District 03 Mobility Performance Report

2019 Fourth Quarter

DEPARTMENT OF TRANSPORTATION

January 8, 2020
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 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 2019, the total delay on the freeways in District 3 equaled 1.58 million vehicle hours of delay (VHD) below the 35-mph speed threshold and 3.89 million VHD below 60-mph threshold. The average delay experienced on weekdays in this quarter was approximately 23,000 of VHD below 35-mph, and 56,000 of VHD below 60-mph. State Route (SR)-51 continues to be the worst performing freeway in District 3 with 317,667 of VHD caused by several severe bottlenecks.

Vehicle Miles of Travel (VMT) decreased by 3.5% with a total of 2.48 billion miles when compared to the previous quarter (2.57 billion miles). The VHD below the 60-mph speed threshold decreased by 4.5% during the same quarter. This relationship indicates the travel demand for the Sunday/Holiday has decreased. See graphs on page 5 for details.

Top Ten Bottlenecks for the Fourth 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	48	4.19	70,764	7,835
SR51-S	EB Exposition Bl	PM	3.33	3.326	61	2.09	49,997	9,635
SR99-S	EB Consumnes River	PM	290.68	16.23	61	2.27	45,995	13,240
SR51-N	Elvas UP	PM	2.41	2.406	54	2.71	43,473	6,200
SR70-E	North Beale Road	PM	20.15	13.524	47	3.89	34,905	5,835
US50-E	25th St	PM	5.28	L2.128	43	2.92	32,326	4,230
I80-E	NB Mace Blvd	PM	74.95	2.763	60	2.38	32,135	7,765
SR51-N	SB Watt Ave	PM	7.86	7.863	56	2.53	30,406	7,840
I5-S	S Land Park Dr	PM	512.06	16.771	59	1.75	28,682	10,640
I5-N	Jibboom St	PM	519.48	24.185	61	1.77	27,252	8,510

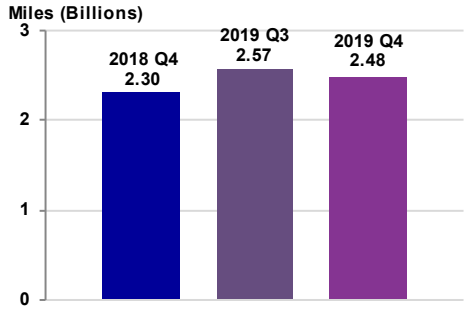
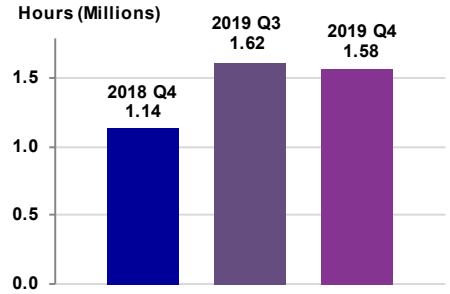
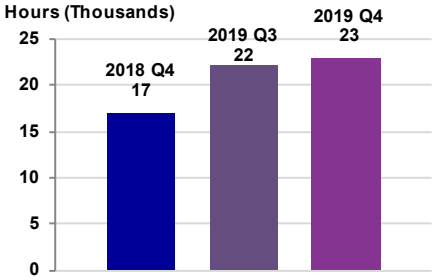
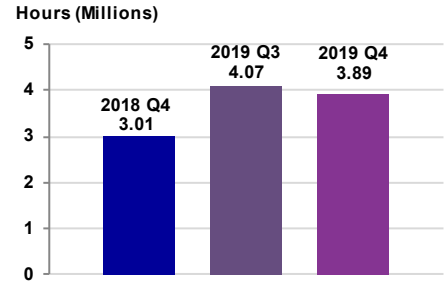
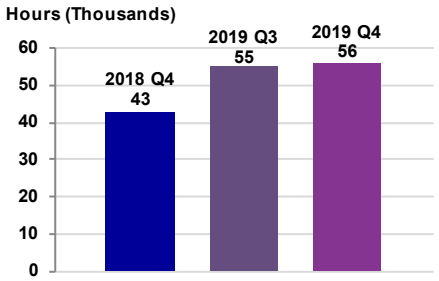
Notes:

