

# District 03 Mobility Performance Report

2021 Fourth Quarter

**DEPARTMENT OF TRANSPORTATION**

January 21, 2022  
: Office of Freeway Operations

2021 Fourth Quarter

## **EXECUTIVE SUMMARY**

### **Overview**

Caltrans District 3 is comprised of eleven counties located in Northern California. Most of the congestion and delay on the state highway system takes place in the urbanized areas of Sacramento, Yolo and Placer counties.

The Mobility Performance Report (MPR) quarterly analysis compares information from this quarter with information from the previous quarter and the prior year. The following performance measures were used to quantify freeway congestion in District 3 as well as to compare the different quarters:

- Bottleneck Locations
- Vehicle Miles of Travel (VMT)
- Vehicle Hours of Delay (VHD)
- Lost Lane Miles (equivalent lost productivity)
- Detector Health

This information is based on data collected by automated vehicle detector stations deployed on urban area freeways from the Caltrans Performance Measurement System (PeMS) every day of the quarter, twenty-four hours a day, where congestion is regularly experienced. The MPR presents congestion information for two speed thresholds: delay from vehicles traveling below 35 miles per hour (mph), and delay from vehicles traveling below 60 mph. The delay at the 35-mph threshold represents severe congestion while delay at 60 mph represents all congestion, both light and heavy. These thresholds are set by Caltrans and are based upon traffic engineering experience and District 3 Office of Freeway Operations input.

## FINDINGS

In the Fourth quarter of 2021, there is a decrease in delay due to the impact of COVID 19 variants. The total delay on the freeways in District 3 equaled 0.63 million vehicle hours of delay (VHD) below the 35-mph speed threshold and 2.57 million VHD below 60-mph threshold. The average delay experienced on weekdays in this quarter was approximately 8,200 of VHD below 35-mph, and 35,000 of VHD below 60-mph.

Vehicle Miles of Travel (VMT) decreased by 1.9% with a total of 2.91 billion miles when compared to the previous quarter (2.96 billion miles). The VHD below the 60-mph speed threshold decreased by 5.7% during the same quarter. See graphs on page 4 for details.

### Top Ten Bottlenecks for Quarter 4

County	Fwy	Name	Type	Shift	Abs PM	CA PM	Latitude	Longitude	# Days Active	Avg Extent (Miles)	Total Delay (veh-hrs)	Total Duration (mins)
SAC	SR51-S	EB Exposition Bl	ML	PM	3.326	3.326	38.59656	-121.44377	58	2.14	33,910	9,065
YOLO	I80-E	80EB at Mace Blvd	ML	PM	74.901	2.714	38.55267	-121.69366	59	2.39	25,253	8,550
PLA	I80-W	EB Douglas Blvd	ML	PM	103.376	1.876	38.74279	-121.27167	58	1.06	16,319	9,195
SAC	US50-W	15th St	ML	PM	4.501	L1.345	38.56382	-121.49332	50	1.24	13,655	5,475
YUB	SR70-E	Feather River Blvd	ML	PM	19.311	R11.064	39.12164	-121.57225	23	3.12	13,257	2,640
PLA	I80-E	Roseville Pkwy	ML	PM	104.893	3.393	38.76232	-121.25868	53	1.73	12,411	4,725
SAC	SR51-S	WB Exposition Bl	ML	PM	3.411	3.411	38.59771	-121.44316	61	1.16	12,382	3,710
SAC	SR51-N	51NB Elvas Underpass	ML	PM	2.089	2.089	38.58472	-121.45696	54	1.37	10,875	3,990
SAC	SR99-S	99SB at Cosumnes	ML	PM	290.675	16.23	38.45643	-121.4104	55	1.60	10,847	5,670
SAC	US50-E	16th St	ML	PM	4.722	L1.566	38.56254	-121.48958	41	2.04	10,790	3,095

#### Notes:

- For the table above, the quarterly delay calculation was based upon a 60-mph threshold, for the a.m. or p.m. weekday peak period.
- Three of the top ten bottlenecks are located on SR 51, it is the most congested corridor in Sacramento.
- In continued efforts to help relieve congestion and allow safe merging during high traffic demand periods, the California Department of Transportation (Caltrans) has updated the ramp metering operation hours on all major freeways in Sacramento region. The metering hours will be based on traffic demand and will be activated 24/7, including holidays when minimum traffic thresholds are met. The ramp meters will be active every day including weekends and holidays.

