

District 03 Mobility Performance Report

2021 Third Quarter

DEPARTMENT OF TRANSPORTATION

October 20, 2021
Office of Freeway Operations

District 03 Mobility Performance Report

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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 Third quarter of 2021, there is a small increase in delay due to rise of employment rate. The total delay on the freeways in District 3 equaled *0.81* million vehicle hours of delay (VHD) below the 35-mph speed threshold and *2.73* million VHD below 60-mph threshold. The average delay experienced on weekdays in this quarter was approximately *9,400* of VHD below 35-mph, and *35,000* of VHD below 60-mph.

Vehicle Miles of Travel (VMT) increased by *18.3%* with a total of *2.96* billion miles when compared to the previous quarter (*2.51* billion miles). The VHD below the 60-mph speed threshold increased by *10%* during the same quarter. See graphs on page 4 for details.

Top Ten Bottlenecks for the Third Quarter of 2021

County	Fwy	Name	Type	Shift	Abs PM	CA PM	Lat.	Longi.	# Days Active	Avg Extent (Miles)	Total Delay (veh-hrs)	Total Duration (mins)
SAC	SR51-S	EB Exposition Bl	ML	PM	3.33	3.326	38.60	-121.44	65	1.53	33,919.60	13,380.00
ED	US50-E	Midway Rd	ML	PM	107.96	79.801	38.95	-119.95	65	4.28	27,552.70	18,850.00
YOLO	I80-E	80EB at Mace Blvd	ML	PM	74.90	2.714	38.55	-121.69	64	1.60	27,172.80	11,425.00
PLA	SR65-S	Pleasant Grove Blvd	ML	PM	66.91	R7.189	38.79	-121.29	64	1.51	24,430.90	10,260.00
YOLO	I80-W	80WB at Enterprise	ML	AM	81.30	9.11	38.57	-121.58	50	1.96	20,844.80	5,930.00
YUBA	SR70-E	70EB at LAURELLEN ROAD	ML	PM	22.74	16.127	39.17	-121.59	43	5.69	17,729.60	4,400.00
SAC	US50-W	15th St	ML	PM	4.50	L1.345	38.56	-121.49	56	1.22	15,484.00	6,250.00
SAC	SR51-N	51NB Elvas Underpass	ML	PM	2.09	2.089	38.58	-121.46	59	1.20	13,762.00	5,560.00
PLA	I80-W	EB Douglas Blvd	ML	PM	103.38	1.876	38.74	-121.27	62	0.96	11,921.20	7,315.00
PLA	SR65-S	Pleasant Grove Blvd	ML	AM	66.91	R7.189	38.79	-121.29	64	1.58	10,529.60	4,845.00

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 I-80, SR 51, and SR 50, it is the most congested corridor in Sacramento, Yolo, and El Dorado region.
- 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.

