

District 06 Mobility Performance Report

2022 Second Quarter

DEPARTMENT OF TRANSPORTATION

August 5, 2022
: D06 – Traffic Operations

2022 Second 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 second quarter, total delay equaled 296,000 vehicle hours of delay (VHD) at the 35mph speed threshold, which just a slightly increases approximately 0.3 percent compare to last quarter (first quarter of 2022). The average (non-holiday) weekday of vehicle hours of delay experienced in this quarter was approximately 3678 thousand VHD (compare to 3495 thousand VHD in last quarter) at 35mph speed threshold. Total delay reported at approximately 1.4 million VHD at 60mph speed threshold, which decreases about 6.2 percent compare to previous quarter. The average (non-holiday) weekday of vehicle hours of delay was reported as 19,000 VHD at 60mph speed threshold, which decreases approximately 3.4 percent compare to previous quarter. Kern and Fresno Counties continued to experience the largest delay among five counties in the District. Vehicle Miles Traveled (VMT) was reported at approximately 2.23 billion vehicle miles which increase approximately 10 percent when compared to the last quarter. VMT for this quarter, compares to Q2 of last year, increases approximately 2.7 percent.

For this quarter, the total number of detectors in the district slightly increases from 1754 (Q1) to 1790 (Q2). It reported the change in good detectors slightly decreases approximately 2 percent comparing to the last quarter. As far as change in percentage of bad detectors, PEMS reports 23 percent increase comparing 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 2 – 2022

County	Fwy	Locations	Type	Shift	Abs PM	CA PM	Latitude	Longitude	# Days Active	Avg Extent (Miles)	Avg Delay (Veh-hrs)	Avg Duration (mins)
Kern	99 N	S. 7 th Standard	ML	PM	30.31	R30.491	35.44	-119.08	48	0.60	172.8	145.21
Kern	99 S	N. 7 th Standard	ML	PM	31.98	R31.16	35.45	-119.09	38	1.30	244.77	106.84
Madera	99 S	S. O Ave. 12	ML	PM	150.90	6.962	36.92	-120.02	43	1.57	153.08	89.42
Kern	58 W	H Street	ML	PM	110.13	R53.307	35.35	-119.02	38	1.83	115.48	85.00
Kern	99 S	JNO SR 65	ML	PM	30.71	R29.891	35.43	-119.08	47	0.70	294.1	174.47
Fresno	41 S	Gettysburg Ave.	ML	PM	129.74	R27.982	36.80	-119.79	23	1.93	101.10	29.57
Fresno	41 N	McKinley Ave.	ML	PM	127.09	R25.3405	36.77	-119.78	45	0.96	170.16	97.22
Fresno	99 S	Olive Ave.	ML	PM	135.63	23.21	36.76	-119.83	36	1.24	114.15	59.17

For this quarter, PEMS system reports active bottleneck locations for the District. These bottleneck locations are mainly on SR 41 in Fresno, SR 99 in Madera well as SR 58 and SR 99 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 in Madera counties were within the active construction zones. Although SR 99 in the city of Bakersfield has experienced some congestion during the peak PM commute hours in the past (before the pandemic); but multiple construction projects within the vicinity have contributed to more congestion and larger bottlenecks. 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. Bottlenecks reported in Fresno 41 is a typical daily recurrent congestion in the City of Fresno during peak hours commute.

