contained in the FREQ model was used as a starting point for the calibration process.

The initial runs of FREQ showed a few on-ramps unable (within the model) to deliver the volumes counted and reported by Caltrans 03. The capacities of these ramps were increased above the 1500 vehicles per hour (vph) default values to match the counted volumes.

- Capacity of westbound on-ramp from SB Hazel Avenue was set at 1800 vehicles per hour per lane (vphpl).
- Capacity of westbound on-ramp from Sunrise Boulevard was set at 2400 vphpl.
- Capacity of westbound on-ramp from northbound Zinfandel Avenue was set at 1800 vphpl.

With the revised ramp capacities, the FREQ model predicted the correct locations and on-set times for westbound congestion on the study section of the US 50 corridor, but the model over predicted the extent of the congestion (for example, the model predicted longer queues that would not clear by 10 AM).

So the default 2200 vph capacity per lane for mainline traffic was increased until the extent of the congestion more closely matched the congestion reported in the HICOMP report. The final calibrated capacity was 2450 vehicles per hour per lane for the US 50 corridor.

The final calibrated model results are shown in the following exhibits:

- Exhibit 6. Westbound US 50 Performance – Existing (2005) AM Peak Hour
- Exhibit 7. Westbound US 50 Performance – Existing (2005) PM Peak Hour
- Exhibit 8. Eastbound US 50 Performance - Existing (2005) AM Peak Hour
- Exhibit 9. Eastbound US 50 Performance - Existing (2005) PM Peak Hour

The final calibrated operations results are summarized below by direction and peak period.

#### Westbound AM Peak Period

Traffic starts backing up during the 6 AM to 7 AM time splice at subsection 37 (northbound Hazel Avenue on ramp merge to southbound Hazel Avenue on ramp). Queues start building at subsection 36 (northbound Hazel Avenue on ramp to merge) and extend back to subsection 33 (Folsom off ramp to Folsom on ramp)

Another bottleneck starts at subsection 20 (El Dorado on ramp to crest of hill) and extends back to subsection 17 (Bass Lake on ramp merge).

The locations and geographic extents of these two congestion events generally parallel those reported in the Caltrans HICOMP report.

#### Westbound PM Peak Period

There are no bottlenecks during existing PM peak hour in westbound direction. This matches informal field observations and the Caltrans HICOMP report.

#### Baseline AM Peak Hour – Eastbound

There are no bottlenecks during baseline AM peak hour in eastbound direction. This matches informal field observations and the Caltrans HICOMP report.

#### Baseline PM Peak Hour – Eastbound

There are no bottlenecks during baseline PM peak hour in eastbound direction. This informal matches field observations and the Caltrans HICOMP report.



**Exhibit 6. Westbound US 50 Performance – Existing (2005) AM Peak Hour**

US 50 Westbound No. Subsection	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap (vph)	V/C Speed Density LOS				
									Queue	ratio (mph)	vpmpl	level	
1 US 50 Mainline WB In to Ponderosa Off	2	2237	239	2237	2237	239	2237	4900	0.46	70	16.0	B	
2 Ponderosa Off to Shingle Sp NB Loop On	2	0	0	1998	0	0	1998	4900	0.41	70	14.3	B	
3 Shingle Sp NB Loop On to Merge	3	929	0	2927	929	0	2927	7350	0.40	70	13.9	B	
4 Merge to Ponderosa On	2	0	0	2927	0	0	2927	4900	0.60	70	20.9	C	
5 Ponderosa SB On to Merge	3	599	0	3526	599	0	3526	7350	0.48	70	16.8	B	
6 Merge to Cameron Off	2	0	651	3526	0	651	3526	4900	0.72	69	25.7	C	
7 Cameron Off to Cameron NB Loop On	2	0	0	2875	0	0	2875	4900	0.59	70	20.5	C	
8 Cameron NB Loop On to Merge	3	158	0	3033	158	0	3033	7350	0.41	70	14.4	B	
9 Merge to Cameron SB On	2	0	0	3033	0	0	3033	4900	0.62	70	21.7	C	
10 Cameron SB On to Merge	3	389	0	3422	389	0	3422	7350	0.47	70	16.3	B	
11 Merge to Cambridge Off	2	0	406	3422	0	406	3422	4900	0.70	69	24.8	C	
12 Cambridge Off to On	2	0	0	3016	0	0	3016	4900	0.62	70	21.6	C	
13 Cambridge On to Lane Drop	3	403	0	3419	403	0	3419	7350	0.47	70	16.3	B	
14 Lane Drop to Bass Off	2	0	65	3419	0	65	3419	4900	0.70	69	24.8	C	
15 Bass Off to On	2	0	0	3354	0	0	3354	4900	0.68	69	24.2	C	
16 Bass On to Merge	3	1098	0	4452	1098	0	4452	7350	0.61	70	21.2	C	
17 Merge to El Dorado Off	2	0	498	4452	0	498	4452	4900	M	0.91	61	36.7	E
18 El Dorado Off HOV Start	2	0	455	3954	0	455	3954	4900	MM	0.81	66	30.0	D
19 HOV Start to El Dorado On	2	0	0	3499	0	0	3499	4900	MM	0.71	69	25.5	C
20 El Dorado On to Crest of Hill	2	1163	0	4662	1163	0	4500	4900	0.92	60	37.5	E	
21 Crest of Hill to Exit Lane	2	0	0	4662	0	0	4500	4900	0.92	60	37.5	E	
22 Exit Lane to Bidwell Off	3	0	823	4662	0	794	4500	7350	0.61	70	21.5	C	
23 Bidwell Off to Scott NB Loop On	2	0	0	3839	0	0	3705	4900	0.76	68	27.4	D	
24 Scott NB Loop On to Merge	3	71	0	3910	71	0	3776	7350	0.51	70	18.0	B	
25 Merge to Bidwell SB On	2	0	0	3910	0	0	3776	4900	0.77	67	28.1	D	
26 Bidwell SB On to Merge	3	654	0	4565	654	0	4431	7350	0.60	70	21.1	C	
27 Merge to Prairie City Off	2	0	1017	4565	0	987	4431	4900	0.90	61	36.4	E	
28 Prairie Off to Prairie NB Loop On	2	0	0	3548	0	0	3443	4900	0.70	69	25.0	C	

US 50 Westbound No. Subsection	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap (vph)	V/C Queue	Speed ratio (mph)	Density vpmpl	LOS level
29 Prairie City NB Loop On to Merge	3	12	0	3560	12	0	3456	7350		0.47	70	16.5 B
30 Merge to Prairie City SB On	2	0	0	3560	0	0	3456	4900		0.71	69	25.1 C
31 Prairie City SB On to Merge	3	658	0	4219	658	0	4114	7350		0.56	70	19.6 C
32 Merge to Folsom Off	2	0	268	4219	0	262	4114	4900		0.84	65	31.9 D
33 Folsom Off to On	2	0	0	3951	0	0	3816	4900	Q	0.78	57	33.3 F
34 Folsom On to Hazel Off	3	1223	469	5173	1223	460	5039	7350	QQ	0.69	10	162.2 F
35 Hazel Off to Hazel NB Loop On	2	0	0	4705	0	0	4579	4900	QQ	0.93	23	99.2 F
36 Hazel NB Loop On to Merge	3	321	0	5026	321	0	4900	7350	QQ	0.67	10	170.6 F
37 Merge to Hazel SB On	2	0	0	5026	0	0	4900	4900		1.00	53	45.9 E
38 Hazel SB On to HOV End	3	1546	0	6572	1546	0	6446	7350		0.88	63	34.3 D
39 HOV End to Sunrise Off	4	854	620	7426	854	609	7300	9800		0.74	68	26.8 D
40 Sunrise Off to On	3	0	0	6806	0	0	6691	7350		0.91	61	36.8 E
41 Sunrise On to Zinfandel Off	4	2399	940	9205	2399	928	9090	9800		0.93	59	38.3 E
42 Zinfandel Off to Zin NB Loop On	4	0	0	8265	0	0	8161	9800		0.83	65	31.4 D
43 Zin NB Loop On to Zinfandel SB On	4	664	0	8929	664	0	8825	9800		0.90	61	36.1 E
44 Zinfandel SB On to Merge	5	391	0	9320	391	0	9216	12250		0.75	68	27.2 D
45 Merge to Mather Off	4	0	858	9320	0	848	9216	9800		0.94	58	39.5 E
46 Mather Off to Mather NB Loop On	4	0	0	8462	0	0	8368	9800		0.85	64	32.8 D
47 Mather NB Loop On to Mather SB On	5	239	0	8701	239	0	8607	12250		0.70	69	25.0 C
48 Mather SB On to Merge	6	505	0	9206	505	0	9112	14700		0.62	70	21.7 C
49 Merge to US 50 WB Mainline Out	5	0	9206	9206	0	9112	9112	12250		0.74	68	26.8 D

M = Queue caused by on-ramp merge (Right hand lanes affected more than other lanes).

Q = Queue caused by mainline demand greater than mainline capacity.

**Exhibit 7. Westbound US 50 Performance – Existing (2005) PM Peak Hour**

US 50 Westbound No. Subsection	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap (vph)	V/C Speed Density LOS			
									Queue	ratio (mph)	vpmpl	level
1 US 50 Mainline WB In to Ponderosa Off	2	1832	289	1832	1832	289	1832	4900	0.37	70	13.1	B
2 Ponderosa Off to Shingle Sp NB Loop On	2	0	0	1543	0	0	1543	4900	0.31	70	11.0	B
3 Shingle Sp NB Loop On to Merge	3	416	0	1959	416	0	1959	7350	0.27	70	9.3	A
4 Merge to Ponderosa On	2	0	0	1959	0	0	1959	4900	0.40	70	14.0	B
5 Ponderosa SB On to Merge	3	267	0	2226	267	0	2226	7350	0.30	70	10.6	A
6 Merge to Cameron Off	2	0	647	2226	0	647	2226	4900	0.45	70	15.9	B
7 Cameron Off to Cameron NB Loop On	2	0	0	1579	0	0	1579	4900	0.32	70	11.3	B
8 Cameron NB Loop On to Merge	3	199	0	1778	199	0	1778	7350	0.24	70	8.5	A
9 Merge to Cameron SB On	2	0	0	1778	0	0	1778	4900	0.36	70	12.7	B
10 Cameron SB On to Merge	3	231	0	2009	231	0	2009	7350	0.27	70	9.6	A
11 Merge to Cambridge Off	2	0	295	2009	0	295	2009	4900	0.41	70	14.3	B
12 Cambridge Off to On	2	0	0	1714	0	0	1714	4900	0.35	70	12.2	B
13 Cambridge On to Lane Drop	3	212	0	1926	212	0	1926	7350	0.26	70	9.2	A
14 Lane Drop to Bass Off	2	0	58	1926	0	58	1926	4900	0.39	70	13.8	B
15 Bass Off to On	2	0	0	1868	0	0	1868	4900	0.38	70	13.3	B
16 Bass On to Merge	3	268	0	2136	268	0	2136	7350	0.29	70	10.2	A
17 Merge to El Dorado Off	2	0	479	2136	0	479	2136	4900	0.44	70	15.3	B
18 El Dorado Off HOV Start	2	0	191	1657	0	191	1657	4900	0.34	70	11.8	B
19 HOV Start to El Dorado On	2	0	0	1466	0	0	1466	4900	0.30	70	10.5	A
20 El Dorado On to Crest of Hill	2	1264	0	2730	1264	0	2730	4900	0.56	70	19.5	C
21 Crest of Hill to Exit Lane	2	0	0	2730	0	0	2730	4900	0.56	70	19.5	C
22 Exit Lane to Bidwell Off	3	0	634	2730	0	634	2730	7350	0.37	70	13.0	B
23 Bidwell Off to Scott NB Loop On	2	0	0	2097	0	0	2097	4900	0.43	70	15.0	B
24 Scott NB Loop On to Merge	3	83	0	2180	83	0	2180	7350	0.30	70	10.4	A
25 Merge to Bidwell SB On	2	0	0	2180	0	0	2180	4900	0.44	70	15.6	B
26 Bidwell SB On to Merge	3	419	0	2599	419	0	2599	7350	0.35	70	12.4	B
27 Merge to Prairie City Off	2	0	197	2599	0	197	2599	4900	0.53	70	18.6	C
28 Prairie Off to Prairie NB Loop On	2	0	0	2402	0	0	2402	4900	0.49	70	17.2	B

US 50 Westbound No. Subsection	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap (vph)	V/C Queue	Speed ratio (mph)	Density vpmpf	LOS level
29 Prairie City NB Loop On to Merge	3	44	0	2446	44	0	2446	7350	0.33	70	11.6	B
30 Merge to Prairie City SB On	2	0	0	2446	0	0	2446	4900	0.50	70	17.5	B
31 Prairie City SB On to Merge	3	674	0	3120	674	0	3120	7350	0.42	70	14.9	B
32 Merge to Folsom Off	2	0	215	3120	0	215	3120	4900	0.64	70	22.4	C
33 Folsom Off to On	2	0	0	2905	0	0	2905	4900	0.59	70	20.8	C
34 Folsom On to Hazel Off	3	1138	593	4044	1138	593	4044	7350	0.55	70	19.3	C
35 Hazel Off to Hazel NB Loop On	2	0	0	3451	0	0	3451	4900	0.70	69	25.0	C
36 Hazel NB Loop On to Merge	3	285	0	3736	285	0	3736	7350	0.51	70	17.8	B
37 Merge to Hazel SB On	2	0	0	3736	0	0	3736	4900	0.76	68	27.7	D
38 Hazel SB On to HOV End	3	803	0	4538	803	0	4538	7350	0.62	70	21.7	C
39 HOV End to Sunrise Off	4	590	752	5128	590	752	5128	9800	0.52	70	18.3	C
40 Sunrise Off to On	3	0	0	4376	0	0	4376	7350	0.60	70	20.9	C
41 Sunrise On to Zinfandel Off	4	1714	533	6090	1714	533	6090	9800	0.62	70	21.8	C
42 Zinfandel Off to Zin NB Loop On	4	0	0	5557	0	0	5557	9800	0.57	70	19.8	C
43 Zin NB Loop On to Zinfandel SB On	4	1739	0	7296	1739	0	7296	9800	0.74	68	26.8	D
44 Zinfandel SB On to Merge	5	466	0	7762	466	0	7762	12250	0.63	70	22.3	C
45 Merge to Mather Off	4	0	516	7762	0	516	7762	9800	0.79	67	29.2	D
46 Mather Off to Mather NB Loop On	4	0	0	7246	0	0	7246	9800	0.74	68	26.6	D
47 Mather NB Loop On to Mather SB On	5	481	0	7727	481	0	7727	12250	0.63	70	22.2	C
48 Mather SB On to Merge	6	339	0	8066	339	0	8066	14700	0.55	70	19.2	C
49 Merge to US 50 WB Mainline Out	5	0	8066	8066	0	8066	8066	12250	0.66	70	23.2	C

**Exhibit 8. Eastbound US 50 Performance - Existing (2005) AM Peak Hour**

US 50 Eastbound No. Subsection Description	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap (vph)	V/C Queue	Speed ratio (mph)	Density vpmp/level	LOS
1 US 50 Mainline EB In to Mather Off	4	9344	1225	9344	9344	1225	9344	9800	0.95	57	40.7	E
2 Mather Off to Mather SB Loop On	4	0	0	8119	0	0	8119	9800	0.83	65	31.2	D
3 Mather SB Loop On to Merge	5	185	0	8304	185	0	8304	12250	0.68	69	24.0	C
4 Merge to Mather NB On	4	0	0	8304	0	0	8304	9800	0.85	64	32.3	D
5 Mather NB On to Merge	5	221	0	8525	221	0	8525	12250	0.70	69	24.7	C
6 Merge to Exit Lane	4	0	0	8525	0	0	8525	9800	0.87	63	33.8	D
7 Exit Lane to Zinfandel Off	5	0	1929	8525	0	1929	8525	12250	0.70	69	24.7	C
8 Zinfandel Off to Zin SB Loop On	4	0	0	6596	0	0	6596	9800	0.67	69	23.8	C
9 Zin SB Loop On to Zin NB On	4	145	0	6741	145	0	6741	9800	0.69	69	24.4	C
10 Zin NB On to Merge	5	289	0	7030	289	0	7030	12250	0.57	70	20.1	C
11 Merge to Sunrise Off	4	0	2015	7030	0	2015	7030	9800	0.72	69	25.6	C
12 Sunrise Off to HOV Start	3	0	577	5015	0	577	5015	7350	0.68	69	24.1	C
13 HOV Start to Sunrise On	3	0	0	4438	0	0	4438	7350	0.60	70	21.2	C
14 Sunrise On to Merge	4	974	0	5412	974	0	5412	9800	0.55	70	19.3	C
15 Merge to Hazel Exit Lane	3	0	0	5412	0	0	5412	7350	0.74	68	26.4	D
16 Exit Lane to Hazel Off	4	0	1504	5412	0	1504	5412	9800	0.55	70	19.3	C
17 Hazel Off to Hazel On	3	0	0	3908	0	0	3908	7350	0.53	70	18.6	C
18 Hazel On to Aerojet Off	4	642	325	4551	642	325	4551	9800	0.46	70	16.3	B
19 Aerojet Off to Lane Drop	4	0	0	4225	0	0	4225	9800	0.43	70	15.1	B
20 Lane Drop to Folsom Off	3	0	1251	4225	0	1251	4225	7350	0.57	70	20.1	C
21 Folsom Off to Folsom On	2	0	0	2974	0	0	2974	4900	0.61	70	21.3	C
22 Folsom On to Merge	3	178	0	3153	178	0	3153	7350	0.43	70	15.0	B
23 Merge to Prairie City Off	2	0	582	3153	0	582	3153	4900	0.64	70	22.6	C
24 Prairie Off to Prairie NB Loop On	2	0	0	2571	0	0	2571	4900	0.52	70	18.4	C
25 Prairie NB Loop On to Merge	3	27	0	2598	27	0	2598	7350	0.35	70	12.4	B
26 Merge to Prairie City SB On	2	0	0	2598	0	0	2598	4900	0.53	70	18.6	C
27 Prairie City SB On to Merge	3	153	0	2751	153	0	2751	7350	0.37	70	13.1	B
28 Merge to Start Exit Lane	2	0	0	2751	0	0	2751	4900	0.56	70	19.7	C