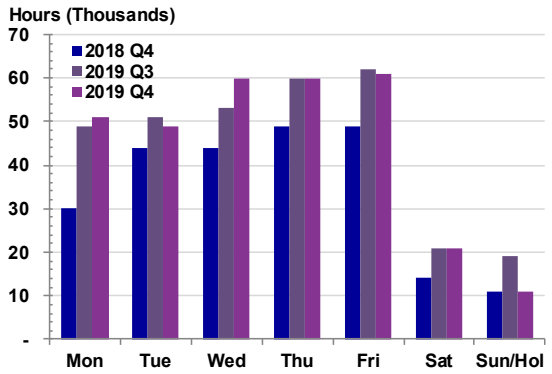
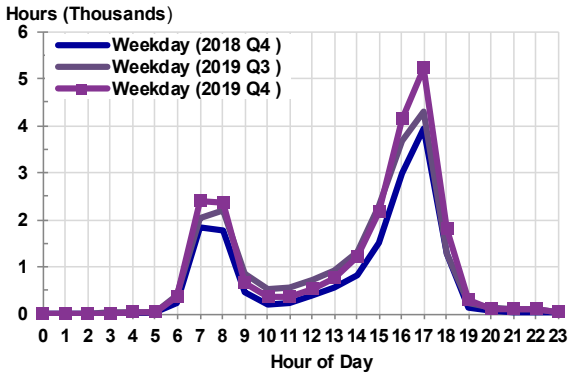
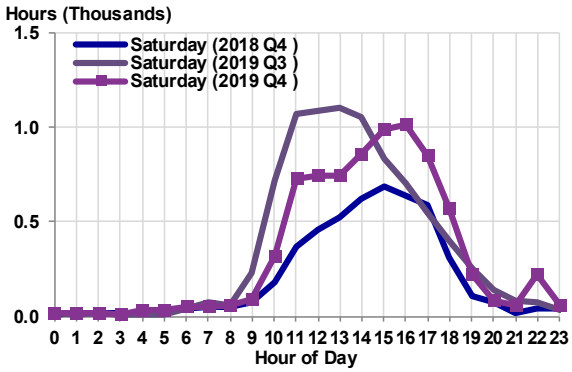
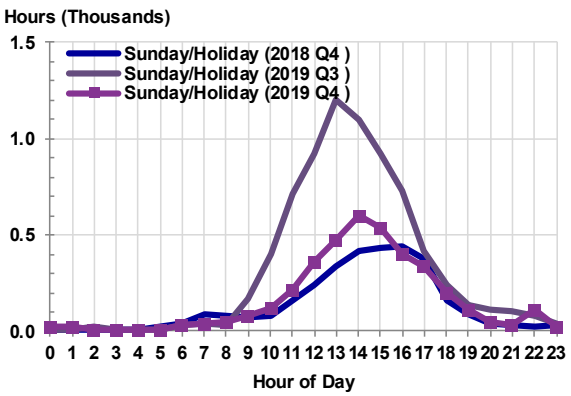
- For the table above, the quarterly delay calculation was based upon a 60-mph threshold, for the a.m. or p.m. weekday peak period.
- Sacramento I-5 HOV project is currently under construction. Due to the construction activities, the delay observed at I-5 SB Land Park Dr. has increased.
- In continued efforts to help relieve congestion and allow safe merging during high traffic demand periods, the California Department of Transportation (Caltrans) will update the

