

District 06 Mobility Performance Report

2024 First Quarter

DEPARTMENT OF TRANSPORTATION

April 30, 2024
: D06 – Traffic Operations

2024 First 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 this first quarter of 2024, total delay equaled approximately 430,600 vehicle hours of delay (VHD) at the 35mph speed threshold, a decrease of an approximately 13.3 percent compared to last quarter (fourth quarter of 2023). The average (non-holiday) weekday of vehicle hours of delay experienced in this quarter was approximately 5152 VHD (compares to 5714 VHD in last quarter) at 35mph speed threshold, a decrease of 9.8 percent. Total delay was calculated at approximately 1.7 million VHD at 60mph speed threshold, a decrease of approximately 8.3 percent compared to the fourth quarter (1.9 million VHD) of 2023. The average (non-holiday) weekday of vehicle hours of delay was reported as 22,142 (rounded off to 22,000) VHD at 60mph speed threshold, which also decreases approximately 7.9 percent compare to previous quarter (24,000 VHD for 2023 Q4). 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 2.15 billion vehicle miles which decreases about 6.6 percent compared to the last quarter (2.25 billion). However, comparing to quarter 1 of last year (Q1 in 2023), VMT in this quarter increases approximately 5.5 percent. Overall, for this quarter, total vehicle-hour of delay for 35mph decreases approximately 13.3 percent compared to the fourth quarter of 2023 and the total vehicle-hour of delay at 60mph also decreases approximately 9.8 percent, compared to the last quarter.

For this quarter, the total number of functional detectors in the district remains as 1861 detectors. The Performance Measure System (PEMS) reported approximately 5 percent increase in good detectors compared to the last quarter and a decrease of approximately 2 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 1 – 2024

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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	49	1.21	11270.00	4550
Fresno	41 N	Clinton Ave.	ML	PM	127.63	R25.8805	36.77	-119.78	49	1.43	7780.90	3430
Fresno	41 N	McKinley Ave.	ML	PM	127.09	R25.3405	36.77	-119.78	55	0.85	4573.30	3115
Fresno	99 N	N.O Nielsen Ave	ML	PM	134.65	22.31	36.75	-119.82	52	0.54	3822.90	4625
Fresno	99 S	McKinley Ave.	ML	AM	136.07	23.75	36.76	-119.83	47	0.78	1759.20	1945
Fresno	41 S	Shaw Ave	ML	AM	130.15	R28.395	36.81	-119.79	41	1.59	5085.20	1790
Fresno	41 N	Mc Kinley Ave.	ML	AM	127.09	R25.3405	36.77	-119.78	39	0.79	1311.30	1115
Fresno	99 S	Olive Ave.	ML	PM	135.53	23.21	36.76	-119.83	37	1.07	3127.70	2345
Fresno	41 N	Ashlan Ave.	ML	PM	129.30	R27.55	36.80	-119.78	34	0.53	1734.90	2435
Fresno	180W	Fulton	ML	PM	33.62	R57.152	36.75	-119.80	33	0.32	542.10	1740

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. The listed bottleneck locations on the table are the recurrent congestion locations during peak hours and they have been occasionally observed

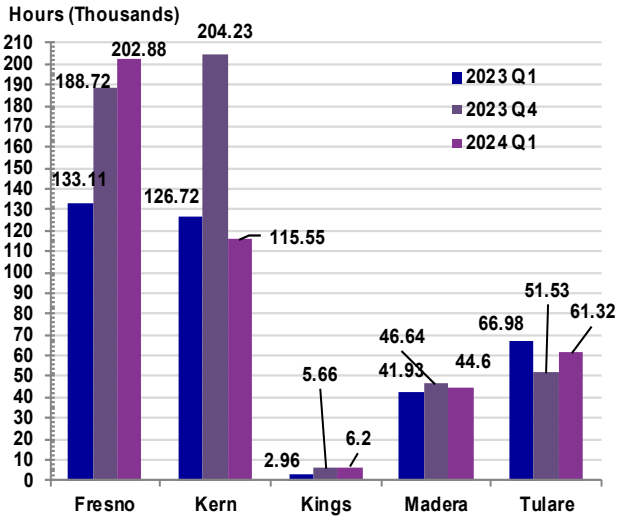
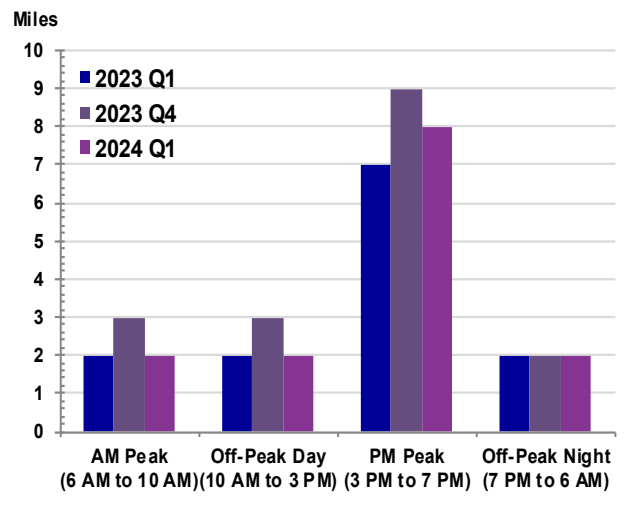
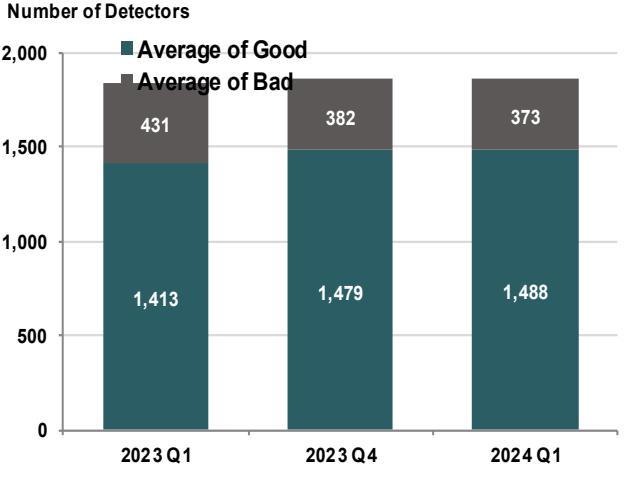
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in the past quarters. PEMS also reported bottlenecks on SR 99 near Avenue 9 interchange Madera County. However, the District suspected that bottleneck at this location was caused by construction projects (and possibly incidents) in the area. It is 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)	<p>Miles (Billions)</p> <p>2023 Q1: 2 2023 Q4: 2.25 2024 Q1: 2.11</p>	Over one year ago	Over last quarter
		5.5%	-6.6%
		↑	↓
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Thousands)</p> <p>2023 Q1: 371.7 2023 Q4: 496.8 2024 Q1: 430.6</p>	Over one year ago	Over last quarter
		15.8%	-13.3%
		↑	↓
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Hours)</p> <p>2023 Q1: 4686 2023 Q4: 5714 2024 Q1: 5152</p>	Over one year ago	Over last quarter
		9.9%	-9.8%
		↑	↓
Total Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Millions)</p> <p>2023 Q1: 1.6 2023 Q4: 1.9 2024 Q1: 1.7</p>	Over one year ago	Over last quarter
		6.8%	-8.3%
		↑	↓
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Thousands)</p> <p>2023 Q1: 21 2023 Q4: 24 2024 Q1: 22</p>	Over one year ago	Over last quarter
		5.2%	-7.9%
		↑	↓