- Caltrans District 3 has plans to construct High Occupancy Vehicle (HOV) lanes on SR-51 in Sacramento County, I-80 in Yolo County and SR-65 in Placer County. These projects are expected to reduce delay at some of the nearby bottlenecks identified above.
- The HOV lane projects on I-5 and US-50 is under construction right now.
- The project on SR 65/I-80 interchange is currently under construction for Phase 1. This phase includes reconstructing the WB I-80 connector to NB SR-65 to increase capacity and includes reconstructing the Stanford Ranch/Galleria IC improvements. The remainder of the SR 65 project is not currently funded. The planned HOV project on SR 51 is currently funding for PA&ED.
- Our district is preparing to use the information in this report to prioritize funding for projects in the SHOPP mobility programs.

## Quarterly Mobility Statistics

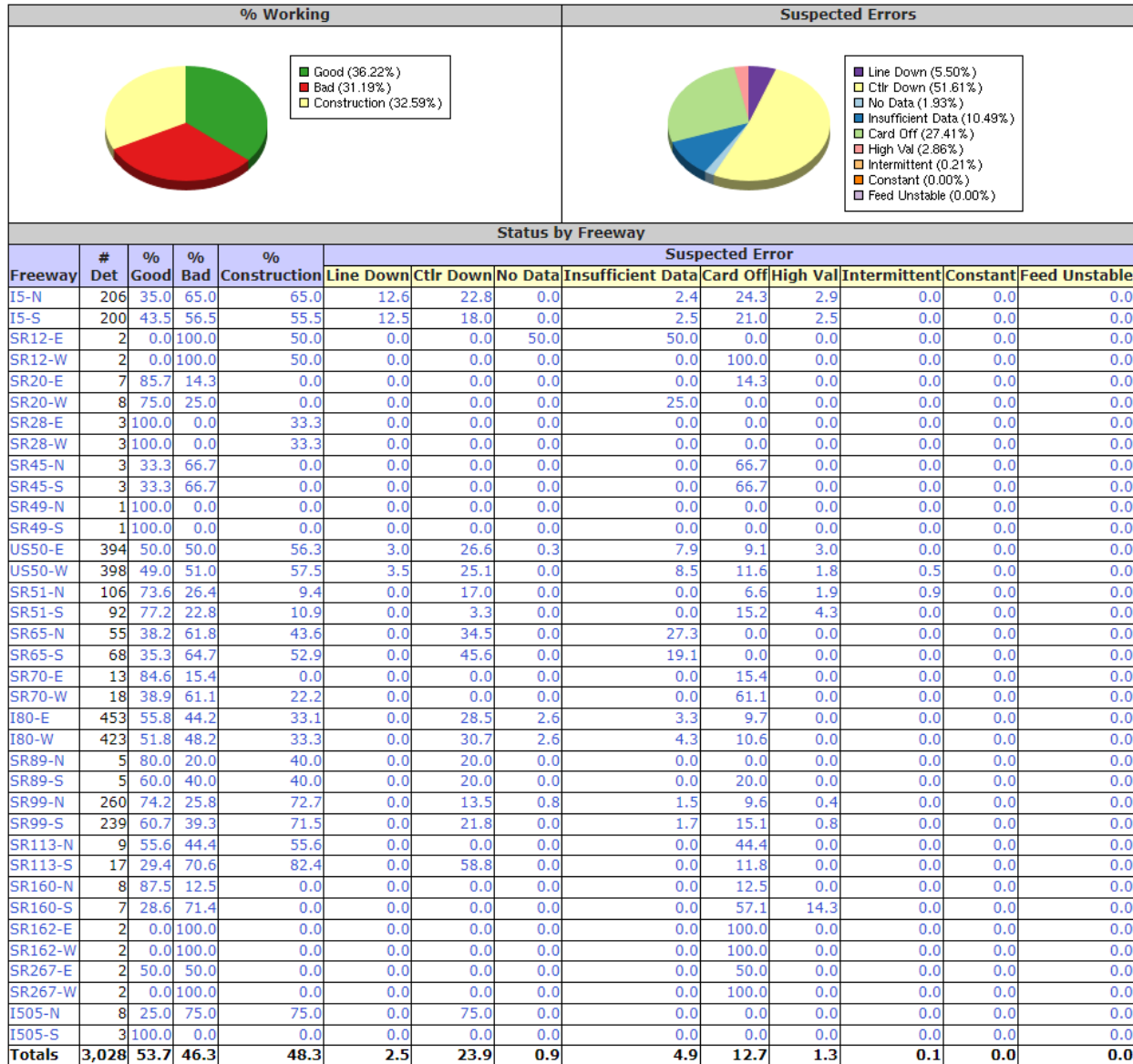
Measure	Graph	Percentage Change							
Vehicle Miles of Travel (VMT)	<p>Miles (Billions)</p> <table border="1"> <tr><th>Year</th><th>Q4</th></tr> <tr><td>2020</td><td>2.06</td></tr> <tr><td>2021</td><td>2.91</td></tr> </table>	Year	Q4	2020	2.06	2021	2.91	Over one year ago	Over last quarter
		Year	Q4						
		2020	2.06						
2021	2.91								
40.9%	-1.9%								
↑	↑								
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Year</th><th>Q4</th></tr> <tr><td>2020</td><td>485</td></tr> <tr><td>2021</td><td>626</td></tr> </table>	Year	Q4	2020	485	2021	626	Over one year ago	Over last quarter
		Year	Q4						
		2020	485						
2021	626								
29.2%	-22.3%								
↑	↑								
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours</p> <table border="1"> <tr><th>Year</th><th>Q4</th></tr> <tr><td>2020</td><td>5,431</td></tr> <tr><td>2021</td><td>8,245</td></tr> </table>	Year	Q4	2020	5,431	2021	8,245	Over one year ago	Over last quarter
		Year	Q4						
		2020	5,431						
2021	8,245								
51.8%	-12.2%								
↑	↑								
Total Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Year</th><th>Q4</th></tr> <tr><td>2020</td><td>1.78</td></tr> <tr><td>2021</td><td>2.57</td></tr> </table>	Year	Q4	2020	1.78	2021	2.57	Over one year ago	Over last quarter
		Year	Q4						
		2020	1.78						
2021	2.57								
44.4%	-5.7%								
↑	↑								
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Year</th><th>Q4</th></tr> <tr><td>2020</td><td>22</td></tr> <tr><td>2021</td><td>35</td></tr> </table>	Year	Q4	2020	22	2021	35	Over one year ago	Over last quarter
		Year	Q4						
		2020	22						
2021	35								
58.9%	0.6%								
↑	↑								

