District 06
Mobility Performance Report

2021 Fourth Quarter

DEPARTMENT OF TRANSPORTATION

January 28, 2021
: D06 – Traffic Operations

2021 Fourth Quarter

EXECUTIVE SUMMARY

Overview

Caltrans District 6 is geographically diverse, and the second largest of the 12 Districts statewide, stretching from the southernmost part of Yosemite National Park in the north to the Mojave Desert. Also referred to as the Central Valley, District 6 encompasses Madera, Fresno, Tulare, Kings, and Kern counties. District 6 maintains and operates 476 miles of freeway and 1,554 miles of rural and urban highway. This District has the largest portion of road miles to maintain in the state highway system with 2,030 miles. Interstate 5 and State Route 99 span District 6, connecting the Central Valley to Northern and Southern California. These two routes and many others support substantial truck traffic for the agricultural base of the region.

The Mobility Performance Report (MPR) quarterly analysis compares current data with information from the same quarter of the previous year, and from the previous quarter using 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 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 miles per hour (mph). The delay at the 35 miles per hour (mph) threshold represents severe congestion while delay at 60 mph represents all congestion. The criteria for speed thresholds are set by Caltrans and are based on engineering experience and District input.

FINDINGS

In the fourth quarter, total delay equaled 364,200 vehicle hours of delay (VHD) at the 35mph speed threshold, which decreases slightly about 5.1 percent compare to last quarter (third quarter). The average (non-holiday) weekday of vehicle hours of delay experienced in this quarter was approximately 3997 VHD at 35mph speed threshold. Total delay reported at approximately 1.8 million VHD at 60mph speed threshold, which slightly increase about 3.1 percent compare to previous quarter. The average (non-holiday) weekday of vehicle hours of delay was reported as 21,000 VHD at 60mph speed threshold, which about the same as last quarter. Kern and Fresno Counties experienced the largest delay in the District.

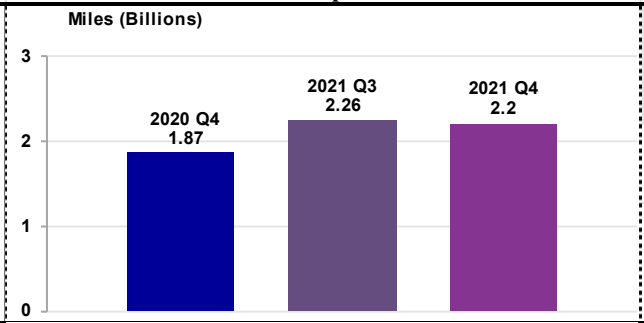
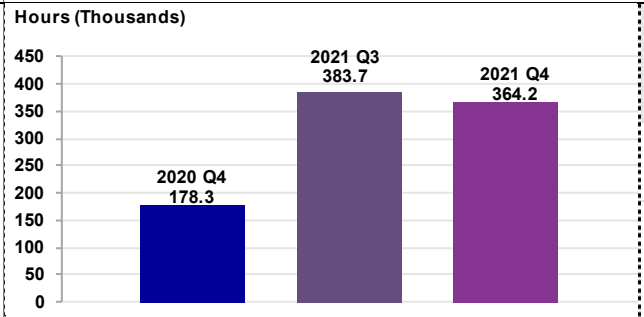
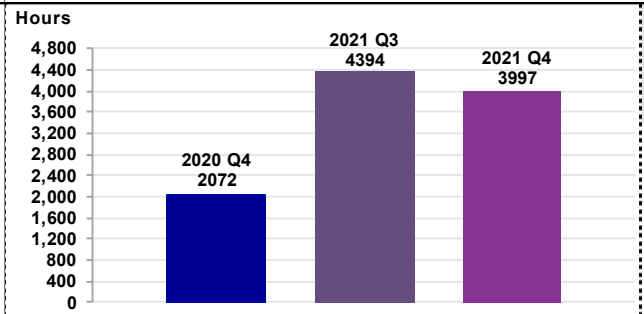
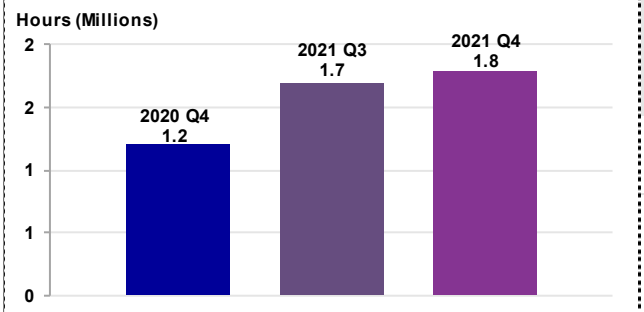
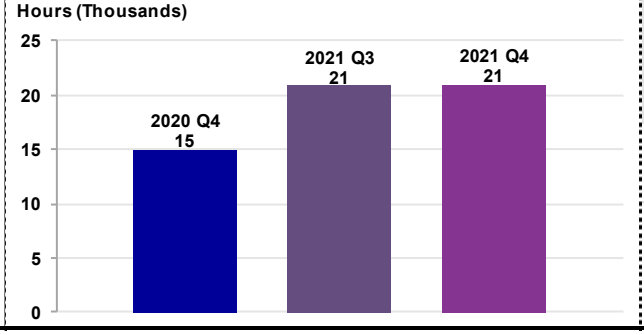
For this quarter, PEMS reported the change in good detectors decreases approximately 4 percent comparing to the last quarter. As far as change in percentage of bad detectors, PEMS reports approximately 20 percent increase in bad detectors compare to last quarter. The average number of good as well as bad detectors are illustrated in the graph at the end of this report.