US 50 Eastbound No. Subsection Description	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap (vph)	V/C Queue	Speed ratio (mph)	Density vpmp/	LOS level
29 Exit Lane to Bidwell Off	3	0	279	2751	0	279	2751	7350	0.37	70	13.1	B
30 Bidwell Off to Bidwell SB Loop On	2	0	0	2472	0	0	2472	4900	0.50	70	17.7	B
31 Bidwell SB Loop On to Scott On	3	642	0	3114	642	0	3114	7350	0.42	70	14.8	B
32 Scott NB On to Merge	4	46	0	3160	46	0	3160	9800	0.32	70	11.3	B
33 Merge to Crest of Hill	3	0	0	3160	0	0	3160	7350	0.43	70	15.0	B
34 Crest of Hill to Lane Drop	3	0	0	3160	0	0	3160	7350	0.43	70	15.0	B
35 Lane Drop to HOV End	2	0	0	3160	0	0	3160	4900	0.64	70	22.7	C
36 HOV End to Latrobe SB Off	3	321	1143	3481	321	1143	3481	7350	0.47	70	16.6	B
37 Latrobe SB Off to El Dorado NB Off	3	0	283	2338	0	283	2338	7350	0.32	70	11.1	B
38 El Dorado NB Off to El Dorado On	2	0	0	2055	0	0	2055	4900	0.42	70	14.7	B
39 El Dorado On to Truck Climb Lane	2	313	0	2368	313	0	2368	4900	0.48	70	16.9	B
40 Truck Climb Lane to Bass Off	3	0	180	2368	0	180	2368	7350	0.32	70	11.3	B
41 Bass Lake Off to End Truck Lane	3	0	0	2188	0	0	2188	7350	0.30	70	10.4	A
42 End Truck Lane to Bass Lake On	2	0	0	2188	0	0	2188	4900	0.45	70	15.6	B
43 Bass Lake On to Merge	3	53	0	2241	53	0	2241	7350	0.30	70	10.7	A
44 Merge to Cambridge Off	2	0	162	2241	0	162	2241	4900	0.46	70	16.0	B
45 Cambridge Off to Cambridge On	2	0	0	2079	0	0	2079	4900	0.42	70	14.8	B
46 Cambridge On to Merge	3	364	0	2443	364	0	2443	7350	0.33	70	11.6	B
47 Merge to Cameron Park Off	2	0	390	2443	0	390	2443	4900	0.50	70	17.4	B
48 Cameron Off to Cameron On	2	0	0	2053	0	0	2053	4900	0.42	70	14.7	B
49 Cameron On to Grade Change	2	506	0	2559	506	0	2559	4900	0.52	70	18.3	C
50 Grade Change to Ponderosa Off	2	0	695	2559	0	695	2559	4900	0.52	70	18.3	C
51 Ponderosa Off to Ponderosa On	2	0	0	1864	0	0	1864	4900	0.38	70	13.3	B
52 Ponderosa On to Mainline Out	2	202	2066	2066	202	2066	2066	4900	0.42	70	14.8	B

**Exhibit 9. Eastbound US 50 Performance - Existing (2005) PM Peak Hour**

US 50 Eastbound No. Subsection Description	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap (vph)	V/C Queue	Speed ratio (mph)	Density vpmp/level	LOS
1 US 50 Mainline EB In to Mather Off	4	5854	820	5854	5854	820	5854	9800	0.60	65	22.5	C
2 Mather Off to Mather SB Loop On	4	0	0	5034	0	0	5034	9800	0.51	65	19.4	C
3 Mather SB Loop On to Merge	5	219	0	5253	219	0	5253	12250	0.43	65	16.2	B
4 Merge to Mather NB On	4	0	0	5253	0	0	5253	9800	0.54	65	20.2	C
5 Mather NB On to Merge	5	591	0	5844	591	0	5844	12250	0.48	65	18.0	B
6 Merge to Exit Lane	4	0	0	5844	0	0	5844	9800	0.60	65	22.5	C
7 Exit Lane to Zinfandel Off	5	0	957	5844	0	957	5844	12250	0.48	65	18.0	B
8 Zinfandel Off to Zin SB Loop On	4	0	0	4887	0	0	4887	9800	0.50	65	18.8	C
9 Zin SB Loop On to Zin NB On	4	146	0	5033	146	0	5033	9800	0.51	65	19.4	C
10 Zin NB On to Merge	5	722	0	5755	722	0	5755	12250	0.47	65	17.7	B
11 Merge to Sunrise Off	4	0	1767	5755	0	1767	5755	9800	0.59	65	22.1	C
12 Sunrise Off to HOV Start	3	0	459	3988	0	459	3988	7350	0.54	65	20.5	C
13 HOV Start to Sunrise On	3	0	0	3529	0	0	3529	7350	0.48	70	16.8	B
14 Sunrise On to Merge	4	941	0	4470	941	0	4470	9800	0.46	70	16.0	B
15 Merge to Hazel Exit Lane	3	0	0	4470	0	0	4470	7350	0.61	70	21.3	C
16 Exit Lane to Hazel Off	4	0	1528	4470	0	1528	4470	9800	0.46	70	16.0	B
17 Hazel Off to Hazel On	3	0	0	2943	0	0	2943	7350	0.40	70	14.0	B
18 Hazel On to Aerojet Off	4	846	71	3789	846	71	3789	9800	0.39	70	13.5	B
19 Aerojet Off to Lane Drop	4	0	0	3718	0	0	3718	9800	0.38	70	13.3	B
20 Lane Drop to Folsom Off	3	0	1106	3718	0	1106	3718	7350	0.51	70	17.7	B
21 Folsom Off to Folsom On	2	0	0	2613	0	0	2613	4900	0.53	70	18.7	C
22 Folsom On to Merge	3	329	0	2942	329	0	2942	7350	0.40	70	14.0	B
23 Merge to Prairie City Off	2	0	624	2942	0	624	2942	4900	0.60	70	21.0	C
24 Prairie Off to Prairie NB Loop On	2	0	0	2318	0	0	2318	4900	0.47	70	16.6	B
25 Prairie NB Loop On to Merge	3	42	0	2360	42	0	2360	7350	0.32	70	11.2	B
26 Merge to Prairie City SB On	2	0	0	2360	0	0	2360	4900	0.48	70	16.9	B
27 Prairie City SB On to Merge	3	337	0	2697	337	0	2697	7350	0.37	70	12.8	B
28 Merge to Start Exit Lane	2	0	0	2697	0	0	2697	4900	0.55	70	19.3	C

US 50 Eastbound No. Subsection Description	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap (vph)	V/C Queue	Speed ratio (mph)	Density vpmp	LOS level
29 Exit Lane to Bidwell Off	3	0	907	2697	0	907	2697	7350	0.37	70	12.8	B
30 Bidwell Off to Bidwell SB Loop On	2	0	0	1790	0	0	1790	4900	0.37	70	12.8	B
31 Bidwell SB Loop On to Scott On	3	1374	0	3164	1328	0	3118	7350	0.42	70	14.8	B
32 Scott NB On to Merge	4	169	0	3333	169	0	3287	9800	0.34	70	11.7	B
33 Merge to Crest of Hill	3	0	0	3333	0	0	3287	7350	0.45	70	15.7	B
34 Crest of Hill to Lane Drop	3	0	0	3333	0	0	3287	7350	0.45	70	15.7	B
35 Lane Drop to HOV End	2	0	0	3333	0	0	3287	4900	0.67	69	23.7	C
36 HOV End to Latrobe SB Off	3	233	321	3566	233	317	3520	7350	0.48	65	18.0	C
37 Latrobe SB Off to El Dorado NB Off	3	0	82	3245	0	81	3203	7350	0.44	65	16.4	B
38 El Dorado NB Off to El Dorado On	2	0	0	3163	0	0	3122	4900	0.64	65	24.0	C
39 El Dorado On to Truck Climb Lane	2	924	0	4087	924	0	4046	4900	0.83	62	32.4	D
40 Truck Climb Lane to Bass Off	3	0	459	4087	0	454	4046	7350	0.55	65	20.7	C
41 Bass Lake Off to End Truck Lane	3	0	0	3628	0	0	3591	7350	0.49	65	18.4	C
42 End Truck Lane to Bass Lake On	2	0	0	3628	0	0	3591	4900	0.73	64	27.9	D
43 Bass Lake On to Merge	3	63	0	3691	63	0	3654	7350	0.50	65	18.7	C
44 Merge to Cambridge Off	2	0	398	3691	0	394	3654	4900	0.75	64	28.4	D
45 Cambridge Off to Cambridge On	2	0	0	3293	0	0	3260	4900	0.67	65	25.1	C
46 Cambridge On to Merge	3	304	0	3597	304	0	3564	7350	0.48	65	18.3	C
47 Merge to Cameron Park Off	2	0	698	3597	0	692	3564	4900	0.73	64	27.6	D
48 Cameron Off to Cameron On	2	0	0	2899	0	0	2873	4900	0.59	65	22.1	C
49 Cameron On to Grade Change	2	761	0	3660	761	0	3634	4900	0.74	64	28.3	D
50 Grade Change to Ponderosa Off	2	0	1035	3660	0	1028	3634	4900	0.74	64	28.3	D
51 Ponderosa Off to Ponderosa On	2	0	0	2625	0	0	2606	4900	0.53	65	20.0	C
52 Ponderosa On to Mainline Out	2	253	2878	2878	253	2859	2859	4900	0.58	65	22.0	C



## 3. Forecasted Freeway Operations

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This chapter presents the forecasted Year 2027 freeway operating conditions for the study corridor.

### Forecasted Traffic Volumes

The 2027 peak period traffic forecasts for the US 50 corridor were obtained from the SACMET 2027 Metropolitan Transportation Plan (MTP) model.

These forecasts have the following major assumptions embedded within them:

1. Future land development in El Dorado County of 82,700 homes and 71,200 jobs, but no casino at the Shingle Springs Rancheria.
2. White Rock Connector constructed as 4-lane divided major arterial from Silva Valley to Sunrise Boulevard.
3. Three new interchanges at Rancho Cordova Parkway, Empire Ranch, and Silva Valley.

The raw SACMET ramp and freeway mainline three-hour AM and three-hour PM peak period forecasts were processed to obtain the necessary hourly demands for each 4-hour peak period modeled in *FREQ*.

The SACMET forecasts were used to predict the “growth” in 2003 counts, rather than used directly. The ratio of SACMET 2027 to SACMET 2005 forecasts were used to growth factor the 2003 4-hour counts on a ramp-by-ramp basis. In some cases the three new interchanges caused volumes at adjacent interchanges to decrease from existing conditions, as would be expected to occur as traffic shifted to the new interchanges (For example: the new Empire Ranch and Silva Valley interchanges together had this effect on the El Dorado Hills on-ramp volumes).

The SACMET model in a few cases did not have the same future interchange geometry as indicated by current schematic plans made available to the consultant. Consequently some manual processing was done to split the forecasted ramp volumes to the ramps in the current interchange configuration.

### Future Interchanges

The assumed future geometry for the freeway is shown in the following exhibits:

- Exhibit 10. Future 2027 Geometry Unmitigated– Westbound US 50
- Exhibit 11. Future 2027 Geometry Unmitigated – US 50 Eastbound

The future geometry incorporates the current schematic designs for the Rancho Cordova Parkway (Sunrise Reliever), Empire Ranch, and Silva Valley interchanges. If the current designs called for auxiliary lanes between the future and existing interchanges, these auxiliary lanes were included as well as the proposed interchange in the base future geometry for the freeway.

The following sections provide brief discussions of the operation results.

## Westbound US 50 Operations – AM Peak Hour

The forecasted Year 2025+ freeway operating conditions for the westbound morning peak hour are shown in:

- Exhibit 12. Westbound US 50 Performance – Unmitigated 2027 AM Peak Hour

The primary capacity bottleneck section in the westbound direction during the morning peak period is between the Hazel Avenue on-ramp and the future Rancho Cordova Parkway (Sunrise reliever) off-ramp. The future demand will be approximately 30% greater than the 2-lane plus HOV lane capacity through this section. The morning queues of vehicles will extend about nine miles back to the future Silva Valley Interchange.

## Westbound US 50 Operations – PM Peak Hour

The forecasted Year 2025+ freeway operating conditions are shown in:

- Exhibit 13. Westbound US 50 Performance – Unmitigated 2027 PM Peak Hour

There is no congestion forecasted for US 50 Westbound during the PM peak period in the year 2027 under the assumptions described for these forecasts.

## Eastbound US 50 Operations – AM Peak Hour

The forecasted Year 2025+ freeway operating conditions are shown in:

- Exhibit 14. Eastbound US 50 Performance - Unmitigated 2027 AM Peak Hour

The primary capacity bottleneck section in the eastbound direction of US 50 is the section between Bradshaw Road and Mather Field Road. This 4-lane section is forecasted to have morning peak hour demands 14% greater than capacity. This section will meter the amount of morning peak hour traffic actually able to reach the El Dorado County sections of US 50. The effect is to reduce predicted peak hour demands on US 50 in El Dorado County by about 3% to 5%. All sections of the freeway downstream from Mather Field Road would operate at Level of Service D or better. The El Dorado County portions of eastbound US 50 within the study corridor would operate at level of service “C” or better.

## Eastbound US 50 Operations – PM Peak Hour

The forecasted Year 2025+ freeway operating conditions are shown in:

- Exhibit 15. Eastbound US 50 Performance - Unmitigated 2027 PM Peak Hour

The primary capacity bottleneck section in the eastbound direction of US 50 during the afternoon peak period would be caused if only the existing 2-lane section were retained within the future Silva Valley interchange, just before the truck climbing lane starts. Peak hour traffic is forecasted to exceed the capacity of this section by 1%. The queues would be fairly minor, extending back about a 1000 feet during the afternoon peak hour.

Current plans for the Silva Valley interchange would widen the freeway to 3 lanes each direction plus HOV lanes. A two-lane section each direction was analyzed here to confirm the need for the added lanes currently proposed for this interchange.

**Exhibit 10. Future 2027 Geometry Unmitigated– Westbound US 50**

US 50 Westbound No. Subsection Description	HOV Lanes	Mixed Lanes	HOV Cap	Mixed Cap (vph)	Length (ft)	Origin/ Destin.	Grade
1 US 50 Mainline WB In to Ponderosa Off		2		4900	6920	OD	1%
2 Ponderosa Off to Shingle Sp NB Loop On		2		4900	1320		0%
3 Shingle Sp NB Loop On to Merge		3		7350	300	O	-2%
4 Merge to Ponderosa On		2		4900	740		-3%
5 Ponderosa SB On to Merge		3		7350	300	O	-2%
6 Merge to Cameron Off		2		4900	6810	D	-2%
7 Cameron Off to Cameron NB Loop On		2		4900	1210		1%
8 Cameron NB Loop On to Merge		3		7350	300	O	4%
9 Merge to Cameron SB On		2		4900	740		2%
10 Cameron SB On to Merge		3		7350	320	O	1%
11 Merge to Cambridge Off		2		4900	5700	D	-5%
12 Cambridge Off to On		2		4900	1160		5%
13 Cambridge On to Lane Drop		3		7350	2320	O	2%
14 Lane Drop to Bass Off		2		4900	5280	D	-1%
15 Bass Off to On		2		4900	2380		-2%
16 Bass On to Merge		3		7350	300	O	1%
17 Merge to Silva Off		2		4900	4760	D	-5%
18 Silva Off to Silva NB Loop On		2		4900	1820		-3%
19 Silva NB Loop On to Silva SB On		2		4900	1190	O	-3%
20 Silva SB On to El Dorado Off		3		7350	2100	OD	-4%
21 El Dorado Off HOV Start		2		4900	1584		1%
22 HOV Start to El Dorado On	1	2	1500	4900	1056	O	2%
23 El Dorado On to Empire Off	1	2	1500	4900	4342		1%
24 Empire Off to Crest of Hill	1	2	1500	4900	2152		4%
25 Crest of Hill to Empire On	1	2	1500	4900	176		-4%
26 Empire On to Exit Lane	1	2	1500	4900	2724	O	-7%
27 Exit Lane to Bidwell Off	1	3	1500	7350	1320	D	-7%
28 Bidwell Off to Scott NB Loop On	1	2	1500	4900	2060		-2%
29 Scott NB Loop On to Merge	1	3	1500	7350	320	O	-4%
30 Merge to Bidwell SB On	1	2	1500	4900	900		-3%
31 Bidwell SB On to Merge	1	3	1500	7350	1425	O	-2%
32 Merge to Prairie City Off	1	2	1500	4900	7075	D	-1%
33 Prairie Off to Prairie NB Loop On	1	2	1500	4900	1850		-1%
34 Prairie City NB Loop On to Merge	1	3	1500	7350	264	O	1%
35 Merge to Prairie City SB On	1	2	1500	4900	1160		-1%
36 Prairie City SB On to Merge	1	3	1500	7350	1375	O	-1%
37 Merge to Folsom Off	1	2	1500	4900	8610		1%
38 Folsom Off to On	1	2	1500	4900	1795		-2%
39 Folsom On to Hazel Off	1	3	1500	7350	3170	OD	0%
40 Hazel Off to Hazel NB Loop On	1	2	1500	4900	1795		0%
41 Hazel NB Loop On to Merge	1	3	1500	7350	300	O	0%
42 Merge to Hazel SB On	1	2	1500	4900	950		0%
43 Hazel SB On to Rancho Cordova Off	1	3	1500	7350	6446	OD	0%
44 Rancho Cordova Off to Rancho On	1	3	1500	7350	1200		1%

