District 03 Mobility Performance Report

2020 First Quarter

DEPARTMENT OF TRANSPORTATION

May 6, 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 first quarter of 2020, the total delay on the freeways in District 3 equaled 1.07 million vehicle hours of delay (VHD) below the 35-mph speed threshold and 3.03 million VHD below 60-mph threshold. The average delay experienced on weekdays in this quarter was approximately 15,000 of VHD below 35-mph, and 43,000 of VHD below 60-mph. State Route (SR)-51 continues to be the worst performing freeway in District 3 with 204,126 of VHD caused by several severe bottlenecks.

Vehicle Miles of Travel (VMT) decreased by 9.5% with a total of 2.24 billion miles when compared to the previous quarter (2.57 billion miles). The VHD below the 60-mph speed threshold decreased by 22.1% during the same quarter. This relationship indicates the travel demand and delay has decreased because of the statewide Shelter-In-Place order which began on March 18th, 2020. See graphs on page 5 for details. It is anticipated the travel demand and delay will continue to drop for the coming quarter until the Shelter-In-Place order is lifted.

Top Ten Bottlenecks for the First Quarter of 2020

Fwy	Name	Shift	Abs PM	CA PM	# Days Active	Avg Extent (Miles)	Total Delay (veh-hrs)	Total Duration (mins)
SR99-S	Cosumnes Rd	PM	290.68	16.23	52	2.71	42,555	10,410
US50-W	6th ST	PM	3.78	L0.624	46	2.42	36,630	7,065
SR51-N	Elvas UP	PM	2.41	2.406	44	2.26	28,145	4,515
I80-E	80EB at Mace Blvd	PM	74.90	2.714	50	1.96	27,008	7,515
SR51-S	EB Exposition Bl	PM	3.33	3.326	42	1.75	26,424	6,590
US50-E	Missouri Flat Rd	PM	43.39	14.853	57	1.60	24,586	13,555
SR99-N	99NB at 47th Ave	AM	295.42	20.951	48	3.87	24,107	3,120
US50-W	15th St	PM	4.50	L1.345	37	2.85	22,515	2,690
I5-N	Jibboom St	PM	519.48	24.185	51	1.72	22,236	6,750
US50-E	25th St	PM	5.28	L2.128	35	3.05	21,955	3,285

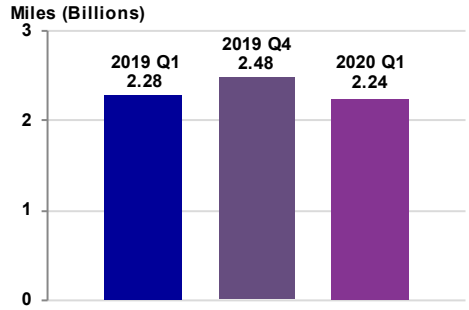
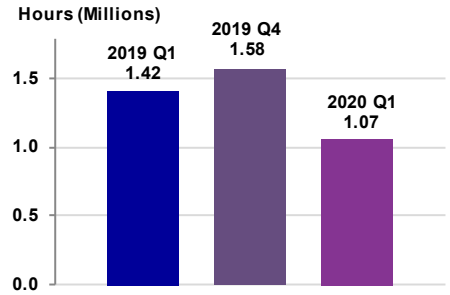
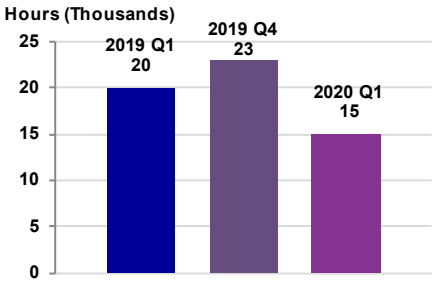
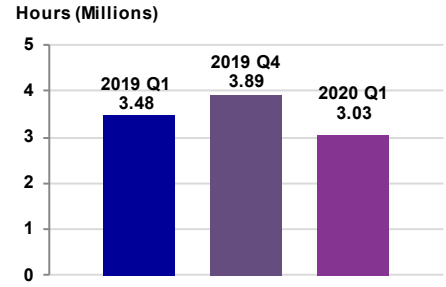
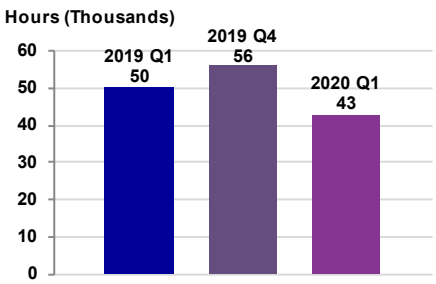
Notes:

