

District 03 Mobility Performance Report

2022 Fourth Quarter

DEPARTMENT OF TRANSPORTATION

January 26, 2023
Office of Freeway Operations

2022 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 2022, there is a slightly decrease in delay due to seasonal change in traffic demand. The total delay on the freeways in District 3 equaled 789 thousand vehicle hours of delay (VHD) below the 35-mph speed threshold and 2.6 million VHD below 60-mph threshold. The average delay experienced on weekdays in this quarter was approximately *11 thousand* of VHD below 35-mph, and *36 thousand* of VHD below 60-mph.

Vehicle Miles of Travel (VMT) decreased by 6.2% with a total of 2.44 billion miles when compared to that of the previous quarter (2.61 billion miles). The VHD below the 60-mph speed threshold decreased by 9.5% during the same quarter. The reduction in VMT conjunction with decrease in Delay indicates seasonal change in traffic demand (more shopping trips with less commuter traffic). See graphs on page 4 and 5 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)
PLA	I80-W	EB Douglas Blvd	ML	PM	103.38	1.876	38.74	-121.27	59	1.88	41,142	9,775
SAC	SR51-S	EB Exposition Blvd	ML	PM	3.33	3.326	38.60	-121.44	56	2.09	35,069	8,890
YOLO	SR99-S	99SB at Cosumnes (Calvine Rd)	ML	PM	290.68	16.23	38.46	-121.41	60	1.61	24,634	10,715
SAC	US50-E	16th Street	ML	PM	4.72	L1.566	38.56	-121.49	63	1.09	23,974	8,775
SUT	SR70-E	70EB Yuba River Br	ML	PM	20.15	13.524	39.13	-121.58	30	2.76	23,712	5,190
YOLO	I80-E	80EB at Chiles Rd	ML	PM	77.73	5.543	38.56	-121.64	36	4.43	23,691	3,780
SAC	SR51-N	51NB at Elvas Underpass	ML	PM	2.53	2.529	38.59	-121.45	47	2.25	18,214	3,885
YOLO	I80-W	80WB at Enterprise Blvd	ML	AM	81.30	9.11	38.57	-121.58	33	2.13	17,774	4,045
PLA	SR65-S	Pleasant Grove Blvd	ML	PM	66.91	R7.189	38.79	-121.29	62	1.44	17,369	9,250
ED	US50-E	Midway Rd (Pioneer Trail Int.)	ML	PM	107.96	79.801	38.95	-119.95	63	3.01	16,139	18,890

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/Yolo Causeway, it is the major connector between San Francisco Bay Area and Sacramento 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 are under construction right now.
- The project on SR 65/I-80 interchange is completed for Phase 1. This phase included 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.
- EB-50 at Pioneer Trail (South Lake Tahoe) was experiencing seasonal tourist congestion during this and previous quarter. No feasible mitigation is identified at this time.
- Our District is preparing to use the information in this report to prioritize funding for projects in the SHOPP mobility programs.

