District 06
Mobility Performance Report

2023 Fourth Quarter

DEPARTMENT OF TRANSPORTATION

January 31, 2024
: D06 – Traffic Operations

2023 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 number of road miles 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 of 2023, total delay equaled approximately 496,800 vehicle hours of delay (VHD) at the 35mph speed threshold, an increase of approximately 29 percent compared to last quarter (third quarter of 2023). The average (non-holiday) weekday of vehicle hours of delay experienced in this quarter was approximately 5714 VHD (compares to 4774 VHD in last quarter) at 35mph speed threshold, an increase of 19.7 percent. Total delay was calculated at approximately 1.9 million VHD at 60mph speed threshold, an increase of approximately 9.7 percent compared to third quarter (1.7 million VHD) of 2023. The average (non-holiday) weekday of vehicle hours of delay was reported as 24,030 (rounded off to 24,000) VHD at 60mph speed threshold, which also increases approximately 6 percent compare to previous quarter (23,000 VHD). Kern and Fresno Counties show the largest congestion among five counties in the District, mainly on SR 41, and SR 99. Vehicle Miles Traveled (VMT) was reported at an approximately 2.25 billion vehicle miles which slightly decrease about 3.3 percent compared to the last quarter (2.33 billion). VMT for this quarter, compared to Quarter 4 of last year, is also slightly increase about 2.2 percent (2.21 billion for Quarter 4 last year). Overall, for this quarter, total vehicle-hour of delay for 35mph increases approximately 29.1 percent compared to third quarter of 2023 and the total vehicle-hour of delay at 60mph also increases approximately 9.7 percent, compared to the last quarter.

For this quarter, the total number of functional detectors in the district maintains as 1861. The Performance Measure System (PEMS) reported approximately 3 percent decrease in good detectors compared to the last quarter and an increase of approximately 14 percent in bad detectors compared to last quarter. The average number of good as well as bad detectors are illustrated in the graph at the end of this report.

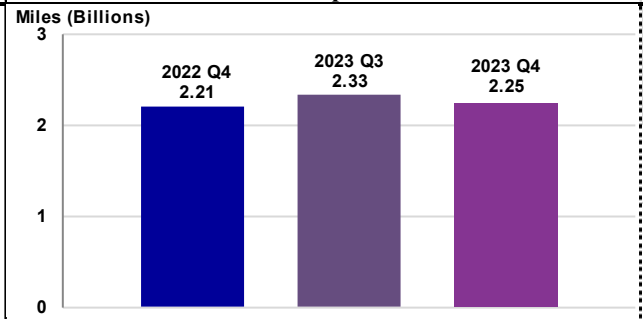
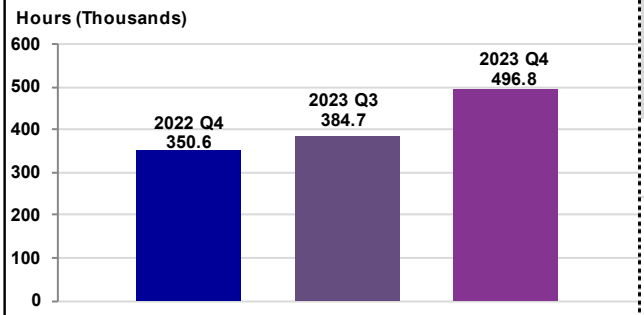
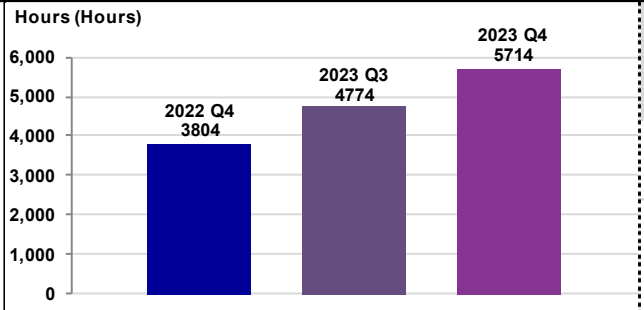
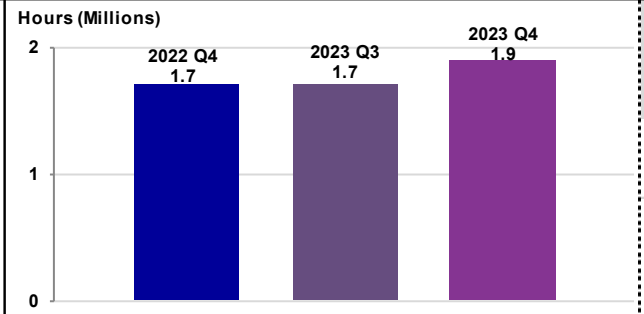
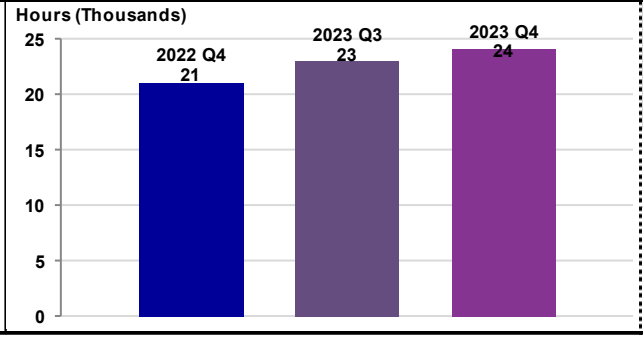
Top Ten Bottlenecks for Quarter 4 – 2023

