District 06 Mobility Performance Report

2017 Fourth Quarter

DEPARTMENT OF TRANSPORTATION

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2017 Fourth Quarter

EXECUTIVE SUMMARY

Overview

Caltrans District 6 is geographically diverse district and the third largest of the 12 Districts statewide, stretching from the southernmost part of Yosemite National Park in the north to the Mojave Desert. It includes Madera, Fresno, Tulare, Kings and Kern counties. District 6 maintains and operates of 476 miles of freeway and 1,554 miles of rural and urban highway. The District has the largest portion of road miles to maintain in the state highway system with 2,030 miles.

The Mobility Performance quarterly analysis compares information with over a year ago and over last quarter in the following performance measures:

- Vehicle Miles of Travel (VMT))
- Vehicle Hours of Delay (VHD)
- Lost Lane Miles (equivalent lost productivity)
- Detector Health

This information is based on the continuous data collected by automated vehicle detector stations deployed on urban-area freeways with recurrent congestion. The MPR presents congestion delay information at 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. These thresholds are set by Caltrans and are based on engineering experience and District input.

FINDINGS

In the fourth quarter of 2017, the total delay equaled 354 thousands Vehicle Hours of Delay (VHD) at the 35 mph speed threshold, and 1,549 thousands VHD at the 60 mph threshold. The average weekday delay experienced in this quarter was approximately 4,149 VHD at 35 mph, and 20 thousand VHD at 60 mph.

The VHD in this quarter experienced an overall increase of 34.4% compared to the previous quarter. However the experience for each route showed variation (increase and decrease).

The holiday traffic contributed to overall increase of VHD, especially in City of Fresno (SR 99 & SR 41, Fresno County) and City of Bakersfield (SR 99, Kern County) metropolitan area.

The increased VHD on Interstate 5 in Fresno County could be related to several detectors that malfunctioned on third quarter were back on-line on this quarter.

The increased VHD on Interstate 5 in Kings County could be related to several detectors that malfunctioned on third quarter were back on-line on this quarter.

The decreased VHD on State Route 46 in Kern County could be related to malfunctioning detectors. The detectors were providing non-consistent data.

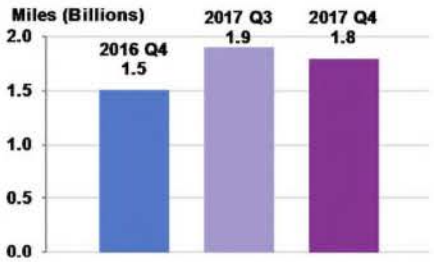
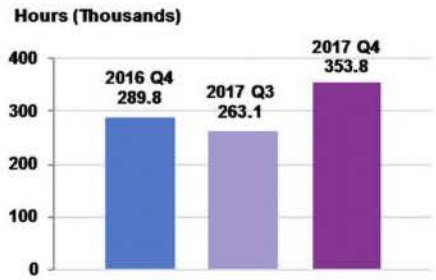
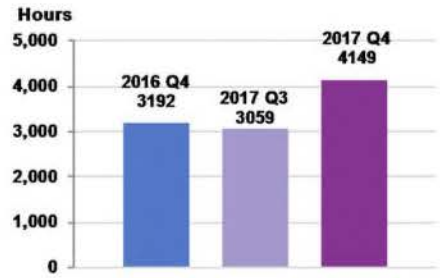
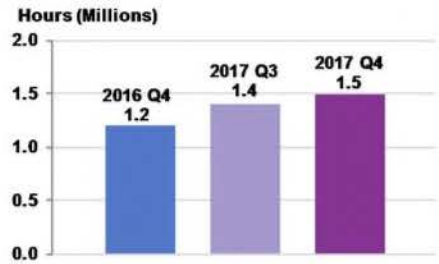
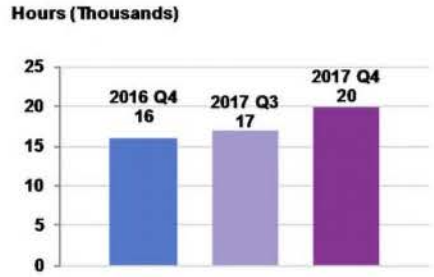
There was 1 bottleneck location reported within the District 6 Highway system. The bottleneck reported include bottleneck location that was active on at least 20 percent of all weekdays during the quarter, persisted for at least 15 minutes on average, and caused more than 100 vehicle hours of delay (VHD) per weekday.