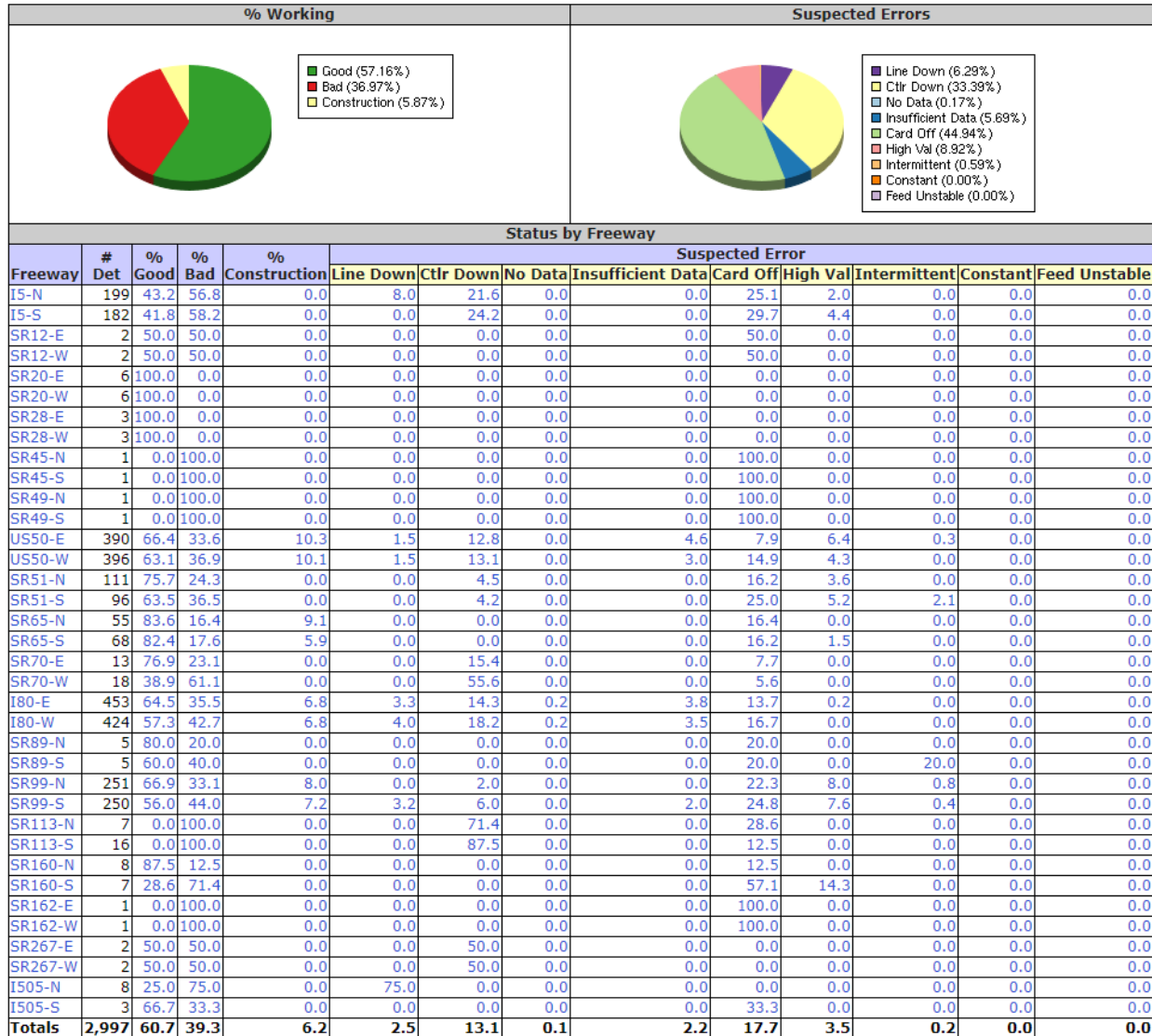
Quarterly Mobility Statistics

Measure	Graph	Percentage Change									
Vehicle Miles of Travel (VMT)	<p>Miles (Billions)</p> <table border="1"> <tr><th>Year</th><th>Q3</th></tr> <tr><td>2020</td><td>2.23</td></tr> <tr><td>2021</td><td>2.51</td></tr> <tr><td>2021</td><td>2.96</td></tr> </table>	Year	Q3	2020	2.23	2021	2.51	2021	2.96	Over one year ago	Over last quarter
		Year	Q3								
		2020	2.23								
2021	2.51										
2021	2.96										
32.9%	18.3%										
↑	↑										
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Year</th><th>Q3</th></tr> <tr><td>2020</td><td>452</td></tr> <tr><td>2021</td><td>747</td></tr> <tr><td>2021</td><td>806</td></tr> </table>	Year	Q3	2020	452	2021	747	2021	806	Over one year ago	Over last quarter
		Year	Q3								
		2020	452								
2021	747										
2021	806										
78.4%	8%										
↑	↑										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours</p> <table border="1"> <tr><th>Year</th><th>Q3</th></tr> <tr><td>2020</td><td>4,975</td></tr> <tr><td>2021</td><td>8,692</td></tr> <tr><td>2021</td><td>9,389</td></tr> </table>	Year	Q3	2020	4,975	2021	8,692	2021	9,389	Over one year ago	Over last quarter
		Year	Q3								
		2020	4,975								
2021	8,692										
2021	9,389										
88.7%	8%										
↑	↑										
Total Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Year</th><th>Q3</th></tr> <tr><td>2020</td><td>1.89</td></tr> <tr><td>2021</td><td>2.48</td></tr> <tr><td>2021</td><td>2.73</td></tr> </table>	Year	Q3	2020	1.89	2021	2.48	2021	2.73	Over one year ago	Over last quarter
		Year	Q3								
		2020	1.89								
2021	2.48										
2021	2.73										
43.8%	10%										
↑	↑										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Year</th><th>Q3</th></tr> <tr><td>2020</td><td>23</td></tr> <tr><td>2021</td><td>31</td></tr> <tr><td>2021</td><td>35</td></tr> </table>	Year	Q3	2020	23	2021	31	2021	35	Over one year ago	Over last quarter
		Year	Q3								
		2020	23								
2021	31										
2021	35										
52.6%	12.4%										
↑	↑										

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 -9.3% ↓	Sun/Hol -9.6% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Wednesday 69.4% ↑	Monday 21.1% ↑
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
		6 AM -10.2% ↓	9 PM -55.5% ↓
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		5 PM 108.2% ↑	8 AM 71.6% ↑
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 PM -49.6% ↓	1 PM -2.9% ↓
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		10 AM 257.2% ↑	10 AM 56.7% ↑
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 -19.3% ↓	3 PM -39% ↓
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		1 PM 34.5% ↑	10 AM 78.7% ↑