US 50 Westbound		HOV	Mixed	HOV	Mixed	Length	Origin/	
No.	Subsection Description	Lanes	Lanes	Cap	Cap (vph)	(ft)	Destin.	Grade
45	Rancho Cordova On to HOV End	1	3	1500	7350	4024	OD	-1%
46	HOV End to Sunrise Off		4		9800	2480		1%
47	Sunrise Off to On		3		7350	3855		0%
48	Sunrise On to Zinfandel Off		4		9800	5330	OD	0%
49	Zinfandel Off to Zin NB Loop On		4		9800	1110		0%
50	Zin NB Loop On to Zinfandel SB On		4		9800	740	O	0%
51	Zinfandel SB On to Merge		5		12250	1850	O	0%
52	Merge to Mather Off		4		9800	3800	D	0%
53	Mather Off to Mather NB Loop On		4		9800	1220		0%
54	Mather NB Loop On to Mather SB On		5		12250	1110	O	0%
55	Mather SB On to Merge		6		14700	300	O	0%
56	Merge to US 50 WB Mainline Out		5		12250	1900	D	0%

**Exhibit 11. Future 2027 Geometry Unmitigated – US 50 Eastbound**

US 50 Eastbound No. Subsection Description	HOV Lanes	Mixed Lanes	HOV Cap	Mixed Cap (vph)	Length (ft)	Origin/ Destin.	Grade
1 US 50 Mainline EB In to Mather Off		4		9800	5810	OD	0%
2 Mather Off to Mather SB Loop On		4		9800	1320		0%
3 Mather SB Loop On to Merge		5		12250	300	O	1%
4 Merge to Mather NB On		4		9800	800		0%
5 Mather NB On to Merge		5		12250	320	O	0%
6 Merge to Exit Lane		4		9800	3480		0%
7 Exit Lane to Zinfandel Off		5		12250	1425	D	0%
8 Zinfandel Off to Zin SB Loop On		4		9800	1056		1%
9 Zin SB Loop On to Zin NB On		4		9800	1056	O	0%
10 Zin NB On to Merge		5		12250	320	O	0%
11 Merge to Sunrise Off		4		9800	5230	D	0%
12 Sunrise Off to HOV Start		3		7350	1584	D	0%
13 HOV Start to Sunrise On	1	3	1500	7350	2640	O	0%
14 Sunrise On to Merge	1	4	1500	9800	1056	O	0%
15 Merge to Rancho C.Pkwy Off	1	3	1500	7350	6816		1%
16 Rancho C. Off to Rancho C. On	1	3	1500	7350	1200		-1%
17 Rancho C. On to Start Exit Lane	1	3	1500	7350	4656		1%
18 Exit Lane to Hazel Off	1	4	1500	9800	1000	D	0%
19 Hazel Off to Hazel On	1	3	1500	7350	2112		0%
20 Hazel On to Aerojet Off	1	4	1500	9800	528	OD	1%
21 Aerojet Off to Lane Drop	1	4	1500	9800	740		0%
22 Lane Drop to Folsom Off	1	3	1500	7350	2640	D	0%
23 Folsom Off to Folsom On	1	2	1500	4900	1056		0%
24 Folsom On to Merge	1	3	1500	7350	156		1%
25 Merge to Prairie City Off	1	2	1500	4900	10296	D	1%
26 Prairie Off to Prairie NB Loop On	1	2	1500	4900	2320		0%
27 Prairie NB Loop On to Merge	1	3	1500	7350	211	O	0%
28 Merge to Prairie City SB On	1	2	1500	4900	1110		3%
29 Prairie City SB On to Merge	1	3	1500	7350	1320	O	0%
30 Merge to Start Exit Lane	1	2	1500	4900	5280		1%
31 Exit Lane to Bidwell Off	1	3	1500	7350	1584	D	2%
32 Bidwell Off to Bidwell SB Loop On	1	2	1500	4900	2220		3%
33 Bidwell SB Loop On to Scott On	1	3	1500	7350	900		1%
34 Scott NB On to Merge	1	4	1500	9800	1330		1%
35 Merge to Empire Off	1	3	1500	7350	1794	D	6%
36 Empire Off to Crest of Hill	1	3	1500	7350	1216		7%
37 Crest of Hill to Empire On	1	3	1500	7350	758		-6%
38 Empire On to HOV End	1	3	1500	7350	3152		1%
39 HOV End to Latrobe SB Off		3		7350	1584	OD	-3%
40 Latrobe SB Off to El Dorado NB Off		3		7350	1400	D	1%
41 El Dorado NB Off to El Dorado On		2		4900	1640		-2%
42 El Dorado On to Silva Off		3		7350	4380		1%
43 Silva Off to Silva SB On		2		4900	1800		0%
44 Silva SB On to Silva NB On		2		4900	590	O	4%

US 50 Eastbound		HOV	Mixed	HOV	Mixed	Length	Origin/
No.	Subsection Description	Lanes	Lanes	Cap	Cap (vph)	(ft)	Destin. Grade
45	Silva NB On to Bass Off		3		7350	5740	6%
46	Bass Lake Off to End Truck Lane		3		7350	1320	-1%
47	End Truck Lane to Bass Lake On		2		4900	792	7%
48	Bass Lake On to Merge		3		7350	300	1%
49	Merge to Cambridge Off		2		4900	6200	D 0%
50	Cambridge Off to Cambridge On		2		4900	1375	-1%
51	Cambridge On to Merge		3		7350	300	1%
52	Merge to Cameron Park Off		2		4900	7230	D 3%
53	Cameron Off to Cameron On		2		4900	2480	2%
54	Cameron On to Grade Change		2		4900	5280	O 0%
55	Grade Change to Ponderosa Off		2		4900	844	D 4%
56	Ponderosa Off to Ponderosa On		2		4900	1270	2%
57	Ponderosa On to Mainline Out		2		4900	2640	OD -2%

**Exhibit 12. Westbound US 50 Performance – Unmitigated 2027 AM Peak Hour**

US 50 Westbound No. Subsection	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap	V/C Queue	Speed ratio (mph)	Density vpmpl	LOS level	
1 US 50 Main WB to Ponderosa Off	2	2772	278	2772	2772	278	2772	4900	0.57	70	19.8	C	
2 Ponderosa Off to Shingle NB Loop On	2	0	0	2494	0	0	2494	4900	0.51	70	17.8	B	
3 Shingle Sp NB Loop On to Merge	3	372	0	2866	372	0	2866	7350	0.39	70	13.6	B	
4 Merge to Ponderosa On	2	0	0	2866	0	0	2866	4900	0.58	70	20.5	C	
5 Ponderosa SB On to Merge	3	239	0	3105	239	0	3105	7350	0.42	70	14.8	B	
6 Merge to Cameron Off	2	0	678	3105	0	678	3105	4900	0.63	70	22.3	C	
7 Cameron Off to Cam. NB Loop On	2	0	0	2427	0	0	2427	4900	0.50	70	17.3	B	
8 Cameron NB Loop On to Merge	3	249	0	2676	249	0	2676	7350	0.36	70	12.7	B	
9 Merge to Cameron SB On	2	0	0	2676	0	0	2676	4900	0.55	70	19.1	C	
10 Cameron SB On to Merge	3	611	0	3287	611	0	3287	7350	0.45	70	15.7	B	
11 Merge to Cambridge Off	2	0	423	3287	0	423	3287	4900	0.67	69	23.7	C	
12 Cambridge Off to On	2	0	0	2864	0	0	2864	4900	0.58	70	20.5	C	
13 Cambridge On to Lane Drop	3	400	0	3264	400	0	3264	7350	0.44	70	15.5	B	
14 Lane Drop to Bass Off	2	0	195	3264	0	195	3264	4900	0.67	69	23.5	C	
15 Bass Off to On	2	0	0	3069	0	0	3069	4900	0.63	70	22	C	
16 Bass On to Merge	3	1099	0	4168	1099	0	4168	7350	0.57	70	19.9	C	
17 Merge to Silva Off	2	0	332	4168	0	332	4168	4900	0.85	64	32.6	D	
18 Silva Off to Silva NB Loop On	2	0	0	3836	0	0	3836	4900	0.78	67	28.7	D	
19 Silva NB Loop On to Silva SB On	2	153	0	3989	153	0	3989	4900	0.81	66	30.4	D	
20 Silva SB On to El Dorado Off	3	741	612	4730	741	612	3054	7350	Q	0.42	66	15.5	F
21 El Dorado Off HOV Start	2	0	405	4118	0	405	2442	4900	QQ	0.50	44	28	F
22 HOV Start to El Dorado On	2	0	0	3713	0	0	2037	4900	QQ	0.42	31	32.4	F
23 El Dorado On to Empire Off	2	1049	763	4761	1049	763	3085	4900	QQ	0.63	30	52	F
24 Empire Off to Crest of Hill	2	0	0	3998	0	0	2322	4900	QQ	0.47	18	64.9	F
25 Crest of Hill to Empire On	2	0	0	3998	0	0	2322	4900	QQ	0.47	16	73.2	F
26 Empire On to Exit Lane	2	842	0	4840	842	0	3164	4900	QQ	0.65	20	78.4	F
27 Exit Lane to Bidwell Off	3	0	564	4840	0	564	3164	7350	QQ	0.43	10	106.4	F
28 Bidwell Off to Scott NB Loop On	2	0	0	4276	0	0	2600	4900	QQ	0.53	12	111.5	F
29 Scott NB Loop On to Merge	3	73	0	4349	73	0	2673	7350	QQ	0.36	6	143.4	F



30 Merge to Bidwell SB On	2	0	0	4349	0	0	2673	4900	QQ	0.55	11	126.9	F
31 Bidwell SB On to Merge	3	1347	0	5696	1328	0	4000	7350	QQ	0.54	9	144.8	F
32 Merge to Prairie City Off	2	0	1083	5696	0	931	4000	4900	QQ	0.82	19	103	F
33 Prairie Off to Prairie NB Loop On	2	0	0	4613	0	0	3069	4900	QQ	0.63	9	167	F
34 Prairie City NB Loop On to Merge	3	12	0	4624	12	0	3080	7350	QQ	0.42	4	236	F
35 Merge to Prairie City SB On	2	0	0	4624	0	0	3080	4900	QQ	0.63	9	180.8	F
36 Prairie City SB On to Merge	3	592	0	5216	592	0	3673	7350	QQ	0.50	6	215.2	F
37 Merge to Folsom Off	2	0	263	5216	0	231	3673	4900	QQ	0.75	12	148.5	F
38 Folsom Off to On	2	0	0	4953	0	0	3442	4900	QQ	0.70	11	161.1	F
39 Folsom On to Hazel Off	3	1264	604	6217	1264	546	4706	7350	QQ	0.64	9	177.7	F
40 Hazel Off to Hazel NB Loop On	2	0	0	5614	0	0	4160	4900	QQ	0.85	17	122	F
41 Hazel NB Loop On to Merge	3	740	0	6354	740	0	4900	7350	QQ	0.67	10	170.6	F
42 Merge to Hazel SB On	2	0	0	6354	0	0	4900	4900		1.00	53	45.9	E
43 Hazel SB On to Rancho C. Off	3	1833	893	8186	1593	708	6493	7350		0.88	62	34.8	D
44 Rancho C. Off to Rancho C. On	3	0	0	7293	0	0	5785	7350		0.79	67	28.9	D
45 Rancho C. On to HOV End	3	105	0	7398	105	0	5890	7350		0.80	66	29.7	D
46 HOV End to Sunrise Off	4	948	1031	8346	948	846	6837	9800		0.70	69	24.8	C
47 Sunrise Off to On	3	0	0	7315	0	0	5991	7350		0.82	66	30.4	D
48 Sunrise On to Zinfandel Off	4	2691	1762	10006	2400	1473	8391	9800		0.86	64	32.9	D
49 Zinfandel Off to Zin NB Loop On	4	0	0	8244	0	0	6919	9800		0.71	69	25.1	C
50 Zin NB Loop On to Zin SB On	4	1521	0	9765	1521	0	8440	9800		0.86	63	33.2	D
51 Zinfandel SB On to Merge	5	795	0	10560	795	0	9235	12250		0.75	68	27.3	D
52 Merge to Mather Off	4	0	1066	10560	0	931	9235	9800		0.94	58	39.6	E
53 Mather Off to NB Loop On	4	0	0	9494	0	0	8304	9800		0.85	64	32.3	D
54 Mather NB Loop On to SB On	5	348	0	9842	348	0	8652	12250		0.71	69	25.1	C
55 Mather SB On to Merge	6	750	0	10592	750	0	9402	14700		0.64	70	22.5	C
56 Merge to US 50 WB Mainline	5	0	10592	10592	0	9402	9402	12250		0.77	67	27.9	D

Notes:

1. Assumes White Rock Road Connector is built.
2. Assumes 3 new interchanges: Rancho Cordova Parkway, Empire Ranch, Silva Valley.
3. Excludes Shingle Springs Rancheria Casino

Q = Queue caused by mainline demand greater than mainline capacity.

**Exhibit 13. Westbound US 50 Performance – Unmitigated 2027 PM Peak Hour**

US 50 Westbound No. Subsection	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap	V/C Queue	Speed ratio (mph)	Density vpmppl	LOS level
1 US 50 Mainline WB In to Ponderosa Off	2	2237	351	2237	2237	351	2237	4900	0.46	70	16.0	B
2 Ponderosa Off to Shingle Sp NB Loop On	2	0	0	1886	0	0	1886	4900	0.38	70	13.5	B
3 Shingle Sp NB Loop On to Merge	3	180	0	2066	180	0	2066	7350	0.28	70	9.8	A
4 Merge to Ponderosa On	2	0	0	2066	0	0	2066	4900	0.42	70	14.8	B
5 Ponderosa SB On to Merge	3	118	0	2184	118	0	2184	7350	0.30	70	10.4	A
6 Merge to Cameron Off	2	0	758	2184	0	758	2184	4900	0.45	70	15.6	B
7 Cameron Off to Cameron NB Loop On	2	0	0	1426	0	0	1426	4900	0.29	70	10.2	A
8 Cameron NB Loop On to Merge	3	305	0	1731	305	0	1731	7350	0.24	70	8.2	A
9 Merge to Cameron SB On	2	0	0	1731	0	0	1731	4900	0.35	70	12.4	B
10 Cameron SB On to Merge	3	332	0	2063	332	0	2063	7350	0.28	70	9.8	A
11 Merge to Cambridge Off	2	0	274	2063	0	274	2063	4900	0.42	70	14.7	B
12 Cambridge Off to On	2	0	0	1789	0	0	1789	4900	0.37	70	12.8	B
13 Cambridge On to Lane Drop	3	320	0	2109	320	0	2109	7350	0.29	70	10.0	A
14 Lane Drop to Bass Off	2	0	110	2109	0	110	2109	4900	0.43	70	15.1	B
15 Bass Off to On	2	0	0	1999	0	0	1999	4900	0.41	70	14.3	B
16 Bass On to Merge	3	424	0	2423	424	0	2423	7350	0.33	70	11.5	B
17 Merge to Silva Off	2	0	194	2423	0	194	2423	4900	0.49	70	17.3	B
18 Silva Off to Silva NB Loop On	2	0	0	2229	0	0	2229	4900	0.45	70	15.9	B
19 Silva NB Loop On to Silva SB On	2	286	0	2515	286	0	2515	4900	0.51	70	18.0	B
20 Silva SB On to El Dorado Off	3	447	572	2962	447	572	2962	7350	0.40	70	14.1	B
21 El Dorado Off HOV Start	2	0	203	2390	0	203	2390	4900	0.49	70	17.1	B
22 HOV Start to El Dorado On	2	0	0	2187	0	0	2187	4900	0.45	70	15.6	B
23 El Dorado On to Empire Off	2	1370	1023	3558	1328	1011	3515	4900	0.72	69	25.6	C
24 Empire Off to Crest of Hill	2	0	0	2535	0	0	2504	4900	0.51	70	17.9	B
25 Crest of Hill to Empire On	2	0	0	2535	0	0	2504	4900	0.51	70	17.9	B
26 Empire On to Exit Lane	2	285	0	2820	285	0	2789	4900	0.57	70	19.9	C
27 Exit Lane to Bidwell Off	3	0	785	2820	0	777	2789	7350	0.38	70	13.3	B
28 Bidwell Off to Scott NB Loop On	2	0	0	2035	0	0	2013	4900	0.41	70	14.4	B

US 50 Westbound No. Subsection	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap	V/C Queue	Speed ratio (mph)	Density vpmppl	LOS level
29 Scott NB Loop On to Merge	3	83	0	2118	83	0	2096	7350	0.29	70	10.0	A
30 Merge to Bidwell SB On	2	0	0	2118	0	0	2096	4900	0.43	70	15.0	B
31 Bidwell SB On to Merge	3	1067	0	3184	1067	0	3162	7350	0.43	70	15.1	B
32 Merge to Prairie City Off	2	0	201	3184	0	200	3162	4900	0.65	70	22.7	C
33 Prairie Off to Prairie NB Loop On	2	0	0	2983	0	0	2963	4900	0.60	70	21.2	C
34 Prairie City NB Loop On to Merge	3	50	0	3033	50	0	3012	7350	0.41	70	14.3	B
35 Merge to Prairie City SB On	2	0	0	3033	0	0	3012	4900	0.61	70	21.6	C
36 Prairie City SB On to Merge	3	655	0	3687	655	0	3667	7350	0.50	70	17.5	B
37 Merge to Folsom Off	2	0	337	3687	0	335	3667	4900	0.75	68	27.0	D
38 Folsom Off to On	2	0	0	3351	0	0	3332	4900	0.68	69	24.1	C
39 Folsom On to Hazel Off	3	1489	490	4839	1328	471	4659	7350	0.63	70	22.3	C
40 Hazel Off to Hazel NB Loop On	2	0	0	4349	0	0	4188	4900	0.85	64	32.8	D
41 Hazel NB Loop On to Merge	3	348	0	4697	348	0	4536	7350	0.62	70	21.6	C
42 Merge to Hazel SB On	2	0	0	4697	0	0	4536	4900	0.93	59	38.1	E
43 Hazel SB On to Rancho Cordova Off	3	1112	1480	5809	1112	1328	5648	7350	0.77	67	28.0	D
44 Rancho Cordova Off to Rancho On	3	0	0	4329	0	0	4208	7350	0.57	70	20.0	C
45 Rancho Cordova On to HOV End	3	77	0	4406	77	0	4285	7350	0.58	70	20.4	C
46 HOV End to Sunrise Off	4	562	967	4968	562	944	4847	9800	0.49	70	17.3	B
47 Sunrise Off to On	3	0	0	4001	0	0	3904	7350	0.53	70	18.6	C
48 Sunrise On to Zinfandel Off	4	2372	833	6373	2372	820	6276	9800	0.64	70	22.5	C
49 Zinfandel Off to Zin NB Loop On	4	0	0	5540	0	0	5456	9800	0.56	70	19.5	C
50 Zin NB Loop On to Zinfandel SB On	4	2130	0	7670	1800	0	7256	9800	0.74	68	26.6	D
51 Zinfandel SB On to Merge	5	617	0	8287	617	0	7873	12250	0.64	70	22.6	C
52 Merge to Mather Off	4	0	494	8287	0	469	7873	9800	0.80	66	29.8	D
53 Mather Off to Mather NB Loop On	4	0	0	7793	0	0	7403	9800	0.76	68	27.3	D
54 Mather NB Loop On to Mather SB On	5	607	0	8400	607	0	8010	12250	0.65	70	23.0	C
55 Mather SB On to Merge	6	941	0	9341	941	0	8951	14700	0.61	70	21.3	C
56 Merge to US 50 WB Mainline Out	5	0	9341	9341	0	8951	8951	12250	0.73	68	26.2	D

Notes:

1. Assumes White Rock Road Connector is built.
2. Assumes 3 new interchanges: Rancho Cordova Parkway, Empire Ranch, Silva Valley.
3. Excludes Shingle Springs Rancheria Casino

Q = Queue caused by mainline demand greater than mainline capacity.