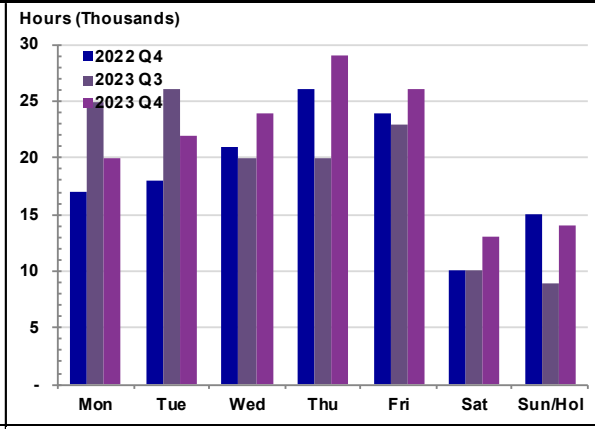
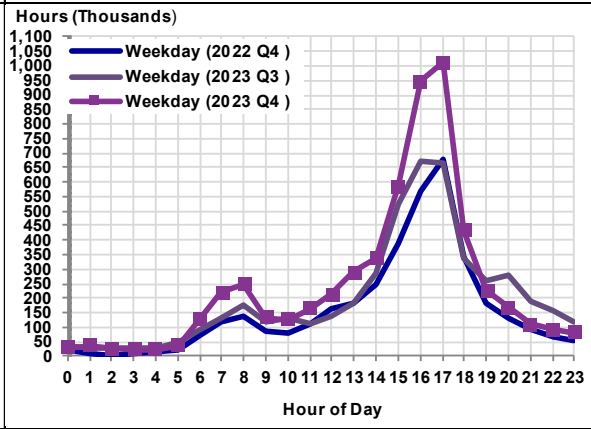
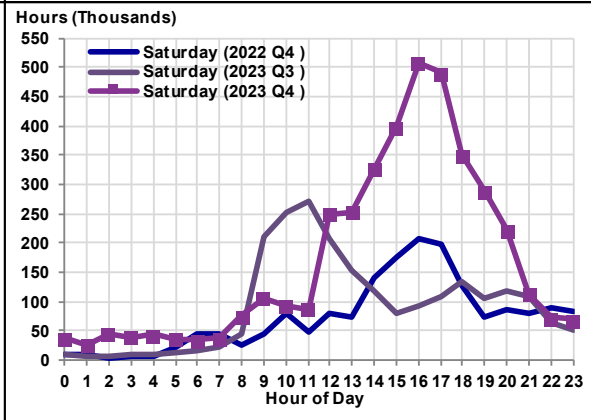
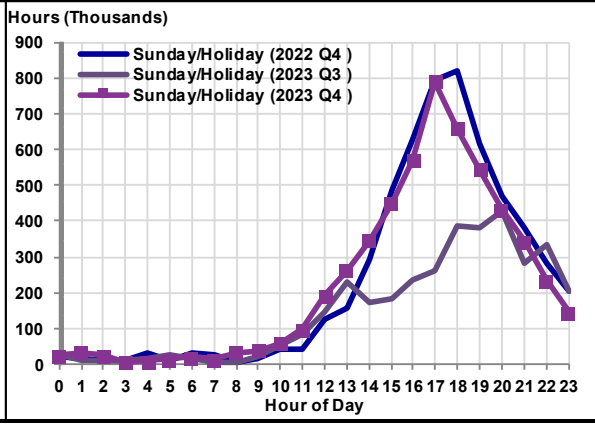
County	Fwy	Locations	Type	Shift	Abs PM	CA PM	Latitude	Longitude	# Days Active	Avg Extent (Miles)	Total Delay (Veh-hrs)	Avg Duration (mins)
Fresno	41 S	Shaw Ave	ML	PM	130.15	R28.395	36.81	-119.79	56	1.36	16676.10	6185
Kern	99 S	N.O Route 58	ML	PM	26.80	25.9809	35.39	-119.04	53	0.74	10564.60	5865
Fresno	41 N	Clinton Ave.	ML	PM	127.63	R25.8805	36.77	-119.78	58	1.37	8874.50	4100
Fresno	41 N	Shields Ave	ML	PM	128.31	R26.5605	36.78	-119.78	40	2.12	9724.90	2790
Fresno	99 S	Olive Ave.	ML	PM	135.53	23.21	36.76	-119.83	42	1.14	5162.50	3420
Fresno	99 N	N.O Nielsen Ave.	ML	PM	134.65	22.31	36.75	-119.82	52	0.68	5325.50	5740
Kern	99 S	Rosedale Highway	ML	PM	26.35	25.532	35.38	-119.04	56	0.30	4146.50	6465
Fresno	41 N	Ashlan Ave	ML	PM	129.30	R27.55	36.80	-119.78	53	0.50	3110.70	5235
Fresno	41 N	Mc Kinley Ave.	ML	PM	127.09	R25.3405	36.77	-119.78	53	0.80	2408.80	1735
Fresno	41 S	Ashlan Ave	ML	PM	129.10	R27.3505	36.79	-119.78	45	0.50	2313.50	3045

