District 03 Mobility Performance Report

2019 First Quarter

DEPARTMENT OF TRANSPORTATION

May 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 first quarter of 2019, the total delay on the on freeways in District 3 equaled 1.42 million vehicle hours of delay (VHD) below the 35-mph speed threshold and 3.48 million VHD below 60-mph threshold. The average delay experienced on weekdays in this quarter was approximately 20,000 of VHD below 35-mph, and 50,000 of VHD below 60-mph. State Route (SR)-51 continues to be the worst performing freeway in District 3 with 226,451 of VHD caused by several severe bottlenecks.

Vehicle Miles of Travel (VMT) decreased 1.1% when compared to the previous quarter. On the other hand, the VHD below the 60-mph speed threshold increased 15.7% during the same quarter. This relationship indicates the travel demand is more concentrated on weekdays during the commute periods, see graphs on page 5 for details.

Top Ten Bottlenecks for the First 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	53	3.54	55,400	6,520
SR70-E	North Beale Road	PM	20.15	13.524	58	3.90	50,843	8,065
SR99-N	WB 47th Ave	AM	295.42	20.951	55	4.01	43,437	5,525
SR51-S	EB Exposition Bl	PM	3.33	3.326	61	1.44	36,272	13,240
SR51-N	North of A St	PM	2.09	2.092	58	1.60	32,357	8,170
SR51-N	SB Watt Ave	PM	7.86	7.863	60	2.02	31,577	9,075
I80-E	NB Mace Blvd	PM	74.95	2.763	60	2.11	28,619	7,960
SR99-N	Skyway Rd	PM	376.30	R30.744	39	5.00	27,307	3,285
I5-S	L St	PM	518.83	23.533	59	2.02	25,798	6,150
SR65-S	Galleria Blvd	PM	65.70	R5.983	37	3.06	22,458	6,830

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.

- Caltrans District 3 has plans to construct High Occupancy Vehicle (HOV) lanes on I-5, US-50, SR-51, and I-80 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.

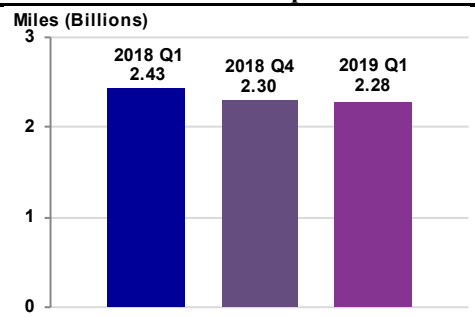
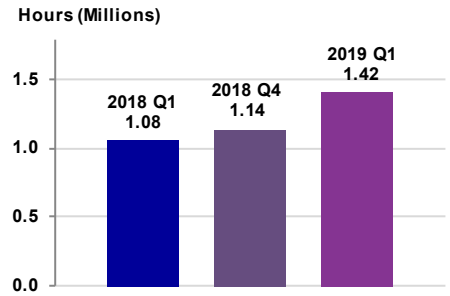
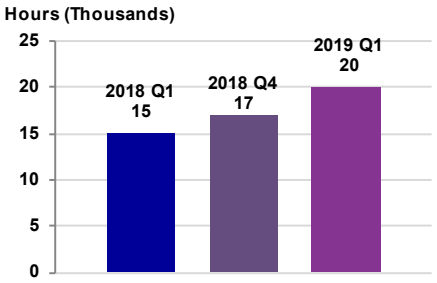
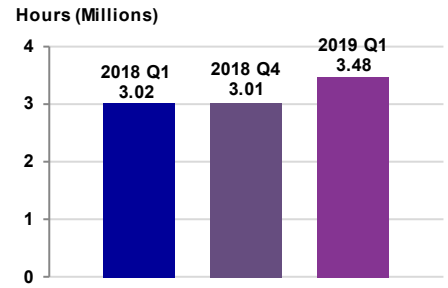
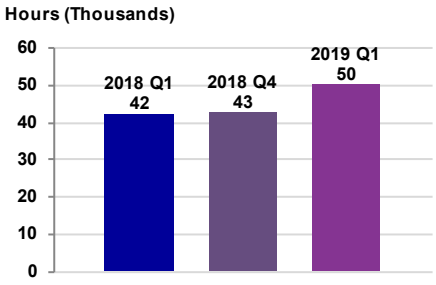
- The HOV lane projects on I-5 and US-50 were nominated for SB-1 funding in 2017. The project on SR 65/I-80 interchange is currently under construction for Phase 1. This phase includes reconstructing the WB I-80 connector to NB SR-65 to increase capacity and includes reconstructing the Stanford Ranch/Galleria IC improvements. The remainder of the SR 65 project is not currently funded. The project on SR 51 is currently pursuing full funding for PA&ED.