**Exhibit 14. Eastbound US 50 Performance - Unmitigated 2027 AM Peak Hour**

US 50 Eastbound No. Subsection Description	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap	V/C Queue	Speed ratio (mph)	Density vpmpl	LOS level
1 US 50 Mainline EB to Mather Off	4	11177	2446	11177	9800	1500	9800	9800	1.00	53	45.9	E
2 Mather Off to Mather SB Loop On	4	0	0	8731	0	0	7655	9800	0.78	67	28.6	D
3 Mather SB Loop On to Merge	5	149	0	8880	149	0	7804	12250	0.64	70	22.4	C
4 Merge to Mather NB On	4	0	0	8880	0	0	7804	9800	0.80	66	29.4	D
5 Mather NB On to Merge	5	226	0	9106	226	0	8030	12250	0.66	70	23.1	C
6 Merge to Exit Lane	4	0	0	9106	0	0	8030	9800	0.82	65	30.7	D
7 Exit Lane to Zinfandel Off	5	0	2361	9106	0	2082	8030	12250	0.66	70	23.1	C
8 Zinfandel Off to Zin SB Loop On	4	0	0	6745	0	0	5948	9800	0.61	70	21.3	C
9 Zin SB Loop On to Zin NB On	4	189	0	6934	189	0	6137	9800	0.63	70	22.0	C
10 Zin NB On to Merge	5	528	0	7462	528	0	6665	12250	0.54	70	19.0	C
11 Merge to Sunrise Off	4	0	2528	7462	0	2258	6665	9800	0.68	69	24.1	C
12 Sunrise Off to HOV Start	3	0	549	4934	0	490	4407	7350	0.60	70	21.0	C
13 HOV Start to Sunrise On	3	0	0	4385	0	0	3917	7350	0.53	70	18.7	C
14 Sunrise On to Merge	4	942	0	5327	942	0	4859	9800	0.50	70	17.4	B
15 Merge to Rancho C.Pkwy Off	3	0	196	5327	0	179	4859	7350	0.66	69	23.3	C
16 Rancho C. Off to Rancho C. On	3	0	0	5131	0	0	4680	7350	0.64	70	22.4	C
17 Rancho C. On to Start Exit Lane	3	493	0	5624	493	0	5173	7350	0.70	69	25.0	C
18 Exit Lane to Hazel Off	4	0	2229	5624	0	2052	5173	9800	0.53	70	18.5	C
19 Hazel Off to Hazel On	3	0	0	3395	0	0	3122	7350	0.42	70	14.9	B
20 Hazel On to Aerojet Off	4	640	323	4035	640	302	3762	9800	0.38	70	13.4	B
21 Aerojet Off to Lane Drop	4	0	0	3712	0	0	3460	9800	0.35	70	12.4	B
22 Lane Drop to Folsom Off	3	0	1445	3712	0	1348	3460	7350	0.47	70	16.5	B
23 Folsom Off to Folsom On	2	0	0	2267	0	0	2113	4900	0.43	70	15.1	B
24 Folsom On to Merge	3	252	0	2519	252	0	2364	7350	0.32	70	11.3	B
25 Merge to Prairie City Off	2	0	609	2519	0	572	2364	4900	0.48	70	16.9	B
26 Prairie Off to Prairie NB Loop On	2	0	0	1910	0	0	1792	4900	0.37	70	12.8	B
27 Prairie NB Loop On to Merge	3	29	0	1939	29	0	1821	7350	0.25	70	8.7	A
28 Merge to Prairie City SB On	2	0	0	1939	0	0	1821	4900	0.37	70	13.0	B
29 Prairie City SB On to Merge	3	154	0	2092	154	0	1975	7350	0.27	70	9.4	A
30 Merge to Start Exit Lane	2	0	0	2092	0	0	1975	4900	0.40	70	14.1	B
31 Exit Lane to Bidwell Off	3	0	273	2092	0	258	1975	7350	0.27	70	9.4	A

US 50 Eastbound No. Subsection Description	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap	V/C Queue	Speed ratio	Density (mph)	LOS vpmp/level
32 Bidwell Off to Bidwell SB Loop On	2	0	0	1820	0	0	1717	4900	0.35	70	12.3	B
33 Bidwell SB Loop On to Scott On	3	406	0	2226	406	0	2123	7350	0.29	70	10.1	A
34 Scott NB On to Merge	4	28	0	2254	28	0	2151	9800	0.22	70	7.7	A
35 Merge to Empire Off	3	0	111	2254	0	106	2151	7350	0.29	70	10.2	A
36 Empire Off to Crest of Hill	3	0	0	2142	0	0	2045	7350	0.28	70	9.7	A
37 Crest of Hill to Empire On	3	0	0	2142	0	0	2045	7350	0.28	70	9.7	A
38 Empire On to HOV End	3	762	0	2904	762	0	2807	7350	0.38	70	13.4	B
39 HOV End to Latrobe SB Off	3	225	1293	3129	225	1253	3032	7350	0.41	70	14.4	B
40 Latrobe SB Off to El Dorado NB Off	3	0	323	1836	0	313	1779	7350	0.24	70	8.5	A
41 El Dorado NB Off to El Dorado On	2	0	0	1513	0	0	1466	4900	0.30	70	10.5	A
42 El Dorado On to Silva Off	3	399	83	1912	399	81	1865	7350	0.25	70	8.9	A
43 Silva Off to Silva SB On	2	0	0	1829	0	0	1784	4900	0.36	70	12.7	B
44 Silva SB On to Silva NB On	2	915	0	2744	915	0	2699	4900	0.55	70	19.3	C
45 Silva NB On to Bass Off	3	432	251	3176	432	247	3131	7350	0.43	70	14.9	B
46 Bass Lake Off to End Truck Lane	3	0	0	2925	0	0	2884	7350	0.39	70	13.7	B
47 End Truck Lane to Bass Lake On	2	0	0	2925	0	0	2884	4900	0.59	70	20.6	C
48 Bass Lake On to Merge	3	129	0	3054	129	0	3013	7350	0.41	70	14.3	B
49 Merge to Cambridge Off	2	0	253	3054	0	250	3013	4900	0.61	70	21.6	C
50 Cambridge Off to Cambridge On	2	0	0	2801	0	0	2763	4900	0.56	70	19.7	C
51 Cambridge On to Merge	3	386	0	3187	386	0	3149	7350	0.43	70	15.0	B
52 Merge to Cameron Park Off	2	0	507	3187	0	501	3149	4900	0.64	70	22.6	C
53 Cameron Off to Cameron On	2	0	0	2680	0	0	2648	4900	0.54	70	18.9	C
54 Cameron On to Grade Change	2	666	0	3346	666	0	3314	4900	0.68	69	23.9	C
55 Grade Change to Ponderosa Off	2	0	955	3346	0	946	3314	4900	0.68	69	23.9	C
56 Ponderosa Off to Ponderosa On	2	0	0	2391	0	0	2368	4900	0.48	70	16.9	B
57 Ponderosa On to Mainline Out	2	307	2698	2698	307	2675	2675	4900	0.55	70	19.1	C

Notes:

1. Assumes White Rock Road Connector is built.
2. Assumes 3 new interchanges: Rancho Cordova Parkway, Empire Ranch, Silva Valley.
3. Excludes Shingle Springs Rancheria Casino

Q = Queue caused by mainline demand greater than mainline capacity.

**Exhibit 15. Eastbound US 50 Performance - Unmitigated 2027 PM Peak Hour**

US 50 Eastbound No. Subsection Description	Mixed Lanes	Demand			Adjusted			Mixed Cap (vph)	V/C Queue	Speed ratio (mph)	Density vpmp/level	LOS
		On	Off	Mainline	On	Off	Mainline					
1 US 50 Mainline EB In to Mather Off	4	9061	1366	9061	9061	1366	9061	9800	0.92	60	38.0	E
2 Mather Off to Mather SB Loop On	4	0	0	7695	0	0	7695	9800	0.79	67	28.8	D
3 Mather SB Loop On to Merge	5	160	0	7855	160	0	7855	12250	0.64	70	22.5	C
4 Merge to Mather NB On	4	0	0	7855	0	0	7855	9800	0.80	66	29.7	D
5 Mather NB On to Merge	5	652	0	8507	652	0	8507	12250	0.69	69	24.6	C
6 Merge to Exit Lane	4	0	0	8507	0	0	8507	9800	0.87	63	33.7	D
7 Exit Lane to Zinfandel Off	5	0	1655	8507	0	1655	8507	12250	0.69	69	24.6	C
8 Zinfandel Off to Zin SB Loop On	4	0	0	6852	0	0	6852	9800	0.70	69	24.8	C
9 Zin SB Loop On to Zin NB On	4	266	0	7118	266	0	7118	9800	0.73	68	26.0	D
10 Zin NB On to Merge	5	1009	0	8127	1009	0	8127	12250	0.66	69	23.4	C
11 Merge to Sunrise Off	4	0	2791	8127	0	2791	8127	9800	0.83	65	31.2	D
12 Sunrise Off to HOV Start	3	0	600	5336	0	600	5336	7350	0.73	68	26.0	C
13 HOV Start to Sunrise On	3	0	0	4736	0	0	4736	7350	0.64	70	22.7	C
14 Sunrise On to Merge	4	1084	0	5820	1084	0	5820	9800	0.59	70	20.8	C
15 Merge to Rancho C. Pkwy Off	3	0	141	5820	0	141	5820	7350	0.79	67	29.2	D
16 Rancho C. Off to Rancho C. On	3	0	0	5679	0	0	5679	7350	0.77	67	28.2	D
17 Rancho C. On to Start Exit Lane	3	1090	0	6769	1090	0	6769	7350	0.92	60	37.7	E
18 Exit Lane to Hazel Off	4	0	1963	6769	0	1963	6769	9800	0.69	69	24.5	C
19 Hazel Off to Hazel On	3	0	0	4806	0	0	4806	7350	0.65	70	23.0	C
20 Hazel On to Aerojet Off	4	807	74	5613	807	74	5613	9800	0.57	70	20.0	C
21 Aerojet Off to Lane Drop	4	0	0	5538	0	0	5538	9800	0.57	70	19.8	C
22 Lane Drop to Folsom Off	3	0	1443	5538	0	1443	5538	7350	0.75	68	27.2	D
23 Folsom Off to Folsom On	2	0	0	4096	0	0	4096	4900	0.84	65	31.6	D
24 Folsom On to Merge	3	110	0	4206	110	0	4206	7350	0.57	70	20.0	C
25 Merge to Prairie City Off	2	0	313	4206	0	313	4206	4900	0.86	64	33.0	D
26 Prairie Off to Prairie NB Loop On	2	0	0	3893	0	0	3893	4900	0.79	66	29.3	D
27 Prairie NB Loop On to Merge	3	29	0	3922	29	0	3922	7350	0.53	70	18.7	C
28 Merge to Prairie City SB On	2	0	0	3922	0	0	3922	4900	0.80	66	29.6	D
29 Prairie City SB On to Merge	3	258	0	4179	258	0	4179	7350	0.57	70	19.9	C
30 Merge to Start Exit Lane	2	0	0	4179	0	0	4179	4900	0.85	64	32.7	D
31 Exit Lane to Bidwell Off	3	0	458	4179	0	458	4179	7350	0.57	70	19.9	C

US 50 Eastbound No. Subsection Description	Mixed Lanes	Demand On	Demand Off	Demand Mainline	Adjusted On	Adjusted Off	Adjusted Mainline	Mixed Cap (vph)	V/C Queue ratio	Speed (mph)	Density vpmp/level	LOS
32 Bidwell Off to Bidwell SB Loop On	2	0	0	3721	0	0	3721	4900	0.76	68	27.5	D
33 Bidwell SB Loop On to Scott On	3	1010	0	4731	1010	0	4731	7350	0.64	70	22.6	C
34 Scott NB On to Merge	4	97	0	4828	97	0	4828	9800	0.49	70	17.2	B
35 Merge to Empire Off	3	0	981	4828	0	981	4828	7350	0.66	70	23.1	C
36 Empire Off to Crest of Hill	3	0	0	3848	0	0	3848	7350	0.52	70	18.3	C
37 Crest of Hill to Empire On	3	0	0	3848	0	0	3848	7350	0.52	70	18.3	C
38 Empire On to HOV End	3	789	0	4637	789	0	4637	7350	0.63	70	22.2	C
39 HOV End to Latrobe SB Off	3	385	375	5022	385	375	5022	7350	0.68	69	24.2	C
40 Latrobe SB Off to El Dorado NB Off	3	0	94	4647	0	94	4647	7350	0.63	70	22.2	C
41 El Dorado NB Off to El Dorado On	2	0	0	4553	0	0	4553	4900	0.93	59	38.4	E
42 El Dorado On to Silva Off	3	1051	635	5604	1051	635	5434	7350 <sup>Q</sup>	0.74	36	50.2	F
43 Silva Off to Silva SB On	2	0	0	4969	0	0	4799	4900 <sup>QQ</sup>	0.98	30	81.2	F
44 Silva SB On to Silva NB On	2	101	0	5070	101	0	4900	4900	1.00	53	45.9	E
45 Silva NB On to Bass Off	3	204	492	5274	204	476	5104	7350	0.69	69	24.6	C
46 Bass Lake Off to End Truck Lane	3	0	0	4782	0	0	4628	7350	0.63	70	22.1	C
47 End Truck Lane to Bass Lake On	2	0	0	4782	0	0	4628	4900	0.94	58	39.8	E
48 Bass Lake On to Merge	3	231	0	5013	231	0	4859	7350	0.66	69	23.3	C
49 Merge to Cambridge Off	2	0	540	5013	0	523	4859	4900	0.99	54	44.9	E
50 Cambridge Off to Cambridge On	2	0	0	4473	0	0	4335	4900	0.88	62	34.9	D
51 Cambridge On to Merge	3	343	0	4816	343	0	4678	7350	0.64	70	22.4	C
52 Merge to Cameron Park Off	2	0	999	4816	0	970	4678	4900	0.95	57	40.8	E
53 Cameron Off to Cameron On	2	0	0	3817	0	0	3708	4900	0.76	68	27.4	D
54 Cameron On to Grade Change	2	783	0	4600	783	0	4491	4900	0.92	60	37.4	E
55 Grade Change to Ponderosa Off	2	0	1408	4600	0	1375	4491	4900	0.92	60	37.4	E
56 Ponderosa Off to Ponderosa On	2	0	0	3192	0	0	3116	4900	0.64	70	22.3	C
57 Ponderosa On to Mainline Out	2	377	3569	3569	377	3493	3493	4900	0.71	69	25.4	C

Notes:

1. Assumes White Rock Road Connector is built.
2. Assumes 3 new interchanges: Rancho Cordova Parkway, Empire Ranch, Silva Valley.
3. Excludes Shingle Springs Rancheria Casino

Q = Queue caused by mainline demand greater than mainline capacity.

## El Dorado County General Plan Forecasts

The analysis has focused up to this point on the forecasts produced by the SACMET model for the year 2027, because the El Dorado County model does not extend into Sacramento County. However, the 2025 forecasts produced by the El Dorado County Model for the 2004 General Plan are 10% to 28% higher than the SACMET model for US 50 from Bass Lake to Ponderosa. Consequently, this section reviews the projected freeway operations for 2025 as predicted by the El Dorado County Model for the 2004 General Plan.

The tables below show the AM and PM peak hour forecasts produced by the El Dorado County Model for the year 2025 under the 2004 General Plan. Also shown are the maximum of the AM or PM peak hour demand/capacity ratios that would result from these forecasts (Note that, unlike the earlier FREQ analyses for the SACMET model, these demand/capacity ratios do not take into account the impacts of upstream bottlenecks on the number of vehicles that could actually arrive at a downstream bottleneck during the peak hour).