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
		Thursday -10.2% ↓	Thursday -37.2% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Monday 22.2% ↑	Monday 44.5% ↑
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
		2 PM -19.5% ↓	5 PM -14.9% ↓
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		5 PM 28.8% ↑	8 PM 35.1% ↑
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago	Largest Magnitude Saturday Decrease over last quarter
		10 PM -52.1% ↓	5 PM -33.9% ↓
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		4 PM 82% ↑	10 AM 97.5% ↑
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
		3 PM -8.7% ↓	5 PM -36.2% ↓
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		6 PM 57.1% ↑	8 PM 6% ↑

Measure	Graph	Percentage Change	
<p>Total Vehicle Hours of Delay (VHD) by County at 35 mph</p>		<p>Largest Magnitude Decrease over one year ago</p> <p>Kern -8.8% ↓</p>	<p>Largest Magnitude Decrease over last quarter</p> <p>Kern -43.4% ↓</p>
<p>Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph</p>		<p>Largest Magnitude Decrease over one year ago</p> <p>Off-Peak Day -17.7% ↓</p>	<p>Largest Magnitude Decrease over last quarter</p> <p>PM Peak -12.2% ↓</p>
<p>Average Number of Good and Bad Detectors</p>		<p>Change in Good over one year ago</p> <p>5% ↑</p>	<p>Change in Good over last quarter</p> <p>1% ↑</p>
		<p>Change in Bad over one year ago</p> <p>-13% ↓</p>	<p>Change in Bad over last quarter</p> <p>-2% ↓</p>

Congestion by Route

Route	County	Vehicle Hours of Delay at 35 mph			Difference 2024 Q1-2023 Q1		Difference 2024 Q1-2023 Q4		Rank		
		2023 Q1	2023 Q4	2024 Q1	Absolute	Percentage	Absolute	Percentage	2023 Q1	2023 Q4	2024 Q1
SR99	Fresno	29,696	62,263	66,002	36,306	122.3%	3,739	6.0%	7	4	1
SR99	Kern	75,051	118,792	65,039	-10,012	-13.3%	-53,753	-45.2%	1	1	2
SR41	Fresno	35,558	66,253	59,211	23,653	66.5%	-7,042	-10.6%	6	3	3
SR99	Tulare	64,546	44,730	53,420	-11,125	-17.2%	8,690	19.4%	2	6	4
I5	Kern	38,502	68,395	44,870	6,368	16.5%	-23,525	-34.4%	5	2	5
SR99	Madera	41,370	46,615	44,032	2,662	6.4%	-2,583	-5.5%	4	5	6
I5	Fresno	46,669	29,259	43,656	-3,012	-6.5%	14,397	49.2%	3	7	7
SR168	Fresno	1,581	2,653	17,353	15,772	997.7%	14,700	554.0%	12	12	8
SR180	Fresno	19,603	28,288	16,662	-2,942	-15.0%	-11,626	-41.1%	8	8	9
SR198	Tulare	2,431	6,802	7,903	5,472	225.1%	1,100	16.2%	11	10	10
SR58	Kern	13,146	17,042	5,623	-7,523	-57.2%	-11,419	-67.0%	9	9	11
I5	Kings	2,499	2,668	3,352	852	34.1%	683	25.6%	10	11	12
SR198	Kings	290	1,873	2,846	2,557	883.1%	973	52.0%	14	13	13
SR41	Madera	559	5	544	-15	-2.7%	539	11235.4%	13	17	14
SR152	Madera	6	17	27	21	389.1%	10	60.1%	17	15	15
SR178	Kern	0	0	19	19		19	6166.7%		18	16
SR41	Kings	169	1,119	7	-162	-95.9%	-1,112	-99.4%	15	14	17
SR46	Kern	21	6	1	-20	-96.2%	-5	-86.0%	16	16	18
TOTALS		371,673	496,774	430,565	58,891	15.8%	-66,209	-13.3%			