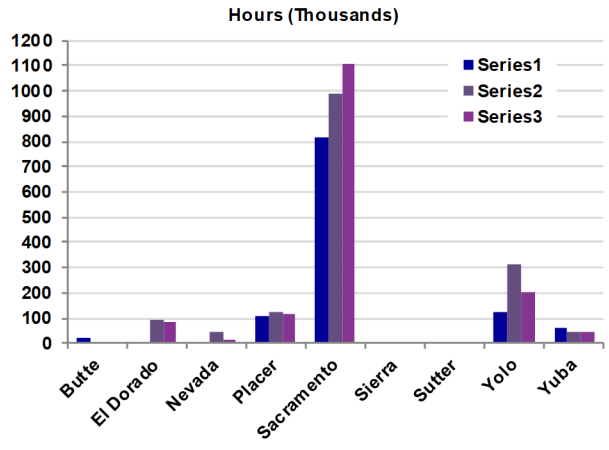
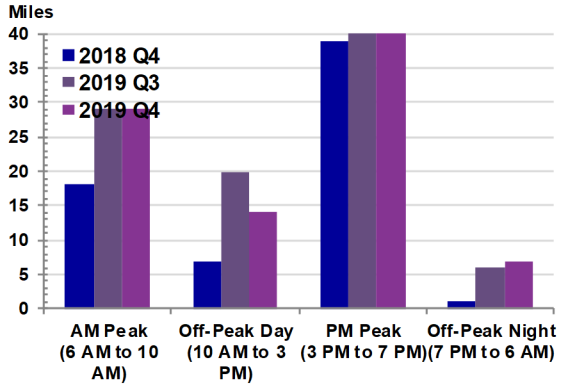
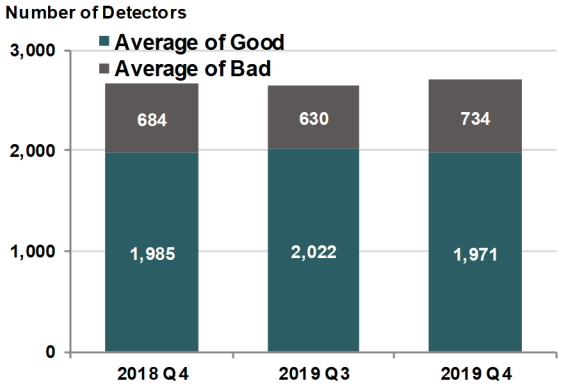
ramp metering operation hours on northbound SAC-99. These meters are tentatively scheduled to be updated on January 6, 2020. The metering hours will be based on traffic demand and will be activated 24/7, including holidays when minimum traffic thresholds are met. The ramp meters will be active every day including weekends and holidays.

- PLA-65 SB ramp meter operation has been upgraded to 24/7 on-demand ramp metering.
- Caltrans District 3 has plans to construct High Occupancy Vehicle (HOV) lanes on 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.
- 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	
		Over one year ago	Over last quarter
Vehicle Miles of Travel (VMT)		7.7%	-3.5%
Total Vehicle Hours of Delay (VHD) at 35 mph		38.7%	-2.4%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		38.7%	5.9%
Total Vehicle Hours of Delay (VHD) at 60 mph		29.2%	-4.5%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		29.7%	2.3%

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph		Largest Magnitude Decrease over one year ago N/A	Largest Magnitude Decrease over last quarter Sun/Hol -42.5%
		Largest Magnitude Increase over one year ago Monday 71.8%	Largest Magnitude Increase over last quarter Wednesday 14.3%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago 2 AM -13%	Largest Magnitude Weekday Decrease over last quarter 11 AM -35.2%
		Largest Magnitude Weekday Increase over one year ago 5 PM 32.5%	Largest Magnitude Weekday Increase over last quarter 5 PM 21.1%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 3 AM -17.2%	Largest Magnitude Saturday Decrease over last quarter 10 AM -55.8%
		Largest Magnitude Saturday Increase over one year ago 4 PM 56.8%	Largest Magnitude Saturday Increase over last quarter 4 PM 44.6%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 7 AM -56.4%	Largest Magnitude Sun./Holiday Decrease over last quarter 1 PM -61.3%
		Largest Magnitude Sun./Holiday Increase over one year ago 2 PM 45.6%	Largest Magnitude Sun./Holiday Increase over last quarter 10 PM 37.5%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago Butte -64.1%	Largest Magnitude Decrease over last quarter Yolo -33.6%
		Largest Magnitude Increase over one year ago Sacramento 35.6%	Largest Magnitude Increase over last quarter Sacramento 11.3%
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph		Largest Magnitude Decrease over one year ago N/A	Largest Magnitude Decrease over last quarter Off-Peak Day -28.1%
		Largest Magnitude Increase over one year ago PM Peak 55.2%	Largest Magnitude Increase over last quarter PM Peak 12.6%
Average Number of Good and Bad Detectors		Change in Good over one year ago -1%	Change in Good over last quarter -3%
		Change in Bad over one year ago 7%	Change in Bad over last quarter 16%

Note: As is identified by the detector health graph above, the District's detector health has declined. The graphs indicate a 3% 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 replaced/reactivated.