US 50 would have significant congestion in the westbound direction in 2025 during the AM peak hour. Backups would occur between Bass Lake and El Dorado Hills.

During the PM peak hour, backups would occur in 2025 in the eastbound direction at El Dorado Hills. Minor eastbound bottlenecks would occur at Bass Lake, Cambridge, and Cameron Park.



### Exhibit 16. US 50 Westbound 2025 Forecasts – El Dorado County Model

US 50 Westbound No. Subsection	AM Peak Hour			PM Peak Hour			HOV Max V/C	Mixed Max V/C
	Demand On	Demand Off	Demand Mainline	Demand On	Demand Off	Demand Mainline		
1US 50 Mainline WB In to Ponderosa Off		450	3012		735	3868		0.79
2Ponderosa Off to Shingle Sp NB Loop On			2562			3133		0.64
3Shingle Sp NB Loop On to Merge	498		3060	534		3667		0.50
4Merge to Ponderosa On			3060			3667		0.75
5Ponderosa SB On to Merge	498		3558	340		4007		0.55
6Merge to Cameron Off		311	3558		797	4007		0.82
7Cameron Off to Cameron NB Loop On			3247			3210		0.66
8Cameron NB Loop On to Merge	555		3802	719		3929		0.53
9Merge to Cameron SB On			3802			3929		0.80
10Cameron SB On to Merge	755		4557	509		4438		0.62
11Merge to Cambridge Off		87	4557		152	4438		0.93
12Cambridge Off to On			4470			4286		0.91
13Cambridge On to Lane Drop	886		5356	586		4872		0.73
14Lane Drop to Bass Off		282	5356		506	4872		1.09
15Bass Off to On			5074			4366		1.04
16Bass On to Merge	930		6004	670		5036		0.82
17Merge to Silva Off		1253	6004		1469	5036		1.23
18Silva Off to Silva NB Loop On			4751			3567		0.97
19Silva NB Loop On to Silva SB On	659		5410	386		3953		1.10
20Silva SB On to El Dorado Off	780	1083	6190	308	1086	4261		1.26
21El Dorado Off HOV Start			5107			3175		1.04
22HOV Start to El Dorado On			5107			3175	0.33	0.94
23El Dorado On to Empire Off	1161		6268	941		4116	0.41	1.15

**Notes:**

Demands are in units of vehicles per hour for all vehicles (HOV plus non-HOV)

HOV V/C is the future demand/capacity ratio for the HOV lane (Maximum of AM or PM peak hour).

Mixed V/C is the future demand/capacity ratio for the existing mixed flow lanes (Maximum of AM or PM peak hour).

### Exhibit 17. US 50 Eastbound 2025 Forecasts – El Dorado County Model

US 50 Eastbound No. Subsection Description	AM Peak Hour			PM Peak Hour			HOV Max V/C	Mixed Max V/C
	Demand On	Demand Off	Demand Mainline	Demand On	Demand Off	Demand Mainline		
38 Empire On to HOV End			4107			6309	0.41	1.16
39 HOV End to Latrobe SB Off		503	4107		673	6309		0.86
40 Latrobe SB Off to El Dorado NB Off		502	3604		695	5636		0.77
41 El Dorado NB Off to El Dorado On			3102			4941		1.01
42 El Dorado On to Silva Off	1021	616	4123	1073	1252	6014		1.23
43 Silva Off to Silva SB On			3507			4762		0.97
44 Silva SB On to Silva NB On	702		4209	685		5447		1.11
45 Silva NB On to Bass Off	573	546	4782	846	897	6293		0.86
46 Bass Lake Off to End Truck Lane			4236			5396		0.73
47 End Truck Lane to Bass Lake On			4236			5396		1.10
48 Bass Lake On to Merge	412		4648	376		5772		0.79
49 Merge to Cambridge Off		473	4648		892	5772		1.18
50 Cambridge Off to Cambridge On			4175			4880		1.00
51 Cambridge On to Merge	143		4318	154		5034		0.68
52 Merge to Cameron Park Off		1180	4318		1523	5034		1.03
53 Cameron Off to Cameron On			3138			3511		0.72
54 Cameron On to Grade Change	788		3926	454		3965		0.81
55 Grade Change to Ponderosa Off		811	3926		1075	3965		0.81
56 Ponderosa Off to Ponderosa On			3115			2890		0.64
57 Ponderosa On to Mainline Out	692		3807	640		3530		0.78

Notes:

Demands are in units of vehicles per hour for all vehicles (HOV plus non-HOV)

HOV V/C is the future demand/capacity ratio for the HOV lane (Maximum of AM or PM peak hour).

Mixed V/C is the future demand/capacity ratio for the existing mixed flow lanes (Maximum of AM or PM peak hour).

## 4. Freeway Improvements For 2025

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This chapter presents three sets of recommended improvements for the US 50 freeway within the study corridor from Mather Field Road in Rancho Cordova to Ponderosa Road in El Dorado County. These three sets of improvements mitigate the forecasted AM and PM peak hour demands forecasted for the year 2025/2027 by the SACMET model and by the El Dorado County model for 2025 based on the 2004 El Dorado County General Plan. One set of improvements mitigates the SACMET forecasts. The second set of improvements mitigates the El Dorado General Plan Model forecasts. The third set, combines both improvements into a single set of improvements designed to mitigate the maximum of either model's forecasts for 2025/2027.

The recommended improvements are targeted to preserving a low to middle level of service "E" on the freeway (0.90 to 0.95 volume/capacity) during the entire peak periods. Thus these improvements provide a 5% to 10% margin for fluctuations in both the forecasted peak hour demands and the capacity of the freeway. This margin is desirable because on some days of the year the demand will exceed the forecasted volumes predicted by the SACMET and El Dorado County models. On other days the capacity may be lower due to slower trucks or distractions on the side of the road.

### Capacity Improvements – SACMET Forecasts

The recommended capacity improvements to relieve the SACMET model forecasted level of service "F" conditions in the year 2027 are shown in the following two exhibits:

- Exhibit 18. Improvements to US 50 Westbound – SACMET Forecasts
- Exhibit 19. Improvements to US 50 Eastbound – SACMET Forecasts

The recommended improvements will preserve level of service "E" or better peak hour operating conditions on the US 50 freeway through the year 2027.

Approximately 3.1 lane-miles of additional HOV lanes and 6.5 lane-miles of primarily auxiliary lanes would be required in El Dorado County to preserve level of service "E" through the year 2027 under the SACMET forecasts.

The specific improvements required in El Dorado County are:

#### Westbound US 50 – El Dorado County

1. Construct 0.9-mile long HOV lane starting at Silva Valley and tying into existing HOV lane at El Dorado Hills.
2. Construct additional auxiliary lanes between El Dorado Hills and Silva Valley as part of Silva Valley interchange project.

3. Construct auxiliary lane between El Dorado Hills and Empire Ranch as part of Empire Ranch interchange project.

#### Eastbound US 50 – El Dorado County

4. Construct 2.2-mile long HOV lane tying into existing HOV lane at El Dorado Hills and continuing to Silva Valley.
5. Extend third mixed flow lane from Empire Ranch to Silva Valley as part of Empire Ranch and Silva Valley interchange projects.
6. Add auxiliary lane from Bass Lake to Cambridge.
7. Add auxiliary lane from Cambridge to Cameron Park.
8. Add auxiliary lane from Cameron Park to Ponderosa.

An additional 3.9 lane-miles of additional HOV lanes and 8.7 lane-miles of additional auxiliary and through lanes would be required in Sacramento County to maintain level of service “E” conditions through 2027 east of Mather Field Road during both peak periods.

## Capacity Improvements – County General Plan Forecasts

The recommended capacity improvements to relieve El Dorado (2004) General Plan forecasted level of service “F” conditions in the year 2025 are shown in the following two exhibits:

- Exhibit 20. Improvements to US 50 Westbound – El Dorado General Plan Forecasts
- Exhibit 21. Improvements to US 50 Eastbound – El Dorado General Plan Forecasts

The recommended improvements will preserve level of service “E” or better peak hour operating conditions on the US 50 freeway through the year 2025.

Approximately 10.5 lane-miles of additional HOV lanes and 8.7 lane-miles of primarily auxiliary lanes would be required in El Dorado County to preserve level of service “E” through the year 2025 under the 2004 County General Plan forecasts.

The specific improvements required in El Dorado County are:

#### Westbound US 50 – El Dorado County

1. Construct 5.4-mile long HOV lane starting at Cambridge (exact start point to be determined during final design) and tying into existing HOV lane at El Dorado Hills.
2. Add auxiliary lane from Bass Lake to Silva Valley.
3. Add auxiliary lane from Cambridge to Bass Lake.
4. Construct additional through lanes and auxiliary lanes between El Dorado Hills and Silva Valley as part of Silva Valley interchange project.
5. Construct auxiliary lane between El Dorado Hills and Empire Ranch as part of Empire Ranch interchange project.

#### Eastbound US 50 – El Dorado County

6. Construct 5.1-mile long HOV lane tying into existing HOV lane at El Dorado Hills and continuing through the Cambridge Interchange (Exact terminus of HOV lane to be determined during final design).
7. Extend third mixed flow lane from Empire Ranch to Silva Valley as part of Empire Ranch and Silva Valley interchange projects.
8. Extend third mixed flow lane (truck climb lane) through Bass Lake to Cambridge.
9. Add auxiliary lane from Cambridge to Cameron Park.

An additional 3.9 lane-miles of additional HOV lanes and 8.7 lane-miles of additional auxiliary and through lanes would be required in Sacramento County to maintain level of service “E” conditions through 2027 east of Mather Field Road during both peak periods.

### Capacity Improvements – Combined Forecasts

The recommended capacity improvements to relieve forecasted level of service “F” conditions in the year 2027 (by both the SACMET and El Dorado General Plan models) are shown in the following two exhibits:

- Exhibit 22. Improvements to US 50 Westbound – Combined Forecasts
- Exhibit 23. Improvements to US 50 Eastbound – Combined Forecasts

The recommended improvements will preserve level of service “E” or better peak hour operating conditions on the US 50 freeway through the year 2027.

Approximately 10.5 lane-miles of additional HOV lanes and 9.8 lane-miles of primarily auxiliary lanes would be required in El Dorado County to preserve level of service “E” through the year 2027 under the Combined SACMET and El Dorado General Plan forecasts.

The specific improvements required in El Dorado County are:

#### Westbound US 50 – El Dorado County

1. Construct 5.4-mile long HOV lane starting at Cambridge (Exact start point to be determined in final design) and tying into existing HOV lane at El Dorado Hills.
2. Add auxiliary lane from Bass Lake to Silva Valley.
3. Add auxiliary lane from Cambridge to Bass Lake.
4. Construct additional through lanes and auxiliary lanes between El Dorado Hills and Silva Valley as part of Silva Valley interchange project.
5. Construct auxiliary lane between El Dorado Hills and Empire Ranch as part of Empire Ranch interchange project.

#### Eastbound US 50 – El Dorado County

6. Construct 5.1-mile long HOV lane tying into existing HOV lane at El Dorado Hills and continuing through the Cambridge Interchange (Exact terminus of HOV lane to be determined during final design).

7. Extend third mixed flow lane from Empire Ranch to Silva Valley as part of Empire Ranch and Silva Valley interchange projects.
8. Extend third mixed flow lane (truck climb lane) through Bass Lake to Cambridge.
9. Add auxiliary lane from Cambridge to Cameron Park.
10. Add auxiliary lane from Cameron Park to Ponderosa.

An additional 3.9 lane-miles of additional HOV lanes and 8.7 lane-miles of additional auxiliary and through lanes would be required in Sacramento County to maintain level of service “E” conditions through 2027 east of Mather Field Road during both peak periods.

## Impact of White Rock Road Connector on Recommendations

The SACMET 2027 model has White Rock Road upgraded to a 4 lane divided arterial its full length within both El Dorado and Sacramento counties. If White Rock Road were to remain instead as a 2-lane road that would have no significant effect on the forecasted 2027 AM or PM peak period volumes on US 50 east of the future Silva Valley Interchange.

The proposed widening of White Rock to 4 lanes would remove around 120 to 130 vehicles from each direction of US 50 at the Sacramento/El Dorado county line during the morning and evening peak 3-hour periods.

This change in peak period traffic is not sufficient to affect the recommended improvements for US 50 within El Dorado County.

### Exhibit 18. Improvements to US 50 Westbound – SACMET Forecasts

US 50 Westbound No. Subsection Description	Length (ft)	Existing		Added		Total		UnMitigated		Mitigated	
		HOV Lanes	Mixed Lanes	HOV Lanes	Other Lanes	HOV Lanes	Mixed Lanes	HOV V/C	Mixed V/C	HOV V/C	Mixed V/C
1US 50 Mainline WB to Ponderosa	6,920		2			2		0.57		0.57	
2Ponderosa Off to Shingle NB Lp On	1,320		2			2		0.51		0.51	
3Shingle Sp NB Loop On to Merge	300		3			3		0.39		0.39	
4Merge to Ponderosa On	740		2			2		0.58		0.58	
5Ponderosa SB On to Merge	300		3			3		0.42		0.42	
6Merge to Cameron Off	6,810		2			2		0.63		0.63	
7Cameron Off to Cameron NB Lp On	1,210		2			2		0.50		0.50	
8Cameron NB Loop On to Merge	300		3			3		0.36		0.36	
9Merge to Cameron SB On	740		2			2		0.55		0.55	
10Cameron SB On to Merge	320		3			3		0.45		0.45	
11Merge to Cambridge Off	5,700		2			2		0.67		0.67	
12Cambridge Off to On	1,160		2			2		0.58		0.58	
13Cambridge On to Lane Drop	2,320		3			3		0.44		0.44	
14Lane Drop to Bass Off	5,280		2			2		0.67		0.67	
15Bass Off to On	2,380		2			2		0.63		0.63	
16Bass On to Merge	300		3			3		0.57		0.57	
17Merge to Silva Off	4,760		2			2		0.85		0.85	
18Silva Off to Silva NB Loop On	1,820		2			2		0.78		0.78	
19Silva NB Loop On to Silva SB On	1,190		2	1		1	2	0.81	0.26	0.73	
20Silva SB On to El Dorado Off	2,100		2	1	1	1	3	0.97	0.31	0.58	
21El Dorado Off HOV Start	1,584		2	1		1	2	0.84	0.27	0.76	
22HOV Start to El Dorado On	1,056	1	2			1	2	0.27	0.76	0.27	0.76
23El Dorado On to Empire Off	4,342	1	2		1	1	3	0.34	0.97	0.34	0.65
<b>Subtotal El Dorado - Miles</b>	<b>10.0</b>			<b>0.9</b>	<b>1.2</b>						
24Empire Off to Crest of Hill	2,152	1	2			1	2	0.29	0.82	0.29	0.82
25Crest of Hill to Empire On	176	1	2			1	2	0.29	0.82	0.29	0.82
26Empire On to Exit Lane	2,724	1	2		1	1	3	0.35	0.99	0.35	0.66
27Exit Lane to Bidwell Off	1,320	1	3			1	3	0.35	0.66	0.35	0.66
28Bidwell Off to Scott NB Loop On	2,060	1	2			1	2	0.31	0.87	0.31	0.87
29Scott NB Loop On to Merge	320	1	3			1	3	0.31	0.59	0.31	0.59
30Merge to Bidwell SB On	900	1	2			1	2	0.31	0.89	0.31	0.89
31Bidwell SB On to Merge	1,425	1	3			1	3	0.41	0.77	0.41	0.77
32Merge to Prairie City Off	7,075	1	2		1	1	3	0.41	1.16	0.41	0.77
33Prairie Off to Prairie NB Loop On	1,850	1	2		1	1	3	0.33	0.94	0.33	0.63
34Prairie City NB Loop On to Merge	264	1	3			1	3	0.33	0.63	0.33	0.63
35Merge to Prairie City SB On	1,160	1	2		1	1	3	0.33	0.94	0.33	0.63
36Prairie City SB On to Merge	1,375	1	3			1	3	0.38	0.71	0.38	0.71
37Merge to Folsom Off	8,610	1	2		1	1	3	0.38	1.06	0.38	0.71
38Folsom Off to On	1,795	1	2		1	1	3	0.36	1.01	0.36	0.67
39Folsom On to Hazel Off	3,170	1	3			1	3	0.45	0.85	0.45	0.85
40Hazel Off to Hazel NB Loop On	1,795	1	2		1	1	3	0.41	1.15	0.41	0.76
41Hazel NB Loop On to Merge	300	1	3			1	3	0.46	0.86	0.46	0.86
42Merge to Hazel SB On	950	1	2		1	1	3	0.46	1.30	0.46	0.86
43Hazel SB On to Rancho C. Off	6,446	1	3		1	1	4	0.59	1.11	0.59	0.84
44Rancho C. Off to Rancho C. On	1,200	1	3		1	1	4	0.53	0.99	0.53	0.74

US 50 Westbound No. Subsection Description	Length (ft)	Existing		Added		Total		UnMitigated		Mitigated	
		HOV Lanes	Mixed Lanes	HOV Lanes	Other Lanes	HOV Lanes	Mixed Lanes	HOV V/C	Mixed V/C	HOV V/C	Mixed V/C
45Rancho Cordova On to HOV End	4,024	1	3		1	1	4	0.53	1.01	0.53	0.75
46HOV End to Sunrise Off	2,480		4	1		1	4		0.85	0.54	0.77
47Sunrise Off to On	3,855		3	1		1	3		1.00	0.48	0.90
48Sunrise On to Zinfandel Off	5,330		4	1		1	4		1.02	0.65	0.92
49Zinfandel Off to Zin NB Loop On	1,110		4	1		1	4		0.84	0.54	0.76
50Zin NB Loop On to Zinfandel SB On	740		4	1		1	4		1.00	0.64	0.90
51Zinfandel SB On to Merge	1,850		5	1		1	5		0.86	0.69	0.78
52Merge to Mather Off	3,800		4	1	1	1	5		1.08	0.69	0.78
53Mather Off to Mather NB Loop On	1,220		4	1		1	4		0.97	0.62	0.87
54Mather NB Lp On to Mather SB On	1,110		5				5		0.80		0.80
55Mather SB On to Merge	300		6				6		0.72		0.72
56Merge to US 50 WB Mainline Out	1,900		5				5		0.86		0.86
<b>Subtotal Sacramento - Miles</b>	<b>14.2</b>			<b>3.9</b>	<b>7.8</b>						
<b>Total Miles:</b>	<b>24.2</b>			<b>4.8</b>	<b>9.1</b>						

Notes:

1. Added Other Lanes includes truck climb lanes, auxiliary lanes, and mixed flow lanes.
2. Table assumes that the White Rock Road Connector is built.
3. Improvements include 3 new interchanges: Rancho Cordova Parkway, Empire Ranch, and Silva Valley.
4. If the forecasted AM peak hour volumes for Westbound Bass Lake On-Ramp reach 1,099 vehicles as predicted by the SACMET model, then the on-ramp merge lane may need to be extended from the existing 300 foot length to 1,500 feet. The operation of this on-ramp should be monitored to determine when this extension might be needed.
5. Forecasts exclude Shingle Springs Rancheria Casino.