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 -25.5% ↓ Sacramento 81.8% ↑	Sacramento -2.4% ↓ Placer 23.8% ↑
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
		PM Peak 82.3% ↑ AM Peak 33.2% ↑	- -
Average Number of Good and Bad Detectors		Change in Good over one year ago	Change in Good over last quarter
		-10% ↓ 79% ↑	-7% ↓ 24% ↑

Figure below is the screen shot on 7/1/2021, beginning of the Q3. This Figure illustrates the percentage of detector health per route to determine which detectors are measuring the performance of our state highways. 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), more than one third of detectors are out of service. Caltrans will not be able to see much improvement of traffic flow until construction is completed on the main corridors within the Sacramento Metro area.



Overall, congestion and delay have a large increase due to rise of employment rate and weather conditions, when compared with the previous quarter and Q3 2020. See table below for reference.

Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2021 Q3-2020 Q3		Difference 2021 Q3-2021 Q2		Rank		
		2020 Q3	2021 Q2	2021 Q3	Absolute	Percentage	Absolute	Percentage	2020 Q3	2021 Q2	2021 Q3
I5	Sacramento	66140.8	141550.4	154671.6	88530.8	1	13121.2	0	1	1	1
I80	Yolo	40268	121611.4	133157.2	92889.2	2	11545.8	0	5	3	2
SR51	Sacramento	60064.4	122827.9	108688	48623.6	1	-14139.9	0	3	2	3
SR99	Sacramento	64234.9	110358.1	103942	39707.1	1	-6416.1	0	2	4	4
SR65	Placer	15165.2	53843.7	66054.3	50889.1	3	12210.6	0	9	6	5
US50	Sacramento	33239	62911.7	46700	13461	0	-16211.7	0	8	5	6
US50	El Dorado	57469.7	38763.1	42758.7	-14711	0	3995.6	0	4	7	7
I80	Placer	34050.6	32735.3	40273.8	6223.2	0	7538.5	0	7	8	8
I80	Nevada	40110.1	16626.3	36677.6	-3432.5	0	20051.3	1	6	9	9
SR70	Yuba	5004	10219.1	20995.7	15991.7	3	10776.6	1	13	10	10
I80	Sacramento	14349.8	9542.2	20543.3	6193.5	0	11001.1	1	10	11	11
US50	Yolo	5625.6	9504.3	12761.7	7136.1	1	3257.4	0	12	12	12
I5	Yolo	2477.3	5598.2	6618.3	4141	2	1020.1	0	15	13	13
SR12	Sacramento	3680.9	3467.1	5875	2194.1	1	2407.9	1	14	14	14
SR28	Placer	8.4	462.6	3129	3120.6	372	2666.4	6	21	19	15
SR99	Butte	327.6	458.7	1750	1422.4	4	1291.3	3	18	20	16
SR49	Nevada	0	1.2	608.9	608.9		607.7	506		29	17
SR89	Placer	822.6	1078.3	555.5	-267.1	0	-522.8	0	16	17	18
SR20	Colusa	0	1354.4	445.8	445.8		-908.6	-1		16	19
SR89	El Dorado	386.2	3381.6	329	-57.2	0	-3052.6	-1	17	15	20
SR20	Nevada	0	41.6	173.2	173.2		131.6	3		23	21
SR99	Sutter	307.7	137.4	171.1	-136.6	0	33.7	0	19	21	22
SR162	Butte	0	124.4	164.6	164.6		40.2	0		22	23
SR113	Yolo	26.4	36	160.2	133.8	5	124.2	3	20	24	24
SR160	Sacramento	0.9	21.2	144.3	143.4	159	123.1	6	22	25	25
SR267	Placer	8097.7	755.7	29.9	-8067.8	-1	-725.8	-1	11	18	26
I505	Yolo	0	12.5	29.4	29.4		16.9	1		27	27
SR45	Colusa	0	0.8	2.8	2.8		2	3		30	28
SR70	Sutter	0	3.5	0.3	0.3		-3.2	-1		28	29
SR20	Yuba	0	0	0.1	0.1		0.1				30
I5	Colusa	0	15.7	0	0		-15.7	-1		26	
Total:		451,858	747,444	807,411	355,554	56.0%	59,967	92.6%			

As indicated by the table above the Total Delay for all monitored routes has increased by 59,967 hours, a rise of 92.6% when compared with previous quarter.

Based on the total delay by route, I-5 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 and Yolo County, which is due to its travel demand associated with Sacramento County’s high population, regional 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.