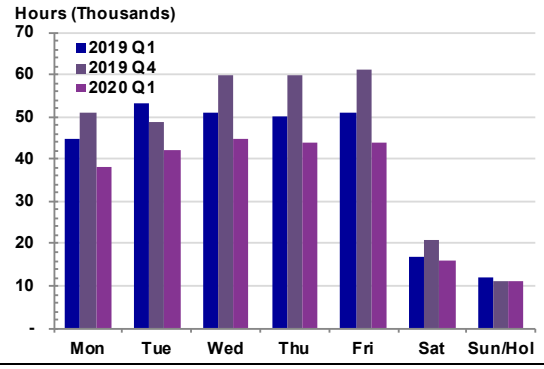
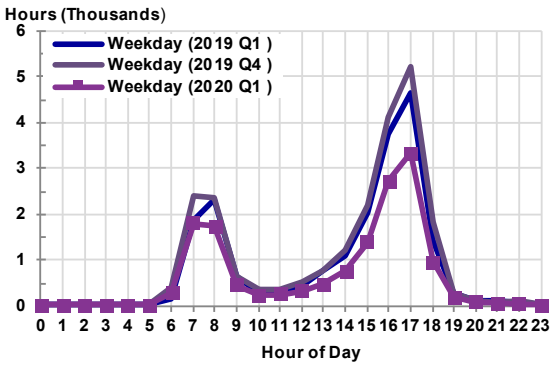
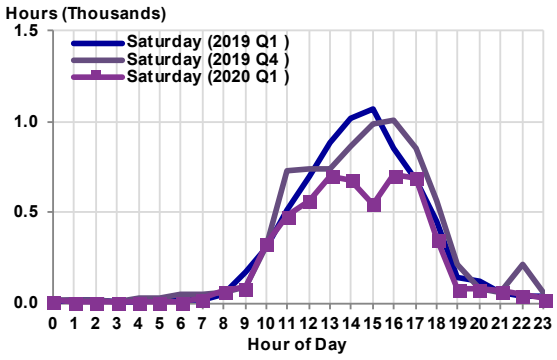
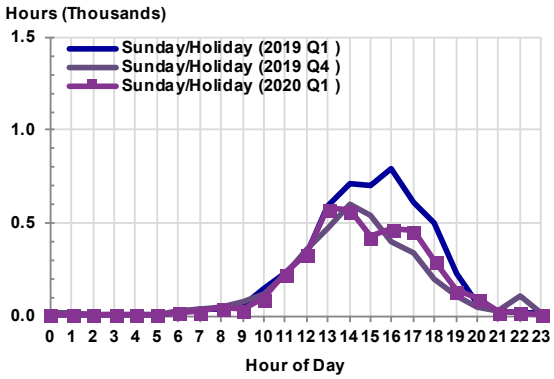
- For the table above, the quarterly delay calculation was based upon a 60-mph threshold, for the a.m. or p.m. weekday peak period.
- In continued efforts to help relieve congestion and allow safe merging during high traffic demand periods, the California Department of Transportation (Caltrans) has updated the ramp metering operation hours on northbound SAC-99. The metering hours will be based