### Exhibit 19. Improvements to US 50 Eastbound – SACMET Forecasts

US 50 Eastbound No. Subsection Description	Length (ft)	Existing		Added		Total		UnMitigated		Mitigated	
		HOV Lanes	Mixed Lanes	HOV Lanes	Other Lanes	HOV Lanes	Mixed Lanes	HOV V/C	Mixed V/C	HOV V/C	Mixed V/C
1US 50 Mainline EB In to Mather Off	5,810		4		1		5		1.14		0.91
2Mather Off to Mather SB Loop On	1,320		4				4		0.89		0.89
3Mather SB Loop On to Merge	300		5				5		0.72		0.72
4Merge to Mather NB On	800		4		1		5		0.91		0.72
5Mather NB On to Merge	320		5				5		0.74		0.74
6Merge to Exit Lane	3,480		4		1		5		0.93		0.74
7Exit Lane to Zinfandel Off	1,425		5				5		0.74		0.74
8Zinfandel Off to Zin SB Loop On	1,056		4				4		0.70		0.70
9Zin SB Loop On to Zin NB On	1,056		4				4		0.73		0.73
10Zin NB On to Merge	320		5				5		0.66		0.66
11Merge to Sunrise Off	5,230		4				4		0.83		0.83
12Sunrise Off to HOV Start	1,584		3				3		0.73		0.73
13HOV Start to Sunrise On	2,640	1	3			1	3	0.34	0.64	0.34	0.64
14Sunrise On to Merge	1,056	1	4			1	4	0.42	0.59	0.42	0.59
15Merge to Rancho C.Pkwy Off	6,816	1	3			1	3	0.42	0.79	0.42	0.79
16Rancho C. Off to Rancho C. On	1,200	1	3			1	3	0.41	0.77	0.41	0.77
17Rancho C. On to Start Exit Lane	4,656	1	3		1	1	4	0.49	0.92	0.49	0.69
18Exit Lane to Hazel Off	1,000	1	4			1	4	0.49	0.69	0.49	0.69
19Hazel Off to Hazel On	2,112	1	3			1	3	0.35	0.65	0.35	0.65
20Hazel On to Aerojet Off	528	1	4			1	4	0.41	0.57	0.41	0.57
21Aerojet Off to Lane Drop	740	1	4			1	4	0.40	0.57	0.40	0.57
22Lane Drop to Folsom Off	2,640	1	3			1	3	0.40	0.75	0.40	0.75
23Folsom Off to Folsom On	1,056	1	2			1	2	0.30	0.84	0.30	0.84
24Folsom On to Merge	156	1	3			1	3	0.30	0.57	0.30	0.57
25Merge to Prairie City Off	10,296	1	2			1	2	0.30	0.86	0.30	0.86
26Prairie Off to Prairie NB Loop On	2,320	1	2			1	2	0.28	0.79	0.28	0.79
27Prairie NB Loop On to Merge	211	1	3			1	3	0.28	0.53	0.28	0.53
28Merge to Prairie City SB On	1,110	1	2			1	2	0.28	0.80	0.28	0.80
29Prairie City SB On to Merge	1,320	1	3			1	3	0.30	0.57	0.30	0.57
30Merge to Start Exit Lane	5,280	1	2			1	2	0.30	0.85	0.30	0.85
31Exit Lane to Bidwell Off	1,584	1	3			1	3	0.30	0.57	0.30	0.57
32Bidwell Off to Bidwell SB Loop On	2,220	1	2			1	2	0.27	0.76	0.27	0.76
33Bidwell SB Loop On to Scott On	900	1	3			1	3	0.34	0.64	0.34	0.64
34Scott NB On to Merge	1,330	1	4			1	4	0.35	0.49	0.35	0.49
35Merge to Empire Off	1,794	1	3			1	3	0.35	0.66	0.35	0.66
36Empire Off to Crest of Hill	1,216	1	3			1	3	0.28	0.52	0.28	0.52
37Crest of Hill to Empire On	758	1	3			1	3	0.28	0.52	0.28	0.52
<b>Subtotal - Sacramento Co. - Miles</b>	<b>14.7</b>				- 0.9						
38Empire On to HOV End	3,152	1	2		1	1	3	0.33	0.95	0.33	0.63
39HOV End to Latrobe SB Off	1,584		3		1	1	3		0.68	0.33	0.62
40Latrobe SB Off to El Dorado NB Off	1,400		3		1	1	3		0.63	0.30	0.57
41El Dorado NB Off to El Dorado On	1,640		2		1	1	2		0.93	0.30	0.84
42El Dorado On to Silva Off	4,380		2		1	1	3		1.14	0.37	0.69
43Silva Off to Silva SB On	1,800		2		1	1	2		1.01	0.32	0.91
44Silva SB On to Silva NB On	590		2		1	1	2		1.03	0.33	0.93

US 50 Eastbound No. Subsection Description	Length (ft)	Existing		Added		Total		UnMitigated		Mitigated	
		HOV Lanes	Mixed Lanes	HOV Lanes	Other Lanes	HOV Lanes	Mixed Lanes	HOV V/C	Mixed V/C	HOV V/C	Mixed V/C
45Silva NB On to Bass Off	5,740		3				3		0.72		0.72
46Bass Lake Off to End Truck Lane	1,320		3				3		0.65		0.65
47End Truck Lane to Bass Lake On	792		2		1		3		0.98		0.65
48Bass Lake On to Merge	300		3				3		0.68		0.68
49Merge to Cambridge Off	6,200		2		1		3		1.02		0.68
50Cambridge Off to Cambridge On	1,375		2				2		0.91		0.91
51Cambridge On to Merge	300		3				3		0.66		0.66
52Merge to Cameron Park Off	7,230		2		1		3		0.98		0.66
53Cameron Off to Cameron On	2,480		2				2		0.78		0.78
54Cameron On to Grade Change	5,280		2		1		3		0.94		0.63
55Grade Change to Ponderosa Off	844		2		1		3		0.94		0.63
56Ponderosa Off to Ponderosa On	1,270		2				2		0.65		0.65
57Ponderosa On to Mainline Out	2,640		2				2		0.73		0.73
<b>Subtotal - El Dorado Co. - Miles</b>	<b>9.5</b>			<b>2.2</b>	<b>5.3</b>						
<b>Total Miles:</b>	<b>24.2</b>			<b>2.2</b>	<b>6.2</b>						

Notes:

1. Added Other Lanes includes truck climb lanes, auxiliary lanes, and mixed flow lanes.
2. Table assumes that the White Rock Road Connector is built.
3. Improvements include 3 new interchanges: Rancho Cordova Parkway, Empire Ranch, and Silva Valley.
4. Forecasts exclude Shingle Springs Rancheria Casino.

**Exhibit 20. Improvements to US 50 Westbound – El Dorado General Plan  
Forecasts**

US 50 Westbound No.Subsection	Length (ft)	Existing		Added		Total		UnMitigated		Mitigated	
		HOV Mixed Lanes	HOV Mixed Lanes	HOV Other Lanes	HOV Other Lanes	HOV Mixed Lanes	HOV Mixed Lanes	HOV Mixed V/C	HOV Mixed V/C	HOV Mixed V/C	HOV Mixed V/C
1US 50 Mainline WB In to Ponderosa Off	6,920	2				-	2	0.79		0.79	
2Ponderosa Off to Shingle Sp NB Loop On	1,320	2				-	2	0.64		0.64	
3Shingle Sp NB Loop On to Merge	300	3				-	3	0.50		0.50	
4Merge to Ponderosa On	740	2				-	2	0.75		0.75	
5Ponderosa SB On to Merge	300	3				-	3	0.55		0.55	
6Merge to Cameron Off	6,810	2				-	2	0.82		0.82	
7Cameron Off to Cameron NB Loop On	1,210	2				-	2	0.66		0.66	
8Cameron NB Loop On to Merge	300	3				-	3	0.53		0.53	
9Merge to Cameron SB On	740	2				-	2	0.80		0.80	
10Cameron SB On to Merge	320	3				-	3	0.62		0.62	
11Merge to Cambridge Off	5,700	2	1			1	2	0.93	0.30	0.84	
12Cambridge Off to On	1,160	2	1			1	2	0.91	0.29	0.82	
13Cambridge On to Lane Drop	2,320	3	1			1	3	0.73	0.35	0.66	
14Lane Drop to Bass Off	5,280	2	1	1		1	3	1.09	0.35	0.66	
15Bass Off to On	2,380	2	1			1	2	1.04	0.33	0.93	
16Bass On to Merge	300	3	1			1	3	0.82	0.39	0.74	
17Merge to Silva Off	4,760	2	1	1		1	3	1.23	0.39	0.74	
18Silva Off to Silva NB Loop On	1,820	2	1			1	2	0.97	0.31	0.87	
19Silva NB Loop On to Silva SB On	1,190	2	1	1		1	3	1.10	0.35	0.66	
20Silva SB On to El Dorado Off	2,100	2	1	1		1	3	1.26	0.40	0.76	
21El Dorado Off HOV Start	1,584	2	1	1		1	3	1.04	0.33	0.63	
22HOV Start to El Dorado On	1,056	1	2		1	1	3	0.33	0.94		0.63
23El Dorado On to Empire Off	4,342	1	2		1	1	3	0.41	1.15		0.77
<b>Subtotal El Dorado - Miles</b>	<b>10.0</b>			<b>5.4</b>	<b>3.8</b>						

Notes:

1. Added Other Lanes includes truck climb lanes, auxiliary lanes, and mixed flow lanes.
2. Table assumes that the White Rock Road Connector is built.
3. Improvements include 3 new interchanges: Rancho Cordova Parkway, Empire Ranch, and Silva Valley.
4. Forecasts exclude Shingle Springs Rancheria Casino.

**Exhibit 21. Improvements to US 50 Eastbound – El Dorado General Plan  
Forecasts**

US 50 Eastbound No. Subsection Description	Length (ft)	Existing		Added		Total		UnMitigated		Mitigated	
		HOV Mixed		HOV Other		HOV Mixed		HOV Mixed		HOV Mixed	
		Lanes	Lanes	Lanes	Lanes	Lanes	Lanes	V/C	V/C	V/C	V/C
38 Empire On to HOV End	3,152	1	2		1	1	3	0.41	1.16		0.77
39 HOV End to Latrobe SB Off	1,584		3	1		1	3		0.86	0.41	0.77
40 Latrobe SB Off to El Dorado NB Off	1,400		3	1		1	3		0.77	0.37	0.69
41 El Dorado NB Off to El Dorado On	1,640		2	1	1	1	3		1.01	0.32	0.61
42 El Dorado On to Silva Off	4,380		2	1	1	1	3		1.23	0.39	0.74
43 Silva Off to Silva SB On	1,800		2	1	1	1	3		0.97	0.31	0.58
44 Silva SB On to Silva NB On	590		2	1	1	1	3		1.11	0.35	0.67
45 Silva NB On to Bass Off	5,740		3	1		1	3		0.86	0.41	0.77
46 Bass Lake Off to End Truck Lane	1,320		3	1		1	3		0.73	0.35	0.66
47 End Truck Lane to Bass Lake On	792		2	1	1	1	3		1.10	0.35	0.66
48 Bass Lake On to Merge	300		3	1		1	3		0.79	0.38	0.71
49 Merge to Cambridge Off	6,200		2	1	1	1	3		1.18	0.38	0.71
50 Cambridge Off to Cambridge On	1,375		2	1		1	2		1.00	0.32	0.90
51 Cambridge On to Merge	300		3			-	3		0.68		0.68
52 Merge to Cameron Park Off	7,230		2		1	-	3		1.03		0.68
53 Cameron Off to Cameron On	2,480		2			-	2		0.72		0.72
54 Cameron On to Grade Change	5,280		2			-	2		0.81		0.81
55 Grade Change to Ponderosa Off	844		2			-	2		0.81		0.81
56 Ponderosa Off to Ponderosa On	1,270		2			-	2		0.64		0.64
57 Ponderosa On to Mainline Out	2,640		2			-	2		0.78		0.78
<b>Subtotal - El Dorado - Miles</b>	<b>9.5</b>			<b>5.1</b>	<b>4.9</b>						

Notes:

1. Added Other Lanes includes truck climb lanes, auxiliary lanes, and mixed flow lanes.
2. Table assumes that the White Rock Road Connector is built.
3. Improvements include 3 new interchanges: Rancho Cordova Parkway, Empire Ranch, and Silva Valley.
4. Forecasts exclude Shingle Springs Rancheria Casino.

**Exhibit 22. Improvements to US 50 Westbound – Combined Forecasts**

US 50 Westbound No. Subsection Description	Length (ft)	Existing		Added		Total		UnMitigated		Mitigated	
		HOV Lanes	Mixed Lanes	HOV Lanes	Other Lanes	HOV Lanes	Mixed Lanes	HOV V/C	Mixed V/C	HOV V/C	Mixed V/C
1US 50 Mainline WB to Ponderosa	6,920		2			-	2		0.79		0.79
2Ponderosa Off to Shingle NB Lp On	1,320		2			-	2		0.64		0.64
3Shingle Sp NB Loop On to Merge	300		3			-	3		0.50		0.50
4Merge to Ponderosa On	740		2			-	2		0.75		0.75
5Ponderosa SB On to Merge	300		3			-	3		0.55		0.55
6Merge to Cameron Off	6,810		2			-	2		0.82		0.82
7Cameron Off to Cameron NB Lp On	1,210		2			-	2		0.66		0.66
8Cameron NB Loop On to Merge	300		3			-	3		0.53		0.53
9Merge to Cameron SB On	740		2			-	2		0.80		0.80
10Cameron SB On to Merge	320		3			-	3		0.62		0.62
11Merge to Cambridge Off	5,700		2	1		1	2		0.93	0.30	0.84
12Cambridge Off to On	1,160		2	1		1	2		0.91	0.29	0.82
13Cambridge On to Lane Drop	2,320		3	1		1	3		0.73	0.35	0.66
14Lane Drop to Bass Off	5,280		2	1	1	1	3		1.09	0.35	0.66
15Bass Off to On	2,380		2	1		1	2		1.04	0.33	0.93
16Bass On to Merge	300		3	1		1	3		0.82	0.39	0.74
17Merge to Silva Off	4,760		2	1	1	1	3		1.23	0.39	0.74
18Silva Off to Silva NB Loop On	1,820		2	1		1	2		0.97	0.31	0.87
19Silva NB Loop On to Silva SB On	1,190		2	1	1	1	3		1.10	0.35	0.66
20Silva SB On to El Dorado Off	2,100		2	1	2	1	4		1.26	0.40	0.76
21El Dorado Off HOV Start	1,584		2	1	1	1	3		1.04	0.33	0.63
22HOV Start to El Dorado On	1,056	1	2		1	1	3	0.33	0.94	0.33	0.63
23El Dorado On to Empire Off	4,342	1	2		1	1	3	0.41	1.15	0.41	0.77
<b>Subtotal El Dorado - Miles</b>	<b>10.0</b>			<b>5.42</b>	<b>3.8</b>						
24Empire Off to Crest of Hill	2,152	1	2			1	2	0.29	0.82	0.29	0.82
25Crest of Hill to Empire On	176	1	2			1	2	0.29	0.82	0.29	0.82
26Empire On to Exit Lane	2,724	1	2		1	1	3	0.35	0.99	0.35	0.66
27Exit Lane to Bidwell Off	1,320	1	3			1	3	0.35	0.66	0.35	0.66
28Bidwell Off to Scott NB Loop On	2,060	1	2			1	2	0.31	0.87	0.31	0.87
29Scott NB Loop On to Merge	320	1	3			1	3	0.31	0.59	0.31	0.59
30Merge to Bidwell SB On	900	1	2			1	2	0.31	0.89	0.31	0.89
31Bidwell SB On to Merge	1,425	1	3			1	3	0.41	0.77	0.41	0.77
32Merge to Prairie City Off	7,075	1	2		1	1	3	0.41	1.16	0.41	0.77
33Prairie Off to Prairie NB Loop On	1,850	1	2		1	1	3	0.33	0.94	0.33	0.63
34Prairie City NB Loop On to Merge	264	1	3			1	3	0.33	0.63	0.33	0.63
35Merge to Prairie City SB On	1,160	1	2		1	1	3	0.33	0.94	0.33	0.63
36Prairie City SB On to Merge	1,375	1	3			1	3	0.38	0.71	0.38	0.71
37Merge to Folsom Off	8,610	1	2		1	1	3	0.38	1.06	0.38	0.71
38Folsom Off to On	1,795	1	2		1	1	3	0.36	1.01	0.36	0.67
39Folsom On to Hazel Off	3,170	1	3			1	3	0.45	0.85	0.45	0.85
40Hazel Off to Hazel NB Loop On	1,795	1	2		1	1	3	0.41	1.15	0.41	0.76
41Hazel NB Loop On to Merge	300	1	3			1	3	0.46	0.86	0.46	0.86
42Merge to Hazel SB On	950	1	2		1	1	3	0.46	1.30	0.46	0.86
43Hazel SB On to Rancho C. Off	6,446	1	3		1	1	4	0.59	1.11	0.59	0.84

US 50 Westbound No. Subsection Description	Length (ft)	Existing		Added		Total		UnMitigated		Mitigated	
		HOV Mixed Lanes	Mixed Lanes	HOV Lanes	Other Lanes	HOV Mixed Lanes	Mixed Lanes	HOV Mixed V/C	Mixed V/C	HOV Mixed V/C	Mixed V/C
44 Rancho C. Off to Rancho C. On	1,200	1	3		1	1	4	0.53	0.99	0.53	0.74
45 Rancho Cordova On to HOV End	4,024	1	3		1	1	4	0.53	1.01	0.53	0.75
46 HOV End to Sunrise Off	2,480		4	1		1	4		0.85	0.54	0.77
47 Sunrise Off to On	3,855		3	1		1	3		1.00	0.48	0.90
48 Sunrise On to Zinfandel Off	5,330		4	1		1	4		1.02	0.65	0.92
49 Zinfandel Off to Zin NB Loop On	1,110		4	1		1	4		0.84	0.54	0.76
50 Zin NB Loop On to Zinfandel SB On	740		4	1		1	4		1.00	0.64	0.90
51 Zinfandel SB On to Merge	1,850		5	1		1	5		0.86	0.69	0.78
52 Merge to Mather Off	3,800		4	1	1	1	5		1.08	0.69	0.78
53 Mather Off to Mather NB Loop On	1,220		4	1		1	4		0.97	0.62	0.87
54 Mather NB Lp On to Mather SB On	1,110		5				5		0.80		0.80
55 Mather SB On to Merge	300		6				6		0.72		0.72
56 Merge to US 50 WB Mainline Out	1,900		5				5		0.86		0.86
<b>Subtotal Sacramento - Miles</b>	<b>14.2</b>			<b>3.9</b>	<b>7.8</b>						
<b>Total Miles:</b>	<b>24.2</b>			<b>9.3</b>	<b>11.7</b>						

Notes:

1. Added Other Lanes includes truck climb lanes, auxiliary lanes, and mixed flow lanes.
2. Table assumes that the White Rock Road Connector is built.
3. Improvements include 3 new interchanges: Rancho Cordova Parkway, Empire Ranch, and Silva Valley.
4. Forecasts exclude Shingle Springs Rancheria Casino.