Congestion by Route

		Vehicle Hours of Delay at 35 mph			Difference 2019 Q4-2018 Q4		Difference 2019 Q4-2019 Q3		Rank		
Route	County	2018 Q4	2019 Q3	2019 Q4	Absolute	Percentage	Absolute	Percentage	2018 Q4	2019 Q3	2019 Q4
SR51	Sacramento	226,278	265,264	317,667	91,390	40.4%	52,403	19.8%	1	1	1
US50	Sacramento	176,889	233,019	261,781	84,892	48.0%	28,762	12.3%	2	2	2
SR99	Sacramento	175,462	207,990	233,485	58,024	33.1%	25,495	12.3%	4	5	3
I5	Sacramento	176,689	211,496	226,103	49,413	28.0%	14,607	6.9%	3	4	4
I80	Yolo	101,177	224,523	133,754	32,577	32.2%	-90,769	-40.4%	5	3	5
US50	El Dorado	3,832	92,989	85,757	81,925	2137.8%	-7,232	-7.8%	15	6	6
I80	Placer	70,159	87,802	66,925	-3,234	-4.6%	-20,877	-23.8%	6	7	7
I80	Sacramento	38,129	70,207	63,284	25,156	66.0%	-6,923	-9.9%	9	8	8
US50	Yolo	8,764	58,951	56,628	47,864	546.1%	-2,324	-3.9%	13	9	9
SR70	Yuba	58,367	47,472	48,005	-10,362	-17.8%	534	1.1%	7	10	10
SR65	Placer	38,319	32,892	47,495	9,177	23.9%	14,603	44.4%	8	12	11
I5	Yolo	13,287	26,173	15,510	2,223	16.7%	-10,662	-40.7%	12	13	12
I80	Nevada	8,004	46,671	12,800	4,796	59.9%	-33,871	-72.6%	14	11	13
SR99	Butte	23,418	4,012	8,414	-15,004	-64.1%	4,401	109.7%	10	15	14
SR12	Sacramento	430	4,557	1,639	1,210	281.4%	-2,917	-64.0%	17	14	15
SR160	Sacramento	21,220	634	1,595	-19,625	-92.5%	961	151.6%	11	19	16
SR89	Placer	0	1,372	1,151	1,151		-221	-16.1%		18	17
SR267	Placer	29	3,911	919	890	3081.0%	-2,992	-76.5%	19	16	18
SR99	Sutter	560	1,800	217	-343	-61.2%	-1,583	-87.9%	16	17	19
SR113	Yolo	399	547	138	-261	-65.3%	-408	-74.7%	18	20	20
SR28	Placer	0	3	3	3		0	0.0%		21	21
I80	Sierra	10	0	0	-10	-100.0%	0		20		
SR275	Yolo	0	0	0	0		0				
TOTALS		**1,141,420**	**1,622,282**	**1,583,270**	**441,850**	**38.7%**	**-39,012**	**-2.4%**			

The following routes had the highest rates of increase in delay in Q4 of 2019 when compared with the previous quarter (Q3 2019).

- SR 160 in Sacramento County at 151.6%
- SR 99 in Butte County at 109.7%
- SR 65 in Placer County at 44.4%

Analysis was done on the VMT for SR-160, SR-99, and SR-65, comparing Q4 vs Q3. The result was that the VMT for the three identified routes has decreased for Q4. This indicated that the traffic demand has been concentrated to commute hours, when congestion take place. The trend also can be observed on page 5, where the graphs show a significant increase in delay during AM and PM peak hours. The increasing employment rate could also be contributing to the congestion, as more traffic is concentrated around commute time.

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 increasing travel demand associated with Sacramento County's high 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 and 24/7 ramp meter operations for 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 the best possible ways to reduce delay in the impacted areas of District 3.