Quarterly Mobility Statistics

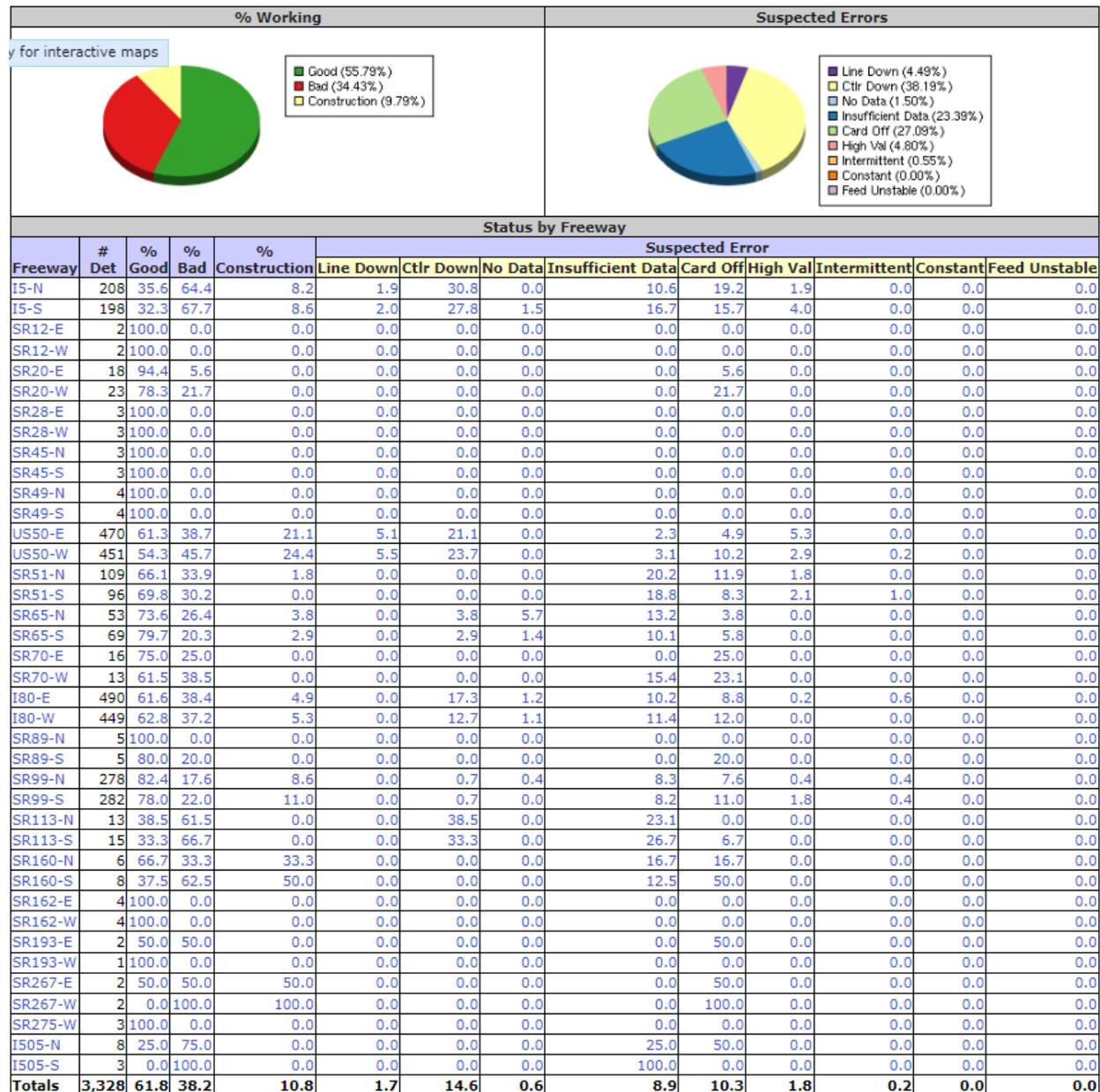
Measure	Graph	Percentage Change									
Vehicle Miles of Travel (VMT)	<p>Miles (Billions)</p> <table border="1"> <tr><th>Year</th><th>Q4</th></tr> <tr><td>2021</td><td>2.91</td></tr> <tr><td>2022</td><td>2.61</td></tr> <tr><td>2022</td><td>2.44</td></tr> </table>	Year	Q4	2021	2.91	2022	2.61	2022	2.44	Over one year ago	Over last quarter
		Year	Q4								
		2021	2.91								
2022	2.61										
2022	2.44										
-16%	-6.2%										
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>2021</td><td>627</td></tr> <tr><td>2022</td><td>956</td></tr> <tr><td>2022</td><td>789</td></tr> </table>	Year	Q4	2021	627	2022	956	2022	789	Over one year ago	Over last quarter
		Year	Q4								
		2021	627								
2022	956										
2022	789										
25.9%	-17.4%										
Average Non-Holiday Weekday 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>2021</td><td>8</td></tr> <tr><td>2022</td><td>12</td></tr> <tr><td>2022</td><td>11</td></tr> </table>	Year	Q4	2021	8	2022	12	2022	11	Over one year ago	Over last quarter
		Year	Q4								
		2021	8								
2022	12										
2022	11										
31.7%	-7.9%										
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>2021</td><td>2.6</td></tr> <tr><td>2022</td><td>2.8</td></tr> <tr><td>2022</td><td>2.6</td></tr> </table>	Year	Q4	2021	2.6	2022	2.8	2022	2.6	Over one year ago	Over last quarter
		Year	Q4								
		2021	2.6								
2022	2.8										
2022	2.6										
-0.7%	-9.5%										
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>2021</td><td>35</td></tr> <tr><td>2022</td><td>37</td></tr> <tr><td>2022</td><td>36</td></tr> </table>	Year	Q4	2021	35	2022	37	2022	36	Over one year ago	Over last quarter
		Year	Q4								
		2021	35								
2022	37										
2022	36										
1.9%	-2.1%										

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
		Thursday -5.5% ↓	Sun/Hol -47.6% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Friday 4% ↑	Thursday 7.4% ↑
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 -29.7% ↓	3 PM -11.3% ↓
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		4 PM 36.6% ↑	5 PM 18.8% ↑
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
		5 PM -21.8% ↓	11 AM -42.8% ↓
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		3 PM 54.6% ↑	8 AM 268.1% ↑
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
		8 PM -56.2% ↓	1 PM -68.3% ↓
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		4 PM 17.2% ↑	5 AM 144.5% ↑

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
		↓	Yolo -45.6% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Sacramento ↑ 27.4%	Placer ↑ 8.3%
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
		↓	↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		PM Peak ↑ 18.8%	PM Peak ↑ 30.4%
Average Number of Good and Bad Detectors		Change in Good over one year ago	Change in Good over last quarter
		46% ↑	8% ↑
		Change in Bad over one year ago	Change in Bad over last quarter
		-29% ↓	-1% ↓

The Figure below is a screenshot displaying detector health data taken on 10/01/2022, at the beginning of Q4 2022. 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 (HOV lane is under construction from US 50 connector to City of Elk Grove), 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 region.