**Exhibit 23. Improvements to US 50 Eastbound – Combined Forecasts**

US 50 Eastbound No. Subsection Description	Length (ft)	Existing		Added		Total		UnMitigated		Mitigated	
		HOV Mixed Lanes	Lanes	HOV Other Lanes	Lanes	HOV Mixed Lanes	Lanes	HOV Mixed V/C	V/C	HOV Mixed V/C	V/C
1US 50 Mainline EB In to Mather Off	5,810		4		1		5		1.14		0.91
2Mather Off to Mather SB Loop On	1,320		4				4		0.89		0.89
3Mather SB Loop On to Merge	300		5				5		0.72		0.72
4Merge to Mather NB On	800		4		1		5		0.91		0.72
5Mather NB On to Merge	320		5				5		0.74		0.74
6Merge to Exit Lane	3,480		4		1		5		0.93		0.74
7Exit Lane to Zinfandel Off	1,425		5				5		0.74		0.74
8Zinfandel Off to Zin SB Loop On	1,056		4				4		0.70		0.70
9Zin SB Loop On to Zin NB On	1,056		4				4		0.73		0.73
10Zin NB On to Merge	320		5				5		0.66		0.66
11Merge to Sunrise Off	5,230		4				4		0.83		0.83
12Sunrise Off to HOV Start	1,584		3				3		0.73		0.73
13HOV Start to Sunrise On	2,640	1	3			1	3	0.34	0.64	0.34	0.64
14Sunrise On to Merge	1,056	1	4			1	4	0.42	0.59	0.42	0.59
15Merge to Rancho C.Pkwy Off	6,816	1	3			1	3	0.42	0.79	0.42	0.79
16Rancho C. Off to Rancho C. On	1,200	1	3			1	3	0.41	0.77	0.41	0.77
17Rancho C. On to Start Exit Lane	4,656	1	3		1	1	4	0.49	0.92	0.49	0.69
18Exit Lane to Hazel Off	1,000	1	4			1	4	0.49	0.69	0.49	0.69
19Hazel Off to Hazel On	2,112	1	3			1	3	0.35	0.65	0.35	0.65
20Hazel On to Aerojet Off	528	1	4			1	4	0.41	0.57	0.41	0.57
21Aerojet Off to Lane Drop	740	1	4			1	4	0.40	0.57	0.40	0.57
22Lane Drop to Folsom Off	2,640	1	3			1	3	0.40	0.75	0.40	0.75
23Folsom Off to Folsom On	1,056	1	2			1	2	0.30	0.84	0.30	0.84
24Folsom On to Merge	156	1	3			1	3	0.30	0.57	0.30	0.57
25Merge to Prairie City Off	10,296	1	2			1	2	0.30	0.86	0.30	0.86
26Prairie Off to Prairie NB Loop On	2,320	1	2			1	2	0.28	0.79	0.28	0.79
27Prairie NB Loop On to Merge	211	1	3			1	3	0.28	0.53	0.28	0.53
28Merge to Prairie City SB On	1,110	1	2			1	2	0.28	0.80	0.28	0.80
29Prairie City SB On to Merge	1,320	1	3			1	3	0.30	0.57	0.30	0.57
30Merge to Start Exit Lane	5,280	1	2			1	2	0.30	0.85	0.30	0.85
31Exit Lane to Bidwell Off	1,584	1	3			1	3	0.30	0.57	0.30	0.57
32Bidwell Off to Bidwell SB Loop On	2,220	1	2			1	2	0.27	0.76	0.27	0.76
33Bidwell SB Loop On to Scott On	900	1	3			1	3	0.34	0.64	0.34	0.64
34Scott NB On to Merge	1,330	1	4			1	4	0.35	0.49	0.35	0.49
35Merge to Empire Off	1,794	1	3			1	3	0.35	0.66	0.35	0.66
36Empire Off to Crest of Hill	1,216	1	3			1	3	0.28	0.52	0.28	0.52
37Crest of Hill to Empire On	758	1	3			1	3	0.28	0.52	0.28	0.52
<b>Subtotal - Sacramento - Miles</b>	<b>14.7</b>				<b>- 0.9</b>						
38Empire On to HOV End	3,152	1	2		1	1	3	0.41	1.16	0.41	0.77
39HOV End to Latrobe SB Off	1,584		3		1	1	3		0.86	0.41	0.77
40Latrobe SB Off to El Dorado NB Off	1,400		3		1	1	3		0.77	0.37	0.69
41El Dorado NB Off to El Dorado On	1,640		2		1	1	3		1.01	0.32	0.61
42El Dorado On to Silva Off	4,380		2		1	2	4		1.23	0.39	0.74
43Silva Off to Silva SB On	1,800		2		1	1	3		1.01	0.32	0.61
44Silva SB On to Silva NB On	590		2		1	1	3		1.11	0.35	0.67

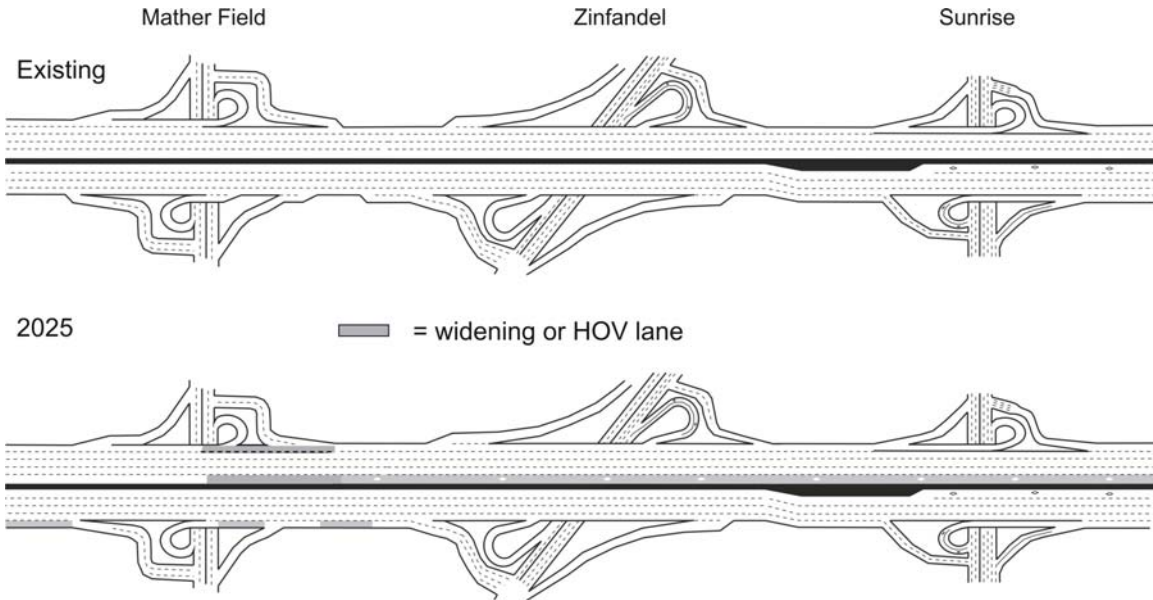
US 50 Eastbound No. Subsection Description	Length (ft)	Existing		Added		Total		UnMitigated		Mitigated	
		HOV Mixed Lanes	Mixed Lanes	HOV Lanes	Other Lanes	HOV Mixed Lanes	Mixed Lanes	HOV Mixed V/C	Mixed V/C	HOV Mixed V/C	Mixed V/C
45Silva NB On to Bass Off	5,740	3		1		1	3	0.86		0.41	0.77
46Bass Lake Off to End Truck Lane	1,320	3		1		1	3	0.73		0.35	0.66
47End Truck Lane to Bass Lake On	792	2		1	1	1	3	1.10		0.35	0.66
48Bass Lake On to Merge	300	3		1		1	3	0.79		0.38	0.71
49Merge to Cambridge Off	6,200	2		1	1	1	3	1.18		0.38	0.71
50Cambridge Off to Cambridge On	1,375	2		1		1	2	1.00		0.32	0.90
51Cambridge On to Merge	300	3				0	3	0.68			0.68
52Merge to Cameron Park Off	7,230	2			1	0	3	1.03			0.68
53Cameron Off to Cameron On	2,480	2				-	2	0.78			0.78
54Cameron On to Grade Change	5,280	2			1	-	3	0.94			0.63
55Grade Change to Ponderosa Off	844	2			1	-	3	0.94			0.63
56Ponderosa Off to Ponderosa On	1,270	2				-	2	0.65			0.65
57Ponderosa On to Mainline Out	2,640	2				-	2	0.78			0.78
<b>Subtotal - El Dorado - Miles</b>	<b>9.5</b>			<b>5.1</b>	<b>6.0</b>						
<b>Total Miles:</b>	<b>24.2</b>			<b>5.1</b>	<b>6.9</b>						

Notes:

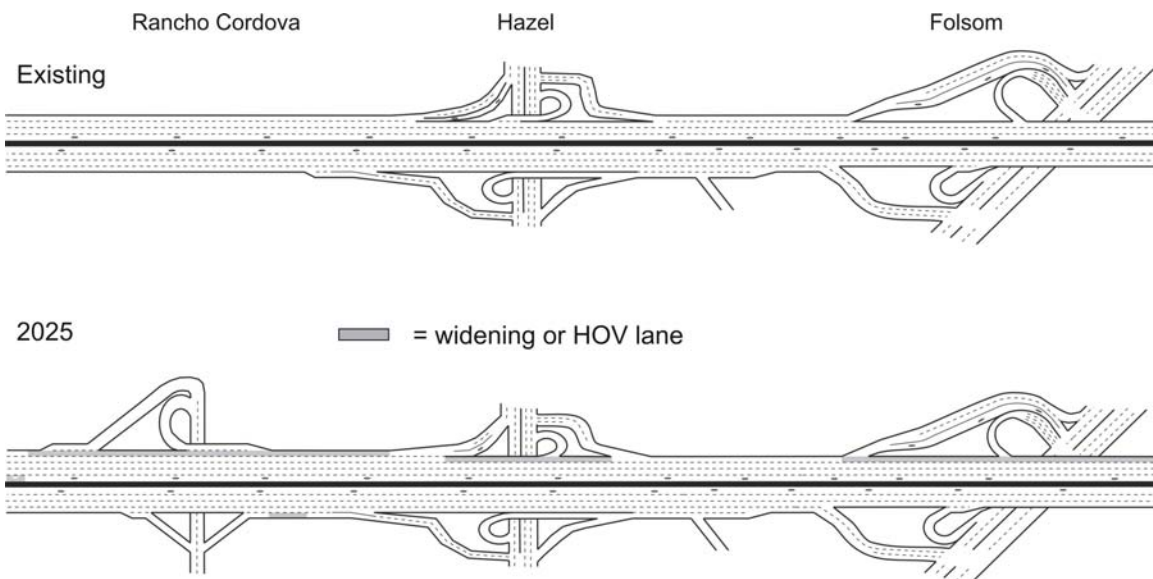
1. Added Other Lanes includes truck climb lanes, auxiliary lanes, and mixed flow lanes.
2. Table assumes that the White Rock Road Connector is built.
3. Improvements include 3 new interchanges: Rancho Cordova Parkway, Empire Ranch, and Silva Valley.
4. Forecasts exclude Shingle Springs Rancheria Casino.



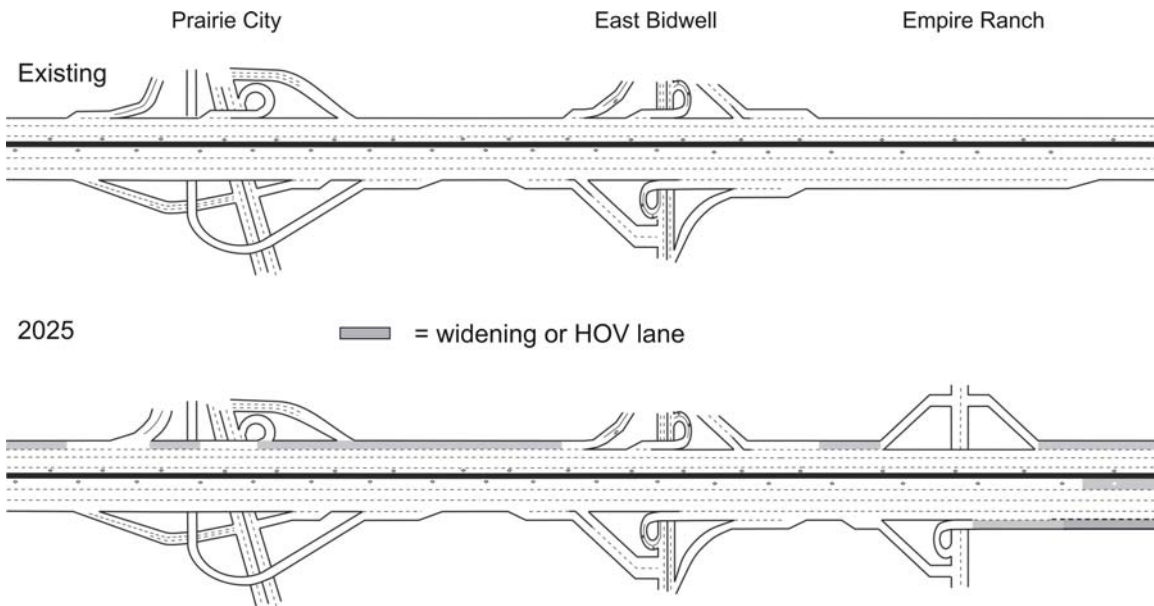
**Exhibit 24. Year 2025 Improvements – Mather to Sunrise**



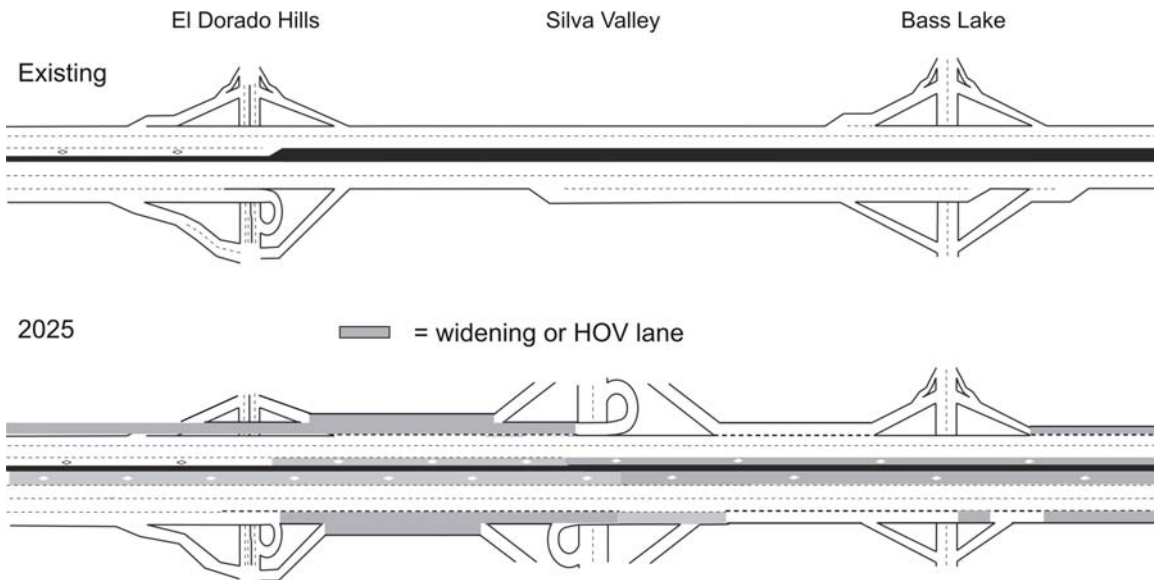
**Exhibit 25. Year 2025 Improvements – Rancho Cordova Pkwy to Folsom Blvd.**



