

District 03 Mobility Performance Report

2019 Third Quarter

DEPARTMENT OF TRANSPORTATION

October 21, 2019
Office of Freeway Operations

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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 35mph 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 2019, the total delay on the on freeways in District 3 equaled 1.62 million vehicle hours of delay (VHD) below the 35mph speed threshold and 4.07 million VHD below 60mph threshold. The average delay experienced on weekdays in this quarter was approximately 21,900 of VHD below 35mph, and 55,000 of VHD below 60mph. State Route (SR)-51 continues to be the worst performing freeway in District 3 with 265,264 of VHD caused by several severe bottlenecks.

Vehicle Miles of Travel (VMT) increased by 5.3 percent with a total of 2.57 billion miles when compared to the previous quarter (2.44 billion miles). The VHD below the 60mph speed threshold increased by 16.4 percent during the same quarter. This relationship indicates the travel demand for the weekend has increased, see graphs on page 5 for details.

Top Ten Bottlenecks for the Third Quarter of 2019

Fwy	Name	Shift	Abs PM	CA PM	# Days Active	Avg Extent (Miles)	Total Delay (veh-hrs)	Total Duration (mins)
US50-W	15th St	PM	4.50	L1.345	63	3.32	65,620	9,240
I80-E	NB Mace Blvd	PM	74.95	2.763	64	2.75	47,942	10,120
US50-E	25th St	PM	5.28	L2.128	53	2.85	36,492	4,835
SR99-S	EB Consumnes River	PM	290.68	16.23	64	1.93	36,180	10,880
I5-S	S Land Park Dr	PM	512.06	16.771	59	2.14	32,578	10,340
SR51-N	North of A St	PM	2.09	2.092	64	1.76	32,167	7,265
SR51-S	EB Exposition Bl	PM	3.33	3.326	55	1.42	31,917	8,930
SR65-S	Galleria Blvd	PM	65.70	R5.983	56	3.05	28,840	9,325
SR99-N	WB 47th Ave	AM	295.42	20.951	58	3.85	28,507	4,100
I5-N	Jibboom St	PM	519.48	24.185	56	1.84	26,108	7,420

Notes:

- For the table above, the quarterly delay calculation was based upon a 60mph threshold, for the a.m. or p.m. weekday peak period.
- Caltrans District 3 has plans to construct High Occupancy Vehicle (HOV) lanes on I-5, US-50, and 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 were nominated for SB-1 funding in 2017. 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 project on SR 51 is currently funding for PA&ED.
- Southbound SAC-99 ramp meters will be in operation by end of this year. The project limits are from downtown Sacramento to Calvine Rd/SAC-99 interchange.
- Caltrans has an emergency Ramp Meter project on Skyway Rd/NB-99 interchange to address the congestion caused by the surge of population in City of Chico.
- 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>Quarter</th><th>Value</th></tr> <tr><td>2018 Q3</td><td>2.41</td></tr> <tr><td>2019 Q2</td><td>2.44</td></tr> <tr><td>2019 Q3</td><td>2.57</td></tr> </table>	Quarter	Value	2018 Q3	2.41	2019 Q2	2.44	2019 Q3	2.57	Over one year ago	Over last quarter
		Quarter	Value								
		2018 Q3	2.41								
2019 Q2	2.44										
2019 Q3	2.57										
6.5%	5.3%										
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Quarter</th><th>Value</th></tr> <tr><td>2018 Q3</td><td>1.26</td></tr> <tr><td>2019 Q2</td><td>1.38</td></tr> <tr><td>2019 Q3</td><td>1.62</td></tr> </table>	Quarter	Value	2018 Q3	1.26	2019 Q2	1.38	2019 Q3	1.62	Over one year ago	Over last quarter
		Quarter	Value								
		2018 Q3	1.26								
2019 Q2	1.38										
2019 Q3	1.62										
28.6%	17.1%										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Quarter</th><th>Value</th></tr> <tr><td>2018 Q3</td><td>17</td></tr> <tr><td>2019 Q2</td><td>19</td></tr> <tr><td>2019 Q3</td><td>22</td></tr> </table>	Quarter	Value	2018 Q3	17	2019 Q2	19	2019 Q3	22	Over one year ago	Over last quarter
		Quarter	Value								
		2018 Q3	17								
2019 Q2	19										
2019 Q3	22										
30.6%	15.1%										
Total Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Quarter</th><th>Value</th></tr> <tr><td>2018 Q3</td><td>3.36</td></tr> <tr><td>2019 Q2</td><td>3.50</td></tr> <tr><td>2019 Q3</td><td>4.07</td></tr> </table>	Quarter	Value	2018 Q3	3.36	2019 Q2	3.50	2019 Q3	4.07	Over one year ago	Over last quarter
		Quarter	Value								
		2018 Q3	3.36								
2019 Q2	3.50										
2019 Q3	4.07										
21.3%	16.4%										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Quarter</th><th>Value</th></tr> <tr><td>2018 Q3</td><td>46</td></tr> <tr><td>2019 Q2</td><td>48</td></tr> <tr><td>2019 Q3</td><td>55</td></tr> </table>	Quarter	Value	2018 Q3	46	2019 Q2	48	2019 Q3	55	Over one year ago	Over last quarter
		Quarter	Value								
		2018 Q3	46								
2019 Q2	48										
2019 Q3	55										
20.1%	14.3%										