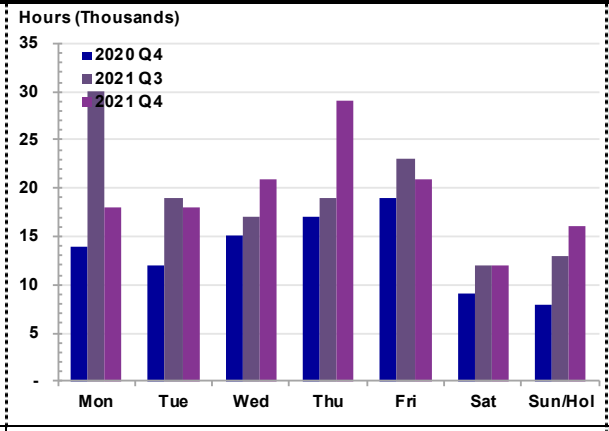
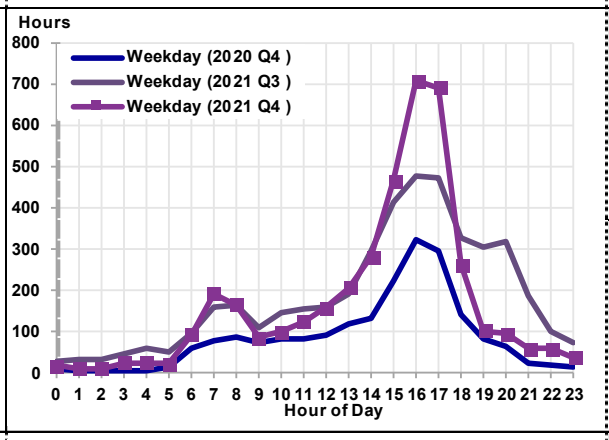
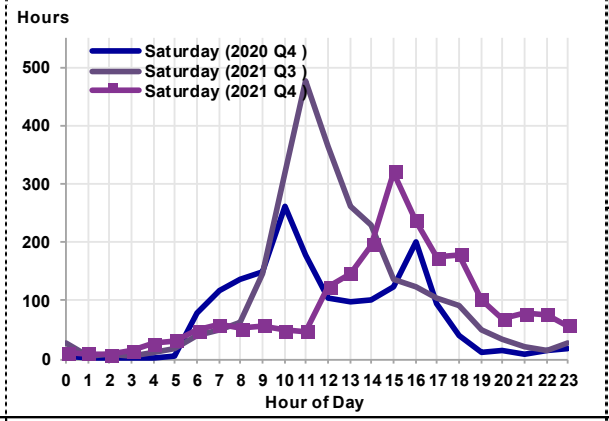
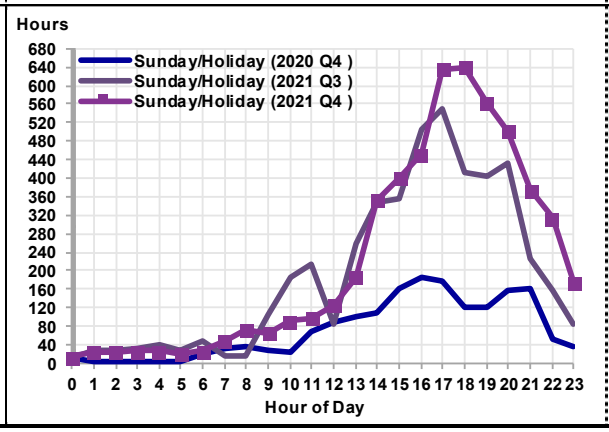
Top Ten Bottlenecks for Quarter 4