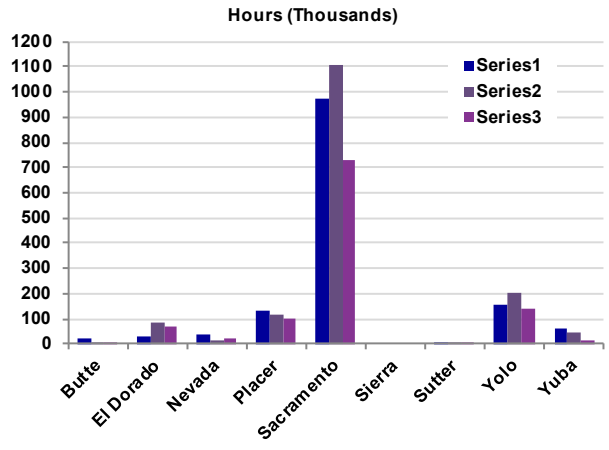
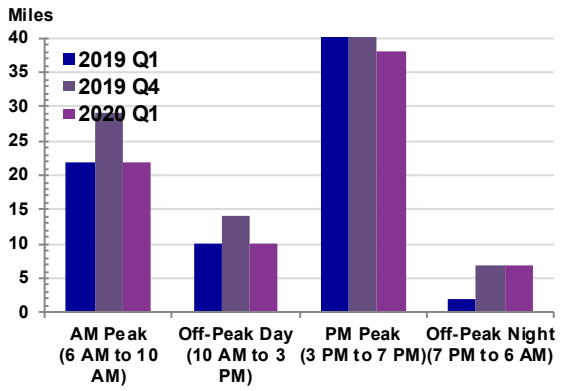
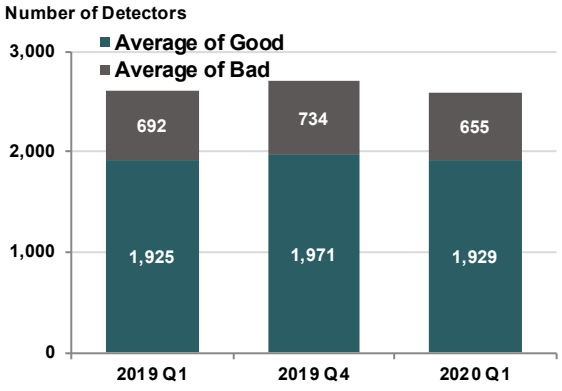
on traffic demand and will be activated 24/7, including holidays when minimum traffic thresholds are met. The ramp meters will be active every day including weekends and holidays.

- SR-51 an I-80 WB (Mace Blvd to Longview Dr) 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)		-1.5%	-9.5%
Total Vehicle Hours of Delay (VHD) at 35 mph		-25%	-32.5%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		-26.8%	-35.4%
Total Vehicle Hours of Delay (VHD) at 60 mph		-13%	-22.1%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		-14.9%	-23.9%

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph		Largest Magnitude Decrease over one year ago Tuesday -20.7%	Largest Magnitude Decrease over last quarter Friday -28.2%
		Largest Magnitude Increase over one year ago –	Largest Magnitude Increase over last quarter Sun/Hol 3.2%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago 5 PM -28.4%	Largest Magnitude Weekday Decrease over last quarter 5 PM -36.1%
		Largest Magnitude Weekday Increase over one year ago 6 AM 86%	Largest Magnitude Weekday Increase over last quarter –
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 3 PM -49%	Largest Magnitude Saturday Decrease over last quarter 3 PM -44.5%
		Largest Magnitude Saturday Increase over one year ago 10 AM 7.3%	Largest Magnitude Saturday Increase over last quarter 9 PM 26.8%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 4 PM -40.1%	Largest Magnitude Sun./Holiday Decrease over last quarter 3 PM -21.2%
		Largest Magnitude Sun./Holiday Increase over one year ago 8 PM 42.1%	Largest Magnitude Sun./Holiday Increase over last quarter 5 PM 36.4%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago Sacramento -25.1% Largest Magnitude Increase over one year ago El Dorado 143.7%	Largest Magnitude Decrease over last quarter Sacramento -33.8% Largest Magnitude Increase over last quarter Nevada 44.6%
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph		Largest Magnitude Decrease over one year ago PM Peak -16.1% Largest Magnitude Increase over one year ago Off-Peak Nigh 329.4%	Largest Magnitude Decrease over last quarter PM Peak -36.9% Largest Magnitude Increase over last quarter Off-Peak Nigh 8.2%
Average Number of Good and Bad Detectors		Change in Good over one year ago 0% Change in Bad over one year ago -5%	Change in Good over last quarter -2% Change in Bad over last quarter -11%