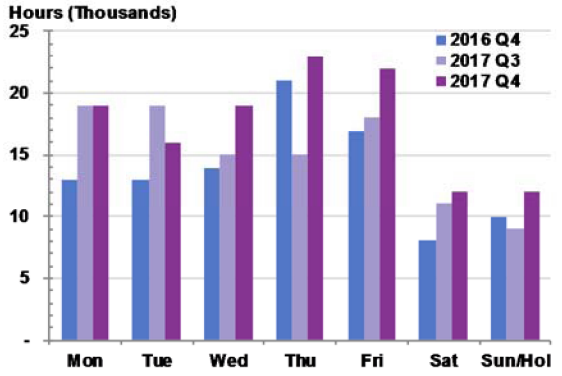
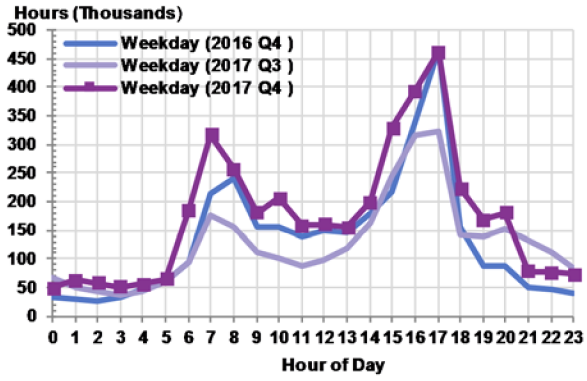
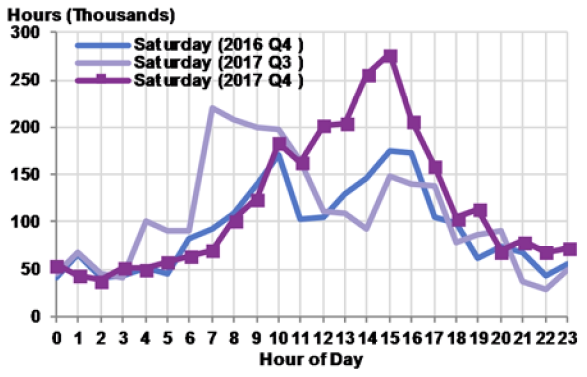
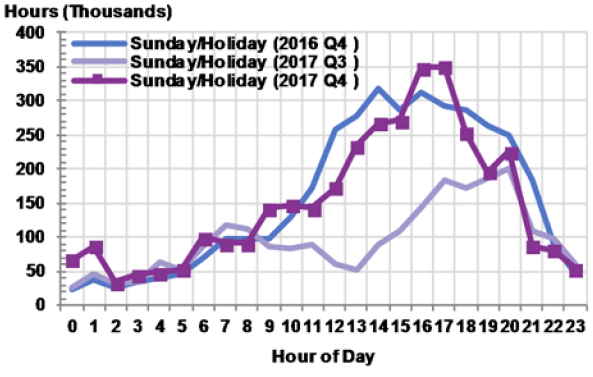
Location									Bottleneck Characteristics			
VDS	Name	Type	Shift	Fwy	Abs PM	CA PM	Latitude	Longitude	# Days Active	Avg Extent (Miles)	Avg Delay (veh-hrs)	Avg Duration (mins)
602732	I5 NB NORTH OF COALINGA-MENDOTA	ML	AM	I5-S	344.302	25.501	36.383302	-120.347461	35	3.5	132.4	101.6
602732	I5 NB NORTH OF COALINGA-MENDOTA	ML	PM	I5-S	344.302	25.501	36.383302	-120.347461	34	3.6	123.8	66.9

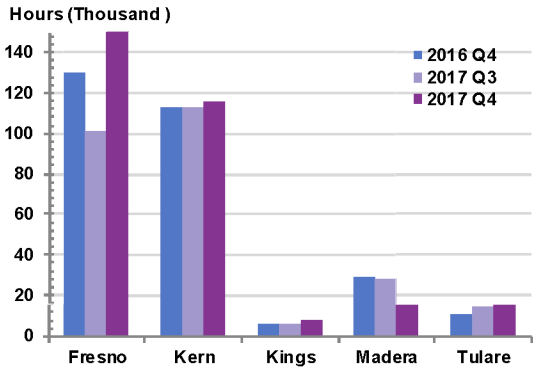
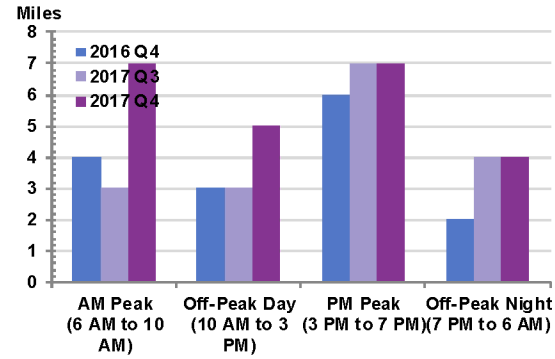
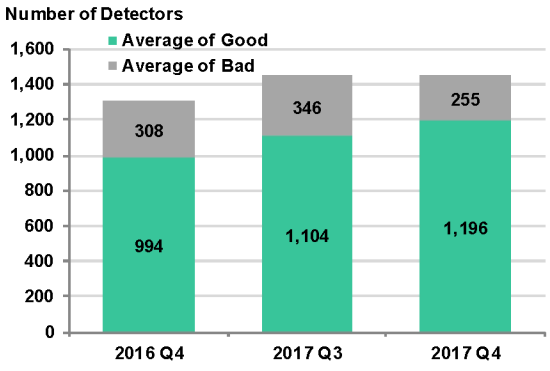
Manual investigation of the data and site condition were performed and errors were found on the reporting. False reporting on VDS station 602732. This station had been intermittently providing insufficient data in the fourth quarter and been permanently down since 12/12/2017.