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph		Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Sun/Hol -34.5% ↓	Sun/Hol -43.8% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
Thursday 93.1% ↑	Thursday 21.5% ↑		
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago	Largest Magnitude Weekday Decrease over last quarter
		11 PM -66.2% ↓	2 PM -37.5% ↓
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
5 PM 71% ↑	5 PM 28.3% ↑		
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago	Largest Magnitude Saturday Decrease over last quarter
		10 AM -45.5% ↓	10 AM -73.3% ↓
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
5 PM 26.9% ↑	5 PM 27.4% ↑		
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago	Largest Magnitude Sun./Holiday Decrease over last quarter
		5 PM -63.6% ↓	1 PM -72.1% ↓
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
11 PM 83.5% ↑	11 PM 58.1% ↑		

Measure	Graph	Percentage Change													
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter												
		El Dorado -63% ↓	Sacramento -16% ↓												
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter												
		↑ Sacramento 34.1%	Yuba 40.4% ↑												
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph		Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter												
		-	Off-Peak Day -18.4% ↓												
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter												
		↑ PM Peak 61%	PM Peak 15.2% ↑												
Average Number of Good and Bad Detectors	<table border="1"> <thead> <tr> <th>Quarter</th> <th>Average of Good</th> <th>Average of Bad</th> </tr> </thead> <tbody> <tr> <td>2020 Q4</td> <td>1,968</td> <td>678</td> </tr> <tr> <td>2021 Q3</td> <td>1,667</td> <td>1,229</td> </tr> <tr> <td>2021 Q4</td> <td>1,563</td> <td>1,465</td> </tr> </tbody> </table>	Quarter	Average of Good	Average of Bad	2020 Q4	1,968	678	2021 Q3	1,667	1,229	2021 Q4	1,563	1,465	Change in Good over one year ago	Change in Good over last quarter
		Quarter	Average of Good	Average of Bad											
		2020 Q4	1,968	678											
2021 Q3	1,667	1,229													
2021 Q4	1,563	1,465													
-21% ↓	-6% ↓														
Change in Bad over one year ago	Change in Bad over last quarter														
116% ↑	19% ↑														

Figure below is the screen shot on 12/31/2021, end of the Q4. This Figure illustrates the percentage of detector health per route to determine which detectors are measuring the performance of our state highways in District 3. Due to construction projects on I-5 (Metro Parkway Interchange Extension and Northbound Auxiliary Lane Extension), I-80 (RHMA Pavement Rehabilitation Project), US-50 (Multimodal Corridor Enhancement and Rehabilitation Project), and SR-99 (RHMA Overlay), about one third of detectors are out of service. Caltrans will not be able to see

much improvement of detectors health until construction is completed on the main corridors within the Sacramento Metro area.



Overall, congestion and delay have decreased due to impact of COVID 19 variants, when compared with the previous quarter. See table below for reference.



Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2021 Q4-2020 Q4		Difference 2021 Q4-2021 Q3		Rank		
		2020 Q4	2021 Q3	2021 Q4	Absolute	Percentage	Absolute	Percentage	2020 Q4	2021 Q3	2021 Q4
SR51	Sacramento	84009.9	108688	145846.2	61836.3	1	37158.2	0	1	3	1
SR99	Sacramento	63071.7	103942	91497.3	28425.6	0	-12444.7	0	4	4	2
I80	Yolo	30872	133157.2	80004.4	49132.4	2	-53152.8	0	7	2	3
I5	Sacramento	80780.5	154671.6	59808.5	-20972	0	-94863.1	-1	2	1	4
I80	Placer	36692.1	40273.8	50162.2	13470.1	0	9888.4	0	5	8	5
US50	Sacramento	31507.2	46700	47974.6	16467.4	1	1274.6	0	6	6	6
SR65	Placer	29819.3	66054.3	34056.4	4237.1	0	-31997.9	0	8	5	7
SR70	Yuba	12387.4	20995.7	29452.7	17065.3	1	8457	0	11	10	8
US50	El Dorado	69061.8	42758.7	25429.4	-43632.4	-1	-17329.3	0	3	7	9
I80	Sacramento	14384.7	20543.3	21855	7470.3	1	1311.7	0	10	11	10
I80	Nevada	18691.7	36677.6	13700.4	-4991.3	0	-22977.2	-1	9	9	11
I5	Yolo	1357.9	6618.3	10093.3	8735.4	6	3475	1	16	13	12
US50	Yolo	2714.6	12761.7	9361.9	6647.3	2	-3399.8	0	13	12	13
SR89	Placer	316.2	555.5	2987	2670.8	8	2431.5	4	19	18	14
SR12	Sacramento	1484.4	5875	2807.5	1323.1	1	-3067.5	-1	15	14	15
SR28	Placer	502.4	3129	1271.8	769.4	2	-1857.2	-1	17	15	16
SR89	El Dorado	456.7	329	286.6	-170.1	0	-42.4	0	18	20	17
SR99	Butte	2534.3	1750	203.3	-2331	-1	-1546.7	-1	14	16	18
SR113	Yolo	0	160.2	130	130		-30.2	0		24	19
SR113	Sutter	0	0	84.4	84.4		84.4				20
I5	Colusa	0	0	82.8	82.8		82.8				21
SR99	Sutter	293.2	171.1	53.1	-240.1	-1	-118	-1	20	22	22
I505	Yolo	0	29.4	38.5	38.5		9.1	0		27	23
SR49	Nevada	0	608.9	28.3	28.3		-580.6	-1		17	24
SR20	Yuba	0	0.1	23.3	23.3		23.2	232		30	25
SR20	Colusa	2.7	445.8	19.7	17	6	-426.1	-1	21	19	26
SR267	Placer	3881.5	29.9	15.9	-3865.6	-1	-14	0	12	26	27
SR70	Sutter	0	0.3	12.2	12.2		11.9	40		29	28
SR20	Sutter	0	0	9.3	9.3		9.3				29
SR160	Sacramento	0	144.3	4.5	4.5		-139.8	-1		25	30
SR162	Butte	0	164.6	2.2	2.2		-162.4	-1		23	31
SR45	Colusa	0	2.8	1.8	1.8		-1	0		28	32
SR20	Nevada	0	173.2	0	0		-173.2	-1		21	
<b>Total:</b>		<b>484,822</b>	<b>807,411</b>	<b>627,305</b>	<b>142,482</b>	<b>29.4%</b>	<b>-180,107</b>	<b>-22.3%</b>			

As indicated by the table above the Total Delay for all monitored routes has decreased by 180,107 hours, a decrease of 22.3% when compared with previous quarter.

Based on the total delay by route, SR-51 was the worst performing freeway in District 3 due to its bottleneck locations. The top three out of ten most congested routes are in Sacramento, Yolo and Placer County, which is due to its travel demand associated with Sacramento Regional high population, employment and educational centers. As identified on pages 2 and 3 of this report, Caltrans is continuing the process of implementing HOV lanes and 24/7 ramp meter operations for Sacramento’s freeway system. HOV lane projects on SR-51, I-5, I-80, and US-50 are planned or under construction to mitigate congestion on these routes. Further congestion mitigation can be

achieved by *Work at Home* and increasing mode shift away from single occupancy vehicles to higher occupancy vehicles such as carpooling, vanpooling, and higher utilization of mass transit options. The District continues to explore the best possible ways to reduce delay in the impacted areas of District 3.