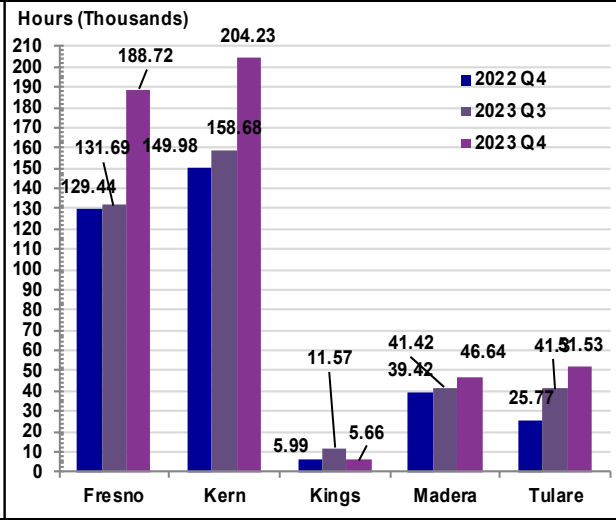
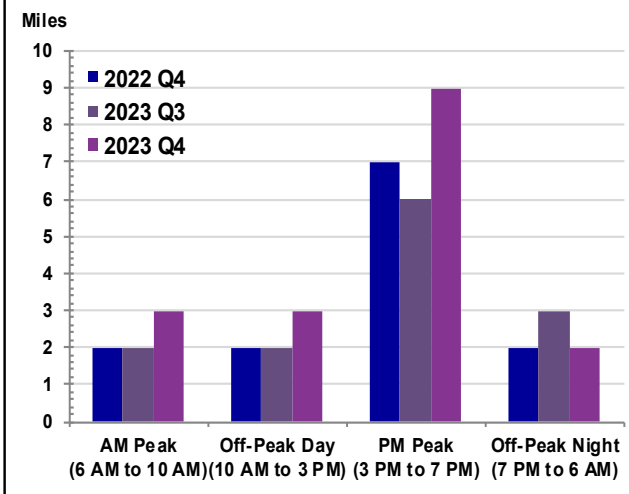
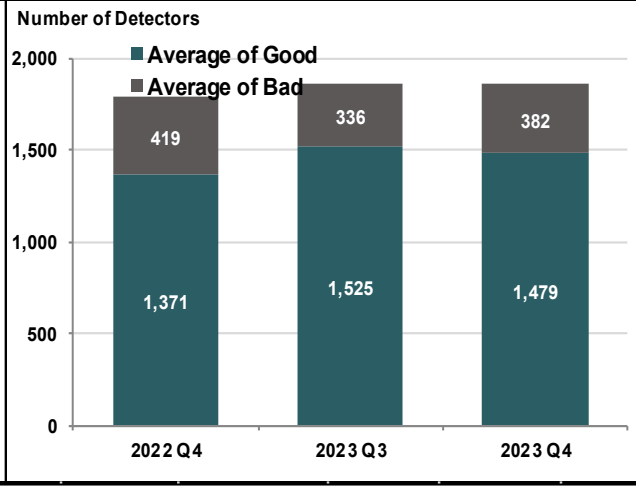
For this third quarter of 2023, PEMS reports the District's top ten bottleneck locations as shown in the above table. The majority of district's top bottleneck locations are mainly on SR 41, and SR 99 in the City of Fresno in Fresno County as well as on SR 99 in the City of Bakersfield in Kern County. The listed bottleneck locations on the table are the recurrent congestion locations during peak hours and they have been occasionally observed in the past quarters. PEMS also reported bottlenecks on SR 99 near Avenue 9 interchange and Avenue 13 in Madera County.