In conclusion, there are no bottlenecks identified within the District 6 Highway system.

Quarterly Mobility Statistics

Measure	Graph	Percentage Change	
		Over one year ago	Over last quarter
Vehicle Miles of Travel (VMT)		20.9% ⇧	-3.5% ⇩
Total Vehicle Hours of Delay (VHD) at 35 mph		22.1% ↑	34.4% ↑
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		30% ↑	35.6% ↑
Total Vehicle Hours of Delay (VHD) at 60 mph		24.7% ↑	13.5% ↑
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		24.4% ↑	14.2% ↑

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 Tuesday -13.9%
		Largest Magnitude Increase over one year ago Monday 54%	Largest Magnitude Increase over last quarter Thursday 48.2%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago 5 PM -1%	Largest Magnitude Weekday Decrease over last quarter 9 PM -40.1%
		Largest Magnitude Weekday Increase over one year ago 3 PM 50.7%	Largest Magnitude Weekday Increase over last quarter 7 AM 78.3%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 1 AM -33.7%	Largest Magnitude Saturday Decrease over last quarter 7 AM -68.1%
		Largest Magnitude Saturday Increase over one year ago 2 PM 75.7%	Largest Magnitude Saturday Increase over last quarter 2 PM 175.8%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 9 PM -52.5%	Largest Magnitude Sun./Holiday Decrease over last quarter 7 AM -21.8%
		Largest Magnitude Sun./Holiday Increase over one year ago 5 PM 19.4%	Largest Magnitude Sun./Holiday Increase over last quarter 4 PM 142%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago Madera -48.1%	Largest Magnitude Decrease over last quarter Madera -45.4%
		Largest Magnitude Increase over one year ago Fresno 52.9%	Largest Magnitude Increase over last quarter Fresno 96.7%
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 Off-Peak Night -0.3%
		Largest Magnitude Increase over one year ago AM Peak 71.6%	Largest Magnitude Increase over last quarter AM Peak 99.8%
Average Number of Good and Bad Detectors		Change in Good over one year ago 20%	Change in Good over last quarter 8%
		Change in Bad over one year ago -17%	Change in Bad over last quarter -26%

Congestion by Route											
		Vehicle Hours of Delay at 35 mph			Difference 2017 Q4-2016 Q4		Difference 2017 Q4-2017 Q3		Rank		
Route	County	2016 Q4	2017 Q3	2017 Q4	Absolute	Percentage	Absolute	Percentage	2016 Q4	2017 Q3	2017 Q4
I5	Fresno	23,787	30,305	103,514	79,728	335.2%	73,210	241.6%	7	3	1
SR99	Kern	32,163	27,818	64,770	32,607	101.4%	36,952	132.8%	3	5	2
I5	Kern	48,015	65,652	46,964	-1,051	-2.2%	-18,688	-28.5%	2	1	3
SR99	Fresno	58,173	31,593	45,197	-12,976	-22.3%	13,604	43.1%	1	2	4
SR41	Fresno	31,975	27,149	38,964	6,989	21.9%	11,815	43.5%	4	6	5
SR99	Tulare	11,156	14,545	15,989	4,834	43.3%	1,445	9.9%	9	7	6
SR99	Madera	29,475	28,182	15,397	-14,078	-47.8%	-12,785	-45.4%	5	4	7
I5	Kings	3,231	887	4,538	1,307	40.5%	3,652	411.9%	11	15	8
SR180S	Fresno	0	3,019	4,288	4,288		1,269	42.0%		13	9
SR58	Kern	7,740	5,806	3,535	-4,205	-54.3%	-2,271	-39.1%	10	9	10
SR180	Fresno	13,729	4,785	3,534	-10,195	-74.3%	-1,251	-26.1%	8	10	11
SR168S	Fresno	2,254	4,186	3,203	949	42.1%	-983	-23.5%	12	11	12
SR198	Kings	2,181	2,069	2,382	202	9.3%	314	15.2%	13	14	13
SR41	Kings	985	3,200	1,150	165	16.8%	-2,051	-64.1%	14	12	14
SR198	Tulare	150	754	295	146	97.3%	-459	-60.8%	16	16	15
SR178	Kern	1	174	20	19	2387.5%	-154	-88.6%	19	17	16
SR46	Kern	24,525	12,984	9	-24,516	-100.0%	-12,975	-99.9%	6	8	17
SR152	Madera	13	2	0	-13	-98.4%	-2	-91.3%	17	18	18
SR168	Fresno	8	0	0	-8	-100.0%	0		18		
SR41	Madera	195	0	0	-195	-100.0%	0		15		
TOTALS		**289,754**	**263,110**	**353,751**	**63,997**	**22.1%**	**90,640**	**34.4%**			

Vehicle Hours of Delay is in Hours (Thousand)