Overall, congestion and delay have decreased in delay due to change in seasonal traffic demand. Travel demand (VMT) was decreased by 6.2% and delay was decreased (VHD) by 17% when compared to the previous quarter. See table below for reference.

Congestion by Route

Route	County	Vehicle Hours of Delay at 35 mph			Difference 2022 Q4-2021 Q4		Difference 2022 Q4-2022 Q3		Rank		
		2021 Q4	2022 Q3	2022 Q4	Absolute	Percentage	Absolute	Percentage	2021 Q4	2022 Q3	2022 Q4
		SR51	Sacramento	145,846	116,612	162,879	17,033	11.7%	46,267	39.7%	1
I5	Sacramento	59,809	172,103	122,213	62,405	104.3%	-49,889	-29.0%	4	1	2
SR99	Sacramento	91,497	119,910	97,406	5,908	6.5%	-22,504	-18.8%	2	3	3
I80	Yolo	80,004	161,660	82,297	2,292	2.9%	-79,364	-49.1%	3	2	4
I80	Placer	50,162	50,936	66,113	15,951	31.8%	15,177	29.8%	5	8	5
US50	Sacramento	47,975	63,260	57,736	9,761	20.3%	-5,524	-8.7%	6	5	6
SR65	Placer	34,056	62,293	56,919	22,862	67.1%	-5,374	-8.6%	7	6	7
US50	El Dorado	25,429	45,263	34,013	8,584	33.8%	-11,249	-24.9%	9	9	8
SR20	Yuba	23	36,399	32,571	32,548	139690.6%	-3,828	-10.5%	25	10	9
I80	Sacramento	21,855	51,182	27,049	5,194	23.8%	-24,133	-47.2%	10	7	10
I80	Nevada	13,700	31,505	15,557	1,857	13.6%	-15,948	-50.6%	11	11	11
US50	Yolo	9,362	20,460	14,979	5,617	60.0%	-5,481	-26.8%	13	12	12
I5	Yolo	10,093	5,777	5,121	-4,972	-49.3%	-655	-11.3%	12	14	13
SR89	Placer	2,987	1,134	4,107	1,120	37.5%	2,973	262.1%	14	17	14
SR99	Butte	203	618	2,204	2,001	984.3%	1,587	256.9%	18	22	15
SR99	Sutter	53	384	2,168	2,115	3983.4%	1,784	464.7%	22	24	16
SRI2	Sacramento	2,808	1,763	2,119	-688	-24.5%	356	20.2%	15	16	17
SRI60	Sacramento	5	726	1,641	1,637	36366.7%	915	126.2%	30	21	18
SR20	Colusa	20	1,111	1,170	1,151	5840.1%	59	5.3%	26	18	19
SR28	Placer	1,272	3,816	827	-445	-35.0%	-2,988	-78.3%	16	15	20
SR70	Yuba	29,453	1,080	314	-29,139	-98.9%	-766	-70.9%	8	19	21
SR20	Nevada	0	0	225	225		225				22
SR89	El Dorado	287	6,329	139	-148	-51.7%	-6,190	-97.8%	17	13	23
SRI13	Yolo	130	486	76	-54	-41.8%	-410	-84.4%	19	23	24
SR267	Placer	16	68	70	54	340.9%	2	2.8%	27	27	25
SR45	Colusa	2	21	58	57	3138.9%	38	183.0%	32	30	26
SR49	Nevada	28	31	45	17	59.4%	14	46.4%	24	28	27
I505	Yolo	39	27	13	-26	-67.3%	-15	-54.0%	23	29	28
I5	Colusa	83	762	11	-72	-86.6%	-751	-98.5%	21	20	29
SR20	Sutter	9	311	6	-4	-38.7%	-305	-98.2%	29	25	30
SRI62	Butte	2	3	4	2	90.9%	2	61.5%	31	32	31
SR70	Sutter	12	4	4	-8	-65.6%	0	5.0%	28	31	32
SRI13	Sutter	84	1	1	-84	-99.3%	0	-14.3%	20	33	33
I505	Yuba	0	110	0	0		-110	-100.0%			26
SR275	Yolo	0	0	0	0		0	-100.0%			34
TOTALS		627,305	956,142	790,057	162,752	25.9%	-166,085	-17.4%			

As indicated by the table above, the Total Delay for all monitored routes has decreased to 790,057 hours, a decrease of 17.4% when compared with previous quarter.

Based on the total delay by route, Sacramento SR-51 was the worst performing freeway in District 3 due to its bottleneck locations. Most of the congested routes in Sacramento region are serving traffic to Downtown Sacramento, 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. District 3 will continue to explore the best possible ways to reduce delay in the impacted freeways and highways.