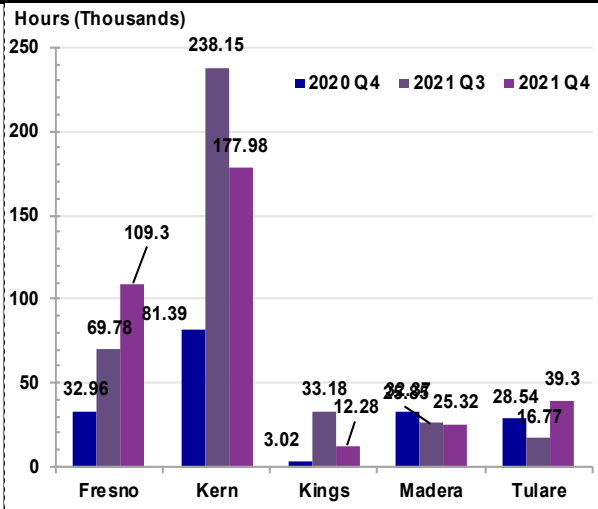
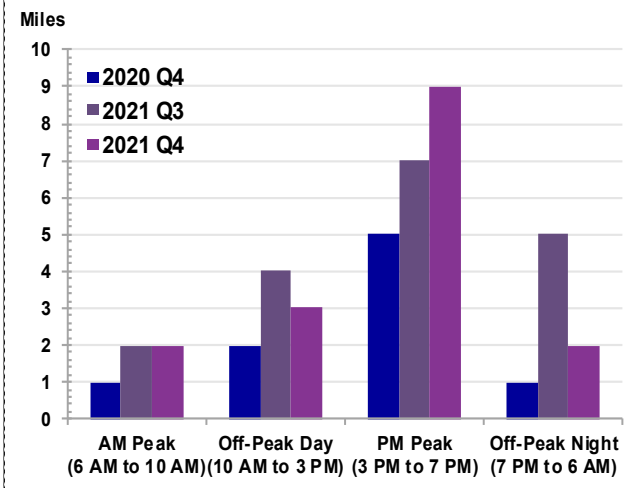
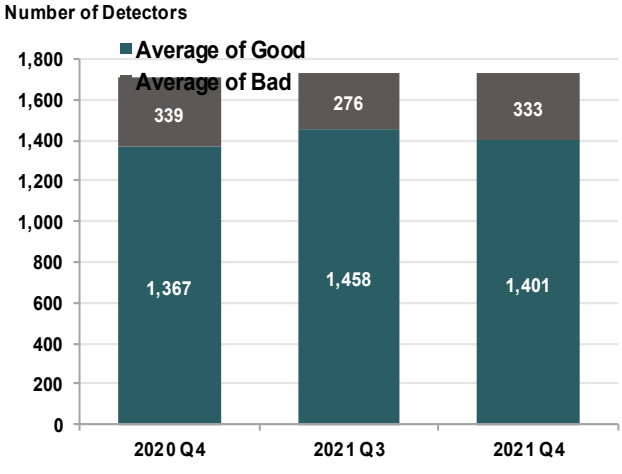
County	Fwy	Locations	Type	Shift	Abs PM	CA PM	Latitude	Longitude	# Days Active	Avg Extent (Miles)	Avg Delay (Veh-hrs)	Avg Duration (mins)
Kern	58 W	H St	ML	PM	110.13	R53.307	35.35	-119.02	51	1.72	112.37	89.80
Fresno	41 S	Barstow Avenue	ML	PM	130.74	R28.982	36.82	-119.79	21	0.88	102.02	55.95
Kern	99 S	N.O Olive Dr.	ML	PM	29.02	R28.201	35.42	-119.06	29	2.10	347.99	123.10
Fresno	41 S	Shaw Ave	ML	PM	130.15	R28.395	36.81	-119.79	58	0.98	219.76	118.10
Kern	99 S	S.O SR 65	ML	PM	29.99	R29.171	35.43	-119.07	44	1.76	321.96	101.36
Fresno	41 N	Ashlan Ave.	ML	PM	129.30	R27.55	36.80	-119.78	39	0.95	114.95	99.92
Fresno	99 S	Olive Ave.	ML	PM	135.53	23.21	36.76	-119.83	44	1.41	175.43	78.18
Fresno	99 N	Nielsen Ave.	ML	PM	134.65	22.31	36.75	-119.82	54	0.73	121.97	110.46
Fresno	41 N	McKinley	ML	PM	127.09	R25.3405	36.77	-119.78	56	0.71	117.58	105.54
Kern	99 S	N.O 7th Standard	ML	PM	31.98	R31.16	35.45	-119.09	24	1.30	119.78	80.83