Note: As is identified by the detector health graph above, the District's detector health has declined. The graphs indicate a 2% 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.

Overall, congestion and delay has decrease significantly due to the Shelter-In-Place order, when compared with the previous quarter (Q4 2019). See table below for reference.

Congestion by Route

		Vehicle Hours of Delay at 35 mph			Difference 2020 Q1-2019 Q1		Difference 2020 Q1-2019 Q4		Rank		
Route	County	2019 Q1	2019 Q4	2020 Q1	Absolute	Percentage	Absolute	Percentage	2019 Q1	2019 Q4	2020 Q1
SR51	Sacramento	226,451	317,667	204,126	-22,325	-9.9%	-113,541	-35.7%	1	1	1
SR99	Sacramento	150,758	233,485	168,595	17,838	11.8%	-64,890	-27.8%	5	3	2
US50	Sacramento	222,369	261,781	159,516	-62,853	-28.3%	-102,265	-39.1%	2	2	3
I5	Sacramento	173,811	226,103	156,501	-17,310	-10.0%	-69,602	-30.8%	3	4	4
I80	Yolo	125,445	133,754	102,867	-22,578	-18.0%	-30,887	-23.1%	6	5	5
I80	Placer	87,781	66,925	64,518	-23,263	-26.5%	-2,407	-3.6%	7	7	7
I80	Sacramento	40,901	63,284	41,430	529	1.3%	-21,854	-34.5%	10	8	8
US50	Yolo	12,488	56,628	32,393	19,905	159.4%	-24,234	-42.8%	15	9	9
SR65	Placer	41,004	47,495	31,675	-9,329	-22.8%	-15,821	-33.3%	9	11	10
I80	Nevada	39,992	12,800	18,514	-21,478	-53.7%	5,714	44.6%	11	13	11
SR70	Yuba	63,205	48,005	10,462	-52,742	-83.4%	-37,543	-78.2%	8	10	12
I5	Yolo	20,566	15,510	4,653	-15,913	-77.4%	-10,858	-70.0%	14	12	13
SR99	Butte	22,074	8,414	2,534	-19,540	-88.5%	-5,880	-69.9%	13	14	14
SR267	Placer	4,194	919	1,823	-2,372	-56.5%	903	98.3%	16	18	15
SR89	Placer	2,920	1,151	1,177	-1,743	-59.7%	26	2.3%	17	17	16
SR89	El Dorado	0	0	1,127	1,127		1,127				17
SR12	Sacramento	787	1,639	785	-2	-0.3%	-854	-52.1%	18	15	18
SR160	Sacramento	162,064	1,595	750	-161,314	-99.5%	-845	-53.0%	4	16	19
SR113	Yolo	153	138	91	-62	-40.4%	-47	-34.1%	20	20	20
SR99	Sutter	564	217	10	-554	-98.3%	-208	-95.6%	19	19	21
SR28	Placer	2	3	3	1	30.0%	0	0.0%	21	21	22
I80	Sierra	0	0	0	0	-100.0%	0		22		
SR275	Yolo	0	0	0	0		0				
TOTALS		**1,424,620**	**1,583,270**	**1,068,457**	**-356,163**	**-25.0%**	**-514,813**	**-32.5%**			

As indicated by the table above the Total Delay for all monitored routes has decreased by 514,813 hours, a reduction of 32.5% when compared with previous quarter.

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 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.