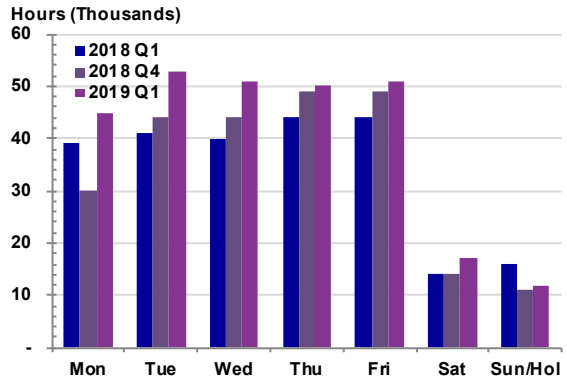
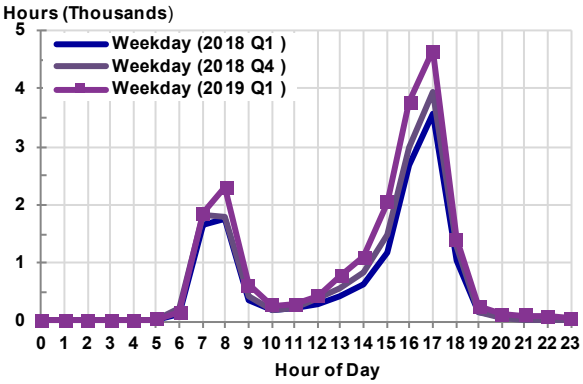
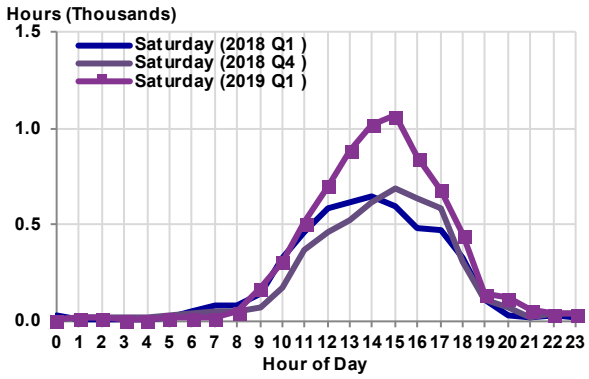
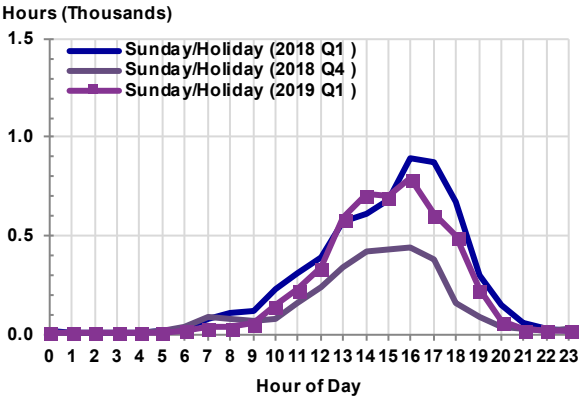
- Caltrans has an emergency Ramp Meter project on Skyway Rd/NB-99 interchange to address the congestion caused by the surge of population in City of Chico.