Measure	Graph	Percentage Change	
<p>Average Vehicle Hours of Delay by Day of Week at 60 mph</p>		<p>Largest Magnitude Decrease over one year ago</p>	<p>Largest Magnitude Decrease over last quarter</p>
		<p>Tuesday -2% ↓</p>	<p>N/A</p>
		<p>Largest Magnitude Increase over one year ago</p>	<p>Largest Magnitude Increase over last quarter</p>
		<p>Monday 43% ↑</p>	<p>Monday 25.2% ↑</p>
<p>Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays</p>		<p>Largest Magnitude Weekday Decrease over one year ago</p>	<p>Largest Magnitude Weekday Decrease over last quarter</p>
		<p>5 AM -57.6% ↓</p>	<p>10 PM -16.7% ↓</p>
		<p>Largest Magnitude Weekday Increase over one year ago</p>	<p>Largest Magnitude Weekday Increase over last quarter</p>
		<p>5 PM 32.3% ↑</p>	<p>5 PM 16.3% ↑</p>
<p>Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays</p>		<p>Largest Magnitude Saturday Decrease over one year ago</p>	<p>Largest Magnitude Saturday Decrease over last quarter</p>
		<p>7 AM -60.7% ↓</p>	<p>3 PM -27.4% ↓</p>
		<p>Largest Magnitude Saturday Increase over one year ago</p>	<p>Largest Magnitude Saturday Increase over last quarter</p>
		<p>1 PM 82.2% ↑</p>	<p>12 PM 39.1% ↑</p>
<p>Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/Holidays</p>		<p>Largest Magnitude Sun./Holiday Decrease over one year ago</p>	<p>Largest Magnitude Sun./Holiday Decrease over last quarter</p>
		<p>5 PM -32.2% ↓</p>	<p>7 AM -51% ↓</p>
		<p>Largest Magnitude Sun./Holiday Increase over one year ago</p>	<p>Largest Magnitude Sun./Holiday Increase over last quarter</p>
		<p>1 PM 16.5% ↑</p>	<p>1 PM 70.3% ↑</p>

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph	<p>Hours (Thousands)</p>	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Placer -33% ↓	Yuba -50.4% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Sacramento 22.3% ↑	Yolo 48.1% ↑
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph	<p>Miles</p>	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Off-Peak Night -5.8%	N/A
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		PM Peak 47.5% ↑	PM Peak 32.3% ↑
Average Number of Good and Bad Detectors	<p>Number of Detectors</p>	Change in Good over one year ago	Change in Good over last quarter
		0% N/A	7% ↓
		Change in Bad over one year ago	Change in Bad over last quarter
		-3% ↓	9% ↑

Note: As is identified by the detector health graph above, the District's detector health has declined. The graphs indicate a 7% reduction in the number of Good detectors. Caltrans has a Traffic Monitoring Station project (EA: 3F840) completed to help improve detector health. Two other projects will cover locations that were missed by this and other previous projects. We had informed our electrical unit of the declining number of detectors and that they will need to be replace/reactivate.

Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2019 Q3-2018 Q3		Difference 2019 Q3-2019 Q2		Rank		
		2018 Q3	2019 Q2	2019 Q3	Absolute	Percentage	Absolute	Percentage	2018 Q3	2019 Q2	2019 Q3
SR51	Sacramento	208,591	216,535	265,264	56,673	27.2%	48,729	22.5%	1	1	1
US50	Sacramento	166,022	208,421	233,019	66,998	40.4%	24,598	11.8%	4	2	2
I80	Yolo	154,207	180,588	224,523	70,316	45.6%	43,934	24.3%	5	4	3
I5	Sacramento	198,315	145,687	211,496	13,181	6.6%	65,809	45.2%	2	5	4
SR99	Sacramento	186,883	195,731	207,990	21,107	11.3%	12,259	6.3%	3	3	5
US50	El Dorado	11,229	4,935	92,989	81,760	728.1%	88,054	1784.1%	11	14	6
I80	Placer	152,258	60,045	87,802	-64,456	-42.3%	27,757	46.2%	6	8	7
I80	Sacramento	42,291	50,511	70,207	27,916	66.0%	19,696	39.0%	8	9	8
US50	Yolo	7,245	13,976	58,951	51,706	713.7%	44,975	321.8%	14	12	9
SR70	Yuba	48,094	95,726	47,472	-622	-1.3%	-48,255	-50.4%	7	7	10
I80	Nevada	28,758	4,839	46,671	17,913	62.3%	41,832	864.5%	10	15	11
SR65	Placer	35,767	38,646	32,892	-2,875	-8.0%	-5,753	-14.9%	9	10	12
I5	Yolo	10,151	14,717	26,173	16,022	157.8%	11,455	77.8%	12	11	13
SR12	Sacramento	0	2,627	4,557	4,557		1,930	73.5%		16	14
SR99	Butte	642	10,267	4,012	3,371	525.3%	-6,255	-60.9%	15	13	15
SR267	Placer	64	699	3,911	3,847	6039.9%	3,212	459.4%	18	18	16
SR99	Sutter	178	316	1,800	1,622	909.1%	1,484	470.0%	17	19	17
SR89	Placer	0	989	1,372	1,372		383	38.7%		17	18
SR160	Sacramento	10,102	139,387	634	-9,468	-93.7%	-138,753	-99.5%	13	6	19
SR113	Yolo	401	172	547	145	36.2%	375	218.2%	16	20	20
SR28	Placer	0	3	3	3		0	0.0%		21	21
I80	Sierra	41	0	0	-41	-100.0%	0		19		
SR275	Yolo	0	0	0	0		0				
TOTALS		1,261,238	1,384,816	1,622,282	361,044	28.6%	237,466	17.1%			

The following routes had the highest rates of increase in delay in Q3 of 2019 when compared with the previous quarter (Q2 2019).

- US 50 in El Dorado County at 1784.1%
- I-80 in Nevada County 864.5%
- SR 99 in Sutter County at 470.0 %
- SR 267 in Placer County at 459.4%
- US 50 in Yolo County at 321.8%%

Indicated in the data provided above, the delay outside of the Sacramento metro area has increased significantly from the previous season. The cause of the delay increase could be due to a higher Vehicle Detector System (VDS) coverage in the rural areas. Another factor could be higher amount of development rates in the rural areas.

Based on the total delay by route, SR-51 continues to be the worst performing freeway in District 3. The top four out of five most congested routes are in Sacramento County, which is due to the higher travel demand associated with Sacramento County's higher population, regional employment and educational centers. As identified on pages 2 and 3 of this document; Caltrans is continuing the process of implementing HOV lanes in to the Sacramento's freeway system. HOV lane projects on SR-51, I-5, and US-50 are planned to mitigate congestion on these routes. Further congestion mitigation can be achieved by 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 best possible ways to reduce delay in the impacted areas of District 3.