However, the District suspected that these two bottleneck locations was caused by construction projects (and possibly incidents) in the area. It is thus eliminated from the top ten bottleneck locations in this report. The above bottleneck locations are selected as the top ten bottleneck locations in the District for this quarter. Active bottlenecks 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	
Vehicle Miles of Travel (VMT)		Over one year ago	Over last quarter
		2.2%	-3.3%
Total Vehicle Hours of Delay (VHD) at 35 mph		Over one year ago	Over last quarter
		41.7%	29.1%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		Over one year ago	Over last quarter
		50.2%	19.7%
Total Vehicle Hours of Delay (VHD) at 60 mph		Over one year ago	Over last quarter
		12.6%	9.7%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		Over one year ago	Over last quarter
		14.3%	6%

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 -4.6%	Largest Magnitude Decrease over last quarter Monday -20%
		Largest Magnitude Increase over one year ago Tuesday 23.7%	Largest Magnitude Increase over last quarter Thursday 45.8%
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 -38.8%
		Largest Magnitude Weekday Increase over one year ago 4 PM 66.2%	Largest Magnitude Weekday Increase over last quarter 5 PM 52.7%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 10 PM -20%	Largest Magnitude Saturday Decrease over last quarter 11 AM -68%
		Largest Magnitude Saturday Increase over one year ago 4 PM 146.7%	Largest Magnitude Saturday Increase over last quarter 4 PM 444.4%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 6 PM -19.7%	Largest Magnitude Sun./Holiday Decrease over last quarter 10 PM -30.3%
		Largest Magnitude Sun./Holiday Increase over one year ago 1 PM 68.1%	Largest Magnitude Sun./Holiday Increase over last quarter 5 PM 200.6%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago Kings -5.4%	Largest Magnitude Decrease over last quarter Kings -51.1%
		Largest Magnitude Increase over one year ago Fresno 45.8%	Largest Magnitude Increase over last quarter Fresno 43.3%
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph		Largest Magnitude Decrease over one year ago Off-Peak Nigh -5.3%	Largest Magnitude Decrease over last quarter Off-Peak Night -45.2%
		Largest Magnitude Increase over one year ago PM Peak 18.3%	Largest Magnitude Increase over last quarter PM Peak 49.4%
Average Number of Good and Bad Detectors		Change in Good over one year ago 8%	Change in Good over last quarter -3%
		Change in Bad over one year ago -9%	Change in Bad over last quarter 14%

Congestion by Route											
		Vehicle Hours of Delay at 35 mph			Difference 2023 Q4-2022 Q4		Difference 2023 Q4-2023 Q3		Rank		
Route	County	2022 Q4	2023 Q3	2023 Q4	Absolute	Percentage	Absolute	Percentage	2022 Q4	2023 Q3	2023 Q4
SR99	Kern	98,585	84,008	118,792	20,206	20.5%	34,784	41.4%	1	1	1
I5	Kern	44,995	60,491	68,395	23,400	52.0%	7,904	13.1%	3	2	2
SR41	Fresno	55,966	44,271	66,253	10,287	18.4%	21,982	49.7%	2	3	3
SR99	Fresno	27,518	34,903	62,263	34,745	126.3%	27,360	78.4%	6	5	4
SR99	Madera	39,371	39,390	46,615	7,244	18.4%	7,225	18.3%	4	4	5
SR99	Tulare	24,851	33,529	44,730	19,879	80.0%	11,201	33.4%	7	6	6
I5	Fresno	32,622	21,522	29,259	-3,363	-10.3%	7,737	35.9%	5	8	7
SR180	Fresno	10,611	25,846	28,288	17,677	166.6%	2,442	9.4%	8	7	8
SR58	Kern	6,401	14,163	17,042	10,642	166.3%	2,879	20.3%	9	9	9
SR198	Tulare	919	7,767	6,802	5,884	640.5%	-965	-12.4%	12	11	10
I5	Kings	4,933	2,603	2,668	-2,265	-45.9%	65	2.5%	10	13	11
SR168	Fresno	2,721	5,152	2,653	-68	-2.5%	-2,499	-48.5%	11	12	12
SR198	Kings	138	700	1,873	1,735	1260.2%	1,173	167.7%	14	15	13
SR41	Kings	915	8,268	1,119	204	22.3%	-7,149	-86.5%	13	10	14
SR152	Madera	44	0	17	-27	-62.0%	17	8300.0%	15	18	15
SR46	Kern	4	14	6	2	58.3%	-8	-57.8%	17	16	16
SR41	Madera	4	2,030	5	1	29.7%	-2,025	-99.8%	16	14	17
SR178	Kern	0	3	0	0		-3	-90.9%		17	18
TOTALS		**350,594**	**384,654**	**496,779**	**146,185**	**41.7%**	**112,125**	**29.1%**			