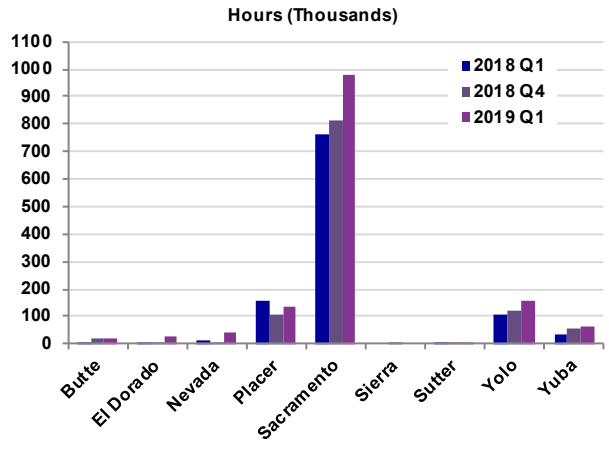
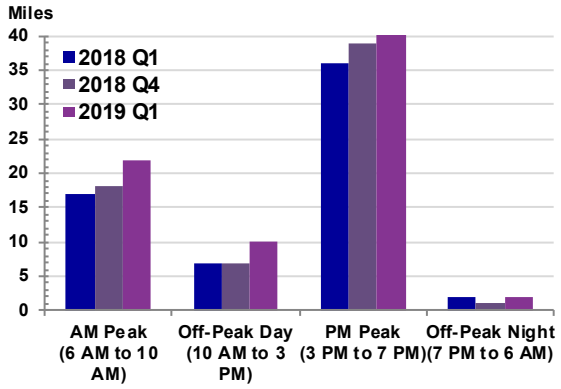
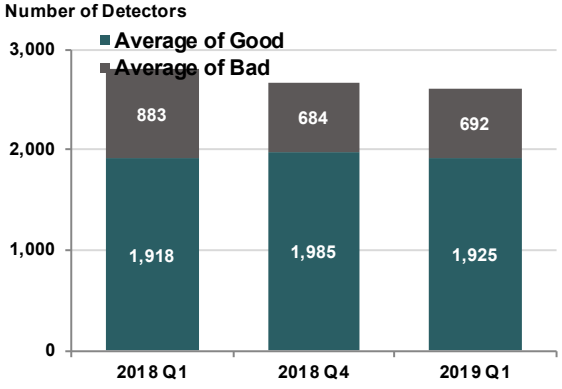
- There are currently no projects planned to address the bottleneck at SR70-E North Beale Rd.

- 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)		-6.3%	-1.1%
Total Vehicle Hours of Delay (VHD) at 35 mph		32.5%	24.8%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		38.6%	22.5%
Total Vehicle Hours of Delay (VHD) at 60 mph		15.3%	15.7%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		20.3%	16.1%

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph		Largest Magnitude Decrease over one year ago Sun/Hol -25.1%	Largest Magnitude Decrease over last quarter – N/A
		Largest Magnitude Increase over one year ago Tuesday 28.2%	Largest Magnitude Increase over last quarter Monday 51.9%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago 12 AM -28.4%	Largest Magnitude Weekday Decrease over last quarter 6 AM -30%
		Largest Magnitude Weekday Increase over one year ago 4 PM 41.1%	Largest Magnitude Weekday Increase over last quarter 4 PM 25.7%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 7 AM -70.3%	Largest Magnitude Saturday Decrease over last quarter 7 AM -46.1%
		Largest Magnitude Saturday Increase over one year ago 3 PM 79.1%	Largest Magnitude Saturday Increase over last quarter 2 PM 63.3%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 5 PM -29.6%	Largest Magnitude Sun./Holiday Decrease over last quarter 7 AM -61.5%
		Largest Magnitude Sun./Holiday Increase over one year ago 2 PM 15.8%	Largest Magnitude Sun./Holiday Increase over last quarter 4 PM 81.3%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago Placer -13.4%	Largest Magnitude Decrease over last quarter Butte -5.7%
		Largest Magnitude Increase over one year ago Sacramento 28.6%	Largest Magnitude Increase over last quarter Sacramento 19.9%
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph		Largest Magnitude Decrease over one year ago Off-Peak Night -24.5%	Largest Magnitude Decrease over last quarter N/A
		Largest Magnitude Increase over one year ago PM Peak 28.8%	Largest Magnitude Increase over last quarter PM Peak 16.6%
Average Number of Good and Bad Detectors		Change in Good over one year ago 0%	Change in Good over last quarter -3%
		Change in Bad over one year ago -22%	Change in Bad over last quarter 1%

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.