For this quarter, PEMS system reports ten active bottleneck locations for the District. These bottleneck locations are mainly on SR 41 in Fresno, SR 99 in Fresno and Kern Counties as well as SR 58 in the City of Bakersfield in Kern County. Further investigation at these locations, it appears that bottleneck locations on SR 99 and SR 58 in Kern as well as SR 99 were within the active construction zones. Active bottleneck locations are defined (or computed by PeMS) as delay (VHD) be 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

Quarterly Mobility Statistics

Measure	Graph	Percentage Change	
		Over one year ago	Over last quarter
Vehicle Miles of Travel (VMT)		17.4%	-2.7%
Total Vehicle Hours of Delay (VHD) at 35 mph		104.3%	-5.1%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		92.9%	-9%
Total Vehicle Hours of Delay (VHD) at 60 mph		48%	3.1%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		38.6%	-0.4%

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 Monday -41.1%
		Largest Magnitude Increase over one year ago Thursday 68%	Largest Magnitude Increase over last quarter Thursday 52.2%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago –	Largest Magnitude Weekday Decrease over last quarter 8 PM -70.2%
		Largest Magnitude Weekday Increase over one year ago 5 PM 134.3%	Largest Magnitude Weekday Increase over last quarter 4 PM 48.8%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 10 AM -81.1%	Largest Magnitude Saturday Decrease over last quarter 11 AM -90%
		Largest Magnitude Saturday Increase over one year ago 3 PM 161.2%	Largest Magnitude Saturday Increase over last quarter 3 PM 133.6%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago –	Largest Magnitude Sun./Holiday Decrease over last quarter 11 AM -54.6%
		Largest Magnitude Sun./Holiday Increase over one year ago 6 PM 436.2%	Largest Magnitude Sun./Holiday Increase over last quarter 6 PM 55.9%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago Madera -21.8%	Largest Magnitude Decrease over last quarter Kern -25.3%
		Largest Magnitude Increase over one year ago Kern 118.7%	Largest Magnitude Increase over last quarter Fresno 56.6%
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 Nigh -62.7%
		Largest Magnitude Increase over one year ago PM Peak 66.6%	Largest Magnitude Increase over last quarter PM Peak 25.6%
Average Number of Good and Bad Detectors		Change in Good over one year ago 2%	Change in Good over last quarter -4%
		Change in Bad over one year ago -2%	Change in Bad over last quarter 20%

Congestion by Route											
		Vehicle Hours of Delay at 35 mph			Difference 2021 Q4-2020 Q4		Difference 2021 Q4-2021 Q3		Rank		
Route	County	2020 Q4	2021 Q3	2021 Q4	Absolute	Percentage	Absolute	Percentage	2020 Q4	2021 Q3	2021 Q4
SR99	Kern	22435.1	113345	84491.5	62056.4	277%	(28,854)	-25%	4	1	1
I5	Kern	56749.3	82167.3	71986.4	15237.1	27%	(10,181)	-12%	1	2	2
SR99	Fresno	12494.3	18290	40994.5	28500.2	228%	22,705	124%	5	7	3
SR99	Tulare	26980.2	16352.7	36032	9051.8	34%	19,679	120%	3	8	4
SR41	Fresno	6706.5	21783.2	29610	22903.5	342%	7,827	36%	6	6	5
I5	Fresno	6177.1	13281.6	27168.1	20991	340%	13,887	105%	7	10	6
SR99	Madera	32339.9	25049	24974.2	-7365.7	-23%	(75)	0%	2	5	7
SR58	Kern	1262.1	42602.1	21488.3	20226.2	1603%	(21,114)	-50%	12	3	8
I5	Kings	1930.9	25948.3	11063.7	9132.8	473%	(14,885)	-57%	10	4	9
SR180	Fresno	3657	13833.5	9106.7	5449.7	149%	(4,727)	-34%	9	9	10
SR198	Tulare	1560.5	419	3268	1707.5	109%	2,849	680%	11	14	11
SR168	Fresno	3921.6	2591.8	2421.6	-1500	-38%	(170)	-7%	8	12	12
SR41	Kings	927	7091.7	1093.5	166.5	18%	(5,998)	-85%	14	11	13
SR41	Madera	0.1	805.3	278.2	278.1	278100%	(527)	-65%	18	13	14
SR198	Kings	166.1	144.6	123.6	-42.5	-26%	(21)	-15%	15	15	15
SR152	Madera	28	0.3	69.5	41.5	148%	69	23067%	16	18	16
SR46	Kern	945.8	18.9	16.5	-929.3	-98%	(2)	-13%	13	16	17
SR178	Kern	0.2	13	0	-0.2	-100%	(13)	-100%	17	17	18
TOTALS		178,282	383,724	364,186	185,905	104.3%	-19,538	-5.1%			