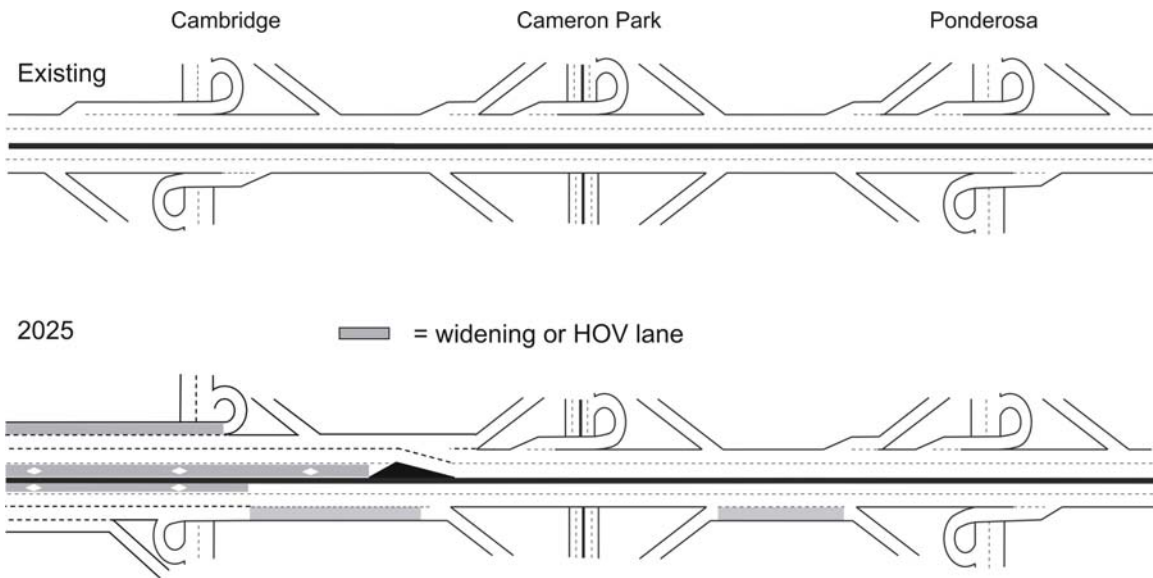
### Exhibit 26. Year 2025 Improvements – Prairie City to Empire Ranch



### Exhibit 27. Year 2025 Improvements – El Dorado Hills to Bass Lake



## Exhibit 28. Year 2025 Improvements – Cambridge to Ponderosa



## **5. Interim Freeway Improvements For 2015**

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This chapter presents the recommended interim improvements for the US 50 freeway for the year 2015 within El Dorado County. This chapter focuses on only the portion of the study corridor between the Sacramento/El Dorado county line and Ponderosa Road in El Dorado County.

The 2015 AM and PM peak hour volumes for US 50 were forecasted by interpolating the 2003 counts and the 2004 General Plan model forecasts for 2025. These forecasts are shown in the exhibits 29 and 30.

The recommended interim improvements that will preserve a low level of service “E” (0.90 to 0.95 volume/capacity) on the freeway are shown in Exhibits 31 and 32 below.

For the westbound direction of US 50 it is recommended that the planned auxiliary lanes and HOV lanes for the Silva Valley and Empire Ranch interchanges be built. In addition a westbound auxiliary lane needs to be built between the Bass Lake on-ramp and the future Silva Valley off-ramp, by the year 2015.

For the eastbound direction of US 50 the planned auxiliary lanes and HOV lanes for the Silva Valley and Empire Ranch interchanges are needed by 2015. In addition, the existing eastbound truck climbing lane between Silva Valley and Bass Lake needs to be extended to the Cambridge off-ramp by the year 2015.

**Exhibit 29. US 50 Westbound Peak Hour Volume Forecasts**

	2003 Count			2003 Count			2015 Interpolated GP			2015 Interpolated GP			2025 General Plan			2025 General Plan			2027 SACMET			2027 SACMET		
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
US 50 Westbound																								
No. Subsection	On	Off	Main	On	Off	Main	On	Off	Main	On	Off	Main	On	Off	Main	On	Off	Main	On	Off	Main	On	Off	Main
1 US 50 Mainline WB In to Ponderosa Off	0	239	2237	0	289	1832	0	354	2660	0	532	2943	450	3012	735	3868	0	278	2772	0	351	2237		
2 Ponderosa Off to Shingle Sp NB Loop On	0	0	1998	0	0	1543	0	0	2306	0	0	2411	2562	3133	0	0	2494	0	0	1886				
3 Shingle Sp NB Loop On to Merge	929	0	2927	416	0	1959	694	0	3000	480	0	2891	498	3060	534	3667	372	0	2866	180	0	2066		
4 Merge to Ponderosa On	0	0	2927	0	0	1959	0	0	3000	0	0	2891	3060	3667	0	0	2866	0	0	2066				
5 Ponderosa SB On to Merge	599	0	3526	267	0	2226	544	0	3544	307	0	3198	498	3558	340	4007	239	0	3105	118	0	2184		
6 Merge to Cameron Off	0	651	3526	0	647	2226	0	466	3544	0	729	3198	311	3558	797	4007	0	678	3105	0	758	2184		
7 Cameron Off to Cameron NB Loop On	0	0	2875	0	0	1579	0	0	3078	0	0	2469	3247	3210	0	0	2427	0	0	1426				
8 Cameron NB Loop On to Merge	158	0	3033	199	0	1778	375	0	3453	483	0	2952	555	3802	719	3929	249	0	2676	305	0	1731		
9 Merge to Cameron SB On	0	0	3033	0	0	1778	0	0	3453	0	0	2952	3802	3929	0	0	2676	0	0	1731				
10 Cameron SB On to Merge	389	0	3422	231	0	2009	589	0	4042	383	0	3335	755	4557	509	4438	611	0	3287	332	0	2063		
11 Merge to Cambridge Off	0	406	3422	0	295	2009	0	232	4042	0	217	3335	87	4557	152	4438	0	423	3287	0	274	2063		
12 Cambridge Off to On	0	0	3016	0	0	1714	0	0	3810	0	0	3118	4470	4286	0	0	2864	0	0	1789				
13 Cambridge On to Lane Drop	403	0	3419	212	0	1926	666	0	4476	416	0	3534	886	5356	586	4872	400	0	3264	320	0	2109		
14 Lane Drop to Bass Off	0	65	3419	0	58	1926	0	183	4476	0	302	3534	282	5356	506	4872	0	195	3264	0	110	2109		
15 Bass Off to On	0	0	3354	0	0	1868	0	0	4293	0	0	3232	5074	4366	0	0	3069	0	0	1999				
16 Bass On to Merge	1098	0	4452	268	0	2136	1006	0	5299	487	0	3719	930	6004	670	5036	1099	0	4168	424	0	2423		
17 Merge to Silva Off	0	0	4452	0	479	2136	0	683	5299	0	1019	3719	1253	6004	1469	5036	0	332	4168	0	194	2423		
18 Silva Off to Silva NB Loop On	0	0	4452	0	0	1657	0	0	4616	0	0	2700	4751	3567	0	0	3836	0	0	2229				
19 Silva NB Loop On to Silva SB On	0	0	4452	0	0	1657	359	0	4975	211	0	2911	659	5410	386	3953	153	0	3989	286	0	2515		
20 Silva SB On to El Dorado Off	0	498	4452	0	479	1657	425	817	5400	168	810	3079	780	1083	6190	308	1086	4261	741	612	4730	447	572	2962
21 El Dorado Off HOV Start	0	0	3954	0	0	1178	0	0	4583	0	0	2269	5107	3175	0	405	4118	0	203	2390				
22 HOV Start to El Dorado On	0	0	3954	0	0	1178	0	0	4583	0	0	2269	5107	3175	0	0	3713	0	0	2187				
23 El Dorado On to Empire Off	1163	0	5117	1264	0	2442	1162	0	5745	1088	0	3357	1161	6268	941	4116	1049	763	4762	1370	1023	3557		
	<b>6976</b>	<b>6976</b>		<b>4689</b>	<b>4689</b>		<b>8480</b>	<b>8480</b>		<b>6966</b>	<b>6966</b>		<b>9734</b>	<b>9734</b>		<b>8861</b>	<b>8861</b>		<b>7685</b>	<b>7685</b>		<b>6019</b>	<b>6019</b>	

**Exhibit 30. US 50 Eastbound Peak Hour Volume Forecasts**

US 50 Eastbound No. Subsection Description	2003 Count			2003 Count			2015 Interpolated GP			2015 Interpolated GP			2025 General Plan			2025 General Plan			2027 SACMET			2027 SACMET		
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	On	Off	Main	On	Off	Main	On	Off	Main	On	Off	Main	On	Off	Main	On	Off	Main	On	Off	Main	On	Off	Main
38 Empire On to HOV End			3481			3566	0	0	3822	0	0	5062			4107			6309	762	0	3032	789	0	5022
39 HOV End to Latrobe SB Off	0	1143	3481	0	321	3566	0	794	3822	0	513	5062	503	4107		673	6309	0	1253	3032	0	375	5022	
40 Latrobe SB Off to El Dorado NB Off	0	283	2338	0	82	3245	0	402	3028	0	416	4549	502	3604		695	5636	0	313	1779	0	94	4647	
41 El Dorado NB Off to El Dorado On	0	0	2055	0	0	3163	0	0	2626	0	0	4133		3102		4941		0	0	1466	0	0	4553	
42 El Dorado On to Silva Off	313	0	2368	924	0	4087	699	336	3325	1005	683	5138	1021	616	4123	1073	1252	6014	399	81	1865	1051	635	5604
43 Silva Off to Silva SB On	0	0	2368	0	0	4087	0	0	2989	0	0	4455		3507			4762	0	0	1784	0	0	4969	
44 Silva SB On to Silva NB On	0	0	2368	0	0	4087	383	0	3372	374	0	4829	702	4209		685	5447	915	0	2699	101	0	5070	
45 Silva NB On to Bass Off	0	180	2368	0	459	4087	313	380	3685	461	698	5290	573	546	4782	846	897	6293	432	247	3131	204	492	5274
46 Bass Lake Off to End Truck Lane	0	0	2188	0	0	3628	0	0	3305	0	0	4592		4236			5396	0	0	2884	0	0	4782	
47 End Truck Lane to Bass Lake On	0	0	2188	0	0	3628	0	0	3305	0	0	4592		4236			5396	0	0	2884	0	0	4782	
48 Bass Lake On to Merge	53	0	2241	63	0	3691	249	0	3554	234	0	4826	412	4648		376	5772	129	0	3013	231	0	5013	
49 Merge to Cambridge Off	0	162	2241	0	398	3691	0	332	3554	0	667	4826		473	4648		892	5772	0	250	3013	0	540	5013
50 Cambridge Off to Cambridge On	0	0	2079	0	0	3293	0	0	3222	0	0	4159		4175			4880	0	0	2763	0	0	4473	
51 Cambridge On to Merge	364	0	2443	304	0	3597	243	0	3465	222	0	4381	143	4318		154	5034	386	0	3149	343	0	4816	
52 Merge to Cameron Park Off	0	390	2443	0	698	3597	0	821	3465	0	1148	4381		1180	4318		1523	5034	0	501	3149	0	999	4816
53 Cameron Off to Cameron On	0	0	2053	0	0	2899	0	0	2644	0	0	3233		3138			3511	0	0	2648	0	0	3817	
54 Cameron On to Grade Change	506	0	2559	761	0	3660	660	0	3304	594	0	3827	788	3926		454	3965	666	0	3314	783	0	4600	
55 Grade Change to Ponderosa Off	0	695	2559	0	1035	3660	0	758	3304	0	1057	3827		811	3926		1075	3965	0	946	3314	0	1408	4600
56 Ponderosa Off to Ponderosa On	0	0	1864	0	0	2625	0	0	2546	0	0	2770		3115			2890	0	0	2368	0	0	3192	
57 Ponderosa On to Mainline Out	202	0	2066	253	0	2878	469	0	3015	464	0	3234	692	3807		640	3530	307	0	2675	377	0	3569	
<b>Subtotal</b>	<b>4919</b>	<b>4919</b>		<b>5871</b>	<b>5871</b>		<b>6838</b>	<b>6838</b>		<b>8416</b>	<b>8416</b>		<b>8438</b>	<b>8438</b>		<b>10537</b>	<b>10537</b>		<b>6266</b>	<b>6266</b>		<b>8112</b>	<b>8112</b>	

### Exhibit 31. Improvements Needed by 2015 – Westbound US 50

US 50 Westbound No. Subsection	Length (ft)	Existing		Added		Total		2015 UnMitigated		2015 Mitigated	
		HOV Lanes	Mixed Lanes	HOV Lanes	Other Lanes	HOV Lanes	Mixed Lanes	HOV V/C	Mixed V/C	HOV V/C	Mixed V/C
1 US 50 Mainline WB In to Ponderosa Off	6,920	2				-	2		0.60		0.60
2 Ponderosa Off to Shingle Sp NB Loop On	1,320	2				-	2		0.49		0.49
3 Shingle Sp NB Loop On to Merge	300	3				-	3		0.41		0.41
4 Merge to Ponderosa On	740	2				-	2		0.61		0.61
5 Ponderosa SB On to Merge	300	3				-	3		0.48		0.48
6 Merge to Cameron Off	6,810	2				-	2		0.72		0.72
7 Cameron Off to Cameron NB Loop On	1,210	2				-	2		0.63		0.63
8 Cameron NB Loop On to Merge	300	3				-	3		0.47		0.47
9 Merge to Cameron SB On	740	2				-	2		0.70		0.70
10 Cameron SB On to Merge	320	3				-	3		0.55		0.55
11 Merge to Cambridge Off	5,700	2				0	2		0.82		0.82
12 Cambridge Off to On	1,160	2				0	2		0.78		0.78
13 Cambridge On to Lane Drop	2,320	3				0	3		0.61		0.61
14 Lane Drop to Bass Off	5,280	2				0	2		0.91		0.91
15 Bass Off to On	2,380	2				0	2		0.88		0.88
16 Bass On to Merge	300	3				0	3		0.72		0.72
17 Merge to Silva Off	4,760	2			1	0	3		1.08		0.72
18 Silva Off to Silva NB Loop On	1,820	2		1		1	2		0.94	0.30	0.85
19 Silva NB Loop On to Silva SB On	1,190	2		1	1	1	3		1.02	0.32	0.61
20 Silva SB On to El Dorado Off	2,100	2		1	1	1	3		1.10	0.35	0.66
21 El Dorado Off HOV Start	1,584	2		1	1	1	3		0.94	0.30	0.56
22 HOV Start to El Dorado On	1,056	1	2		1	1	3	0.30	0.84	0.30	0.56
23 El Dorado On to Empire Off	4,342	1	2		1	1	3	0.37	1.06	0.37	0.71
<b>Subtotal El Dorado - Miles</b>	<b>10.0</b>			<b>1.3</b>	<b>2.8</b>						

Notes:

1. Added Other Lanes includes truck climb lanes and auxiliary lanes.

### Exhibit 32. Improvements Needed by 2015 – Eastbound US 50

US 50 Eastbound No. Subsection Description	Length (ft)	Existing		Added		Total		2015 UnMitigated		2015 Mitigated	
		HOV Lanes	Mixed Lanes	HOV Lanes	Other Lanes	HOV Lanes	Mixed Lanes	HOV V/C	Mixed V/C	HOV V/C	Mixed V/C
38 Empire On to HOV End	3,152	1	2		1	1	3	0.33	0.93	0.33	0.62
39 HOV End to Latrobe SB Off	1,584		3	1		1	3		0.69	0.33	0.62
40 Latrobe SB Off to El Dorado NB Off	1,400		3	1		1	3		0.62	0.30	0.56
41 El Dorado NB Off to El Dorado On	1,640	2		1	1	1	3		0.84	0.27	0.51
42 El Dorado On to Silva Off	4,380	2		1	1	1	3		1.05	0.33	0.63
43 Silva Off to Silva SB On	1,800	2		1	1	1	3		0.91	0.29	0.55
44 Silva SB On to Silva NB On	590	2		1	1	1	3		0.99	0.31	0.59
45 Silva NB On to Bass Off	5,740	3				0	3		0.72		0.72
46 Bass Lake Off to End Truck Lane	1,320	3				0	3		0.62		0.62
47 End Truck Lane to Bass Lake On	792	2			1	0	3		0.94		0.62
48 Bass Lake On to Merge	300	3				0	3		0.66		0.66
49 Merge to Cambridge Off	6,200	2			1	0	3		0.98		0.66
50 Cambridge Off to Cambridge On	1,375	2				0	2		0.85		0.85
51 Cambridge On to Merge	300	3				-	3		0.60		0.60
52 Merge to Cameron Park Off	7,230	2				-	2		0.89		0.89
53 Cameron Off to Cameron On	2,480	2				-	2		0.66		0.66
54 Cameron On to Grade Change	5,280	2				-	2		0.78		0.78
55 Grade Change to Ponderosa Off	844	2				-	2		0.78		0.78
56 Ponderosa Off to Ponderosa On	1,270	2				-	2		0.57		0.57
57 Ponderosa On to Mainline Out	2,640	2				-	2		0.66		0.66
<b>Subtotal - El Dorado - Miles</b>	<b>9.5</b>			<b>2.2</b>	<b>3.5</b>						

Notes:

1. Added Other Lanes includes truck climb lanes and auxiliary lanes.