Congestion by Route											
		Vehicle Hours of Delay at 35 mph			Difference 2019 Q1-2018 Q1		Difference 2019 Q1-2018 Q4		Rank		
Route	County	2018 Q1	2018 Q4	2019 Q1	Absolute	Percentage	Absolute	Percentage	2018 Q1	2018 Q4	2019 Q1
SR51	Sacramento	215,830	226,278	226,451	10,621	4.9%	173	0.1%	1	1	1
US50	Sacramento	161,354	176,889	222,369	61,015	37.8%	45,480	25.7%	3	2	2
I5	Sacramento	176,490	176,689	173,811	-2,679	-1.5%	-2,878	-1.6%	2	3	3
SR160	Sacramento	11,419	21,220	162,064	150,645	1319.3%	140,844	663.7%	12	11	4
SR99	Sacramento	153,084	175,462	150,758	-2,326	-1.5%	-24,704	-14.1%	4	4	5
I80	Yolo	78,922	101,177	125,445	46,523	58.9%	24,268	24.0%	6	5	6
I80	Placer	112,382	70,159	87,781	-24,601	-21.9%	17,622	25.1%	5	6	7
SR70	Yuba	35,206	58,367	63,205	27,999	79.5%	4,837	8.3%	9	7	8
SR65	Placer	44,362	38,319	41,004	-3,358	-7.6%	2,685	7.0%	7	8	9
I80	Sacramento	41,630	38,129	40,901	-729	-1.8%	2,772	7.3%	8	9	10
I80	Nevada	14,000	8,004	39,992	25,993	185.7%	31,988	399.6%	11	14	11
US50	El Dorado	3,223	3,832	27,093	23,870	740.5%	23,261	607.0%	13	15	12
SR99	Butte	650	23,418	22,074	21,424	3293.9%	-1,344	-5.7%	16	10	13
I5	Yolo	911	13,287	20,566	19,655	2158.2%	7,278	54.8%	14	12	14
US50	Yolo	24,660	8,764	12,488	-12,172	-49.4%	3,724	42.5%	10	13	15
SR267	Placer	151	29	4,194	4,044	2687.0%	4,166	14413.5%	17	19	16
SR89	Placer	0	0	2,920	2,920		2,920				17
SR12	Sacramento	0	430	787	787		357	83.1%		17	18
SR99	Sutter	7	560	564	557	7624.7%	4	0.7%	18	16	19
SR113	Yolo	853	399	153	-700	-82.1%	-246	-61.6%	15	18	20
SR28	Placer	0	0	2	2		2				21
I80	Sierra	0	10	0	0		-10	-99.0%		20	22
SR275	Yolo	0	0	0	0		0				
TOTALS		**1,075,133**	**1,141,420**	**1,424,620**	**349,487**	**32.5%**	**283,200**	**24.8%**			

The following routes had the highest rates of increase in delay in Q1 of 2019 when compared with the previous quarter (Q4 2018).

- SR 267 in Placer County at 14413.5%
- SR 160 in Sacramento County 663.7%
- US 50 in El Dorado County at 607.0 %
- I-80 in Nevada County at 399.6%

The cause of the increase in delay at Placer 267 can be mostly attributed to the new installation of detector stations on the State Route in Placer county.

The cause of the increase in delay at Sacramento 160 can be attributed to a mistake in the GPS coordination of VDS 314159. It is anticipated the actual location for the VDS is near the freeway to freeway connector of SR 51/SR 160. The actual congestion could take place on SR 51. The request to perform an investigation for this VDS has been created and sent to our Electrical System unit.

The cause of the increase in delay at El Dorado US-50 and Nevada I-80 can be attributed to repaired detector stations that were damaged by AC overlay projects on the freeways.

Based on the total delay by route, SR-51 continues to be the worst performing freeway in District 3. The top 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.