Quarterly Mobility Statistics

Measure	Graph	Percentage Change									
Vehicle Miles of Travel (VMT)	<p>Miles (Billions)</p> <table border="1"> <tr><th>Period</th><th>Value</th></tr> <tr><td>2021 Q2</td><td>2.17</td></tr> <tr><td>2022 Q1</td><td>2.02</td></tr> <tr><td>2022 Q2</td><td>2.23</td></tr> </table>	Period	Value	2021 Q2	2.17	2022 Q1	2.02	2022 Q2	2.23	Over one year ago	Over last quarter
		Period	Value								
		2021 Q2	2.17								
2022 Q1	2.02										
2022 Q2	2.23										
2.7%	10.1%										
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Period</th><th>Value</th></tr> <tr><td>2021 Q2</td><td>283.2</td></tr> <tr><td>2022 Q1</td><td>295</td></tr> <tr><td>2022 Q2</td><td>296</td></tr> </table>	Period	Value	2021 Q2	283.2	2022 Q1	295	2022 Q2	296	Over one year ago	Over last quarter
		Period	Value								
		2021 Q2	283.2								
2022 Q1	295										
2022 Q2	296										
4.5%	0.3%										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours</p> <table border="1"> <tr><th>Period</th><th>Value</th></tr> <tr><td>2021 Q2</td><td>3522</td></tr> <tr><td>2022 Q1</td><td>3495</td></tr> <tr><td>2022 Q2</td><td>3678</td></tr> </table>	Period	Value	2021 Q2	3522	2022 Q1	3495	2022 Q2	3678	Over one year ago	Over last quarter
		Period	Value								
		2021 Q2	3522								
2022 Q1	3495										
2022 Q2	3678										
4.4%	5.2%										
Total Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Period</th><th>Value</th></tr> <tr><td>2021 Q2</td><td>1.4</td></tr> <tr><td>2022 Q1</td><td>1.5</td></tr> <tr><td>2022 Q2</td><td>1.4</td></tr> </table>	Period	Value	2021 Q2	1.4	2022 Q1	1.5	2022 Q2	1.4	Over one year ago	Over last quarter
		Period	Value								
		2021 Q2	1.4								
2022 Q1	1.5										
2022 Q2	1.4										
2.9%	-6.2%										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Period</th><th>Value</th></tr> <tr><td>2021 Q2</td><td>18</td></tr> <tr><td>2022 Q1</td><td>20</td></tr> <tr><td>2022 Q2</td><td>19</td></tr> </table>	Period	Value	2021 Q2	18	2022 Q1	20	2022 Q2	19	Over one year ago	Over last quarter
		Period	Value								
		2021 Q2	18								
2022 Q1	20										
2022 Q2	19										
6.1%	-3.4%										

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
		Sun/Hol -12.2% ↓	Friday -19.3% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Monday 9.4% ↑	Monday 26.4% ↑
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
		10 AM -50.4% ↓	7 AM -50.9% ↓
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		8 PM 33.3% ↑	3 PM 25.3% ↑
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
		11 AM -52.7% ↓	7 PM -67.9% ↓
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		11 PM 2904% ↑	1 PM 227.3% ↑
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
		2 PM -29.6% ↓	6 PM -51% ↓
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		8 PM 82.8% ↑	2 PM 21.4% ↑

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Madera -65.9% ↓	Kings -76.2% ↓
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 Day -31.8% ↓	AM Peak -49.4% ↓
Average Number of Good and Bad Detectors		Change in Good over one year ago	Change in Good over last quarter
		3% ↑	-2% ↓
		Change in Bad over one year ago	Change in Bad over last quarter
		8% ↑	23% ↑

Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2022 Q2-2021 Q2		Difference 2022 Q2-2022 Q1		Rank		
		2021 Q2	2022 Q1	2022 Q2	Absolute	Percentage	Absolute	Percentage	2021 Q2	2022 Q1	2022 Q2
SR99	Kern	46,308	98,461	141,082	94,774	204.7%	42,621	43.3%	2	1	1
I5	Kern	71,062	53,760	39,474	-31,588	-44.5%	-14,286	-26.6%	1	2	2
SR99	Fresno	19,674	22,433	39,189	19,515	99.2%	16,756	74.7%	6	5	3
SR41	Fresno	17,093	23,077	19,000	1,907	11.2%	-4,077	-17.7%	7	4	4
SR99	Madera	43,942	24,930	15,267	-28,675	-65.3%	-9,663	-38.8%	3	3	5
SR99	Tulare	20,496	17,487	11,479	-9,017	-44.0%	-6,008	-34.4%	5	7	6
SR58	Kern	16,247	7,442	9,809	-6,438	-39.6%	2,367	31.8%	8	9	7
I5	Fresno	21,799	16,378	6,795	-15,005	-68.8%	-9,583	-58.5%	4	8	8
SR168	Fresno	3,665	3,931	4,195	530	14.5%	264	6.7%	12	11	9
I5	Kings	5,280	19,064	4,126	-1,154	-21.9%	-14,938	-78.4%	10	6	10
SR180	Fresno	11,014	5,156	3,030	-7,984	-72.5%	-2,125	-41.2%	9	10	11
SR198	Tulare	668	1,126	1,620	952	142.5%	494	43.9%	14	12	12
SR41	Kings	4,408	1,018	706	-3,702	-84.0%	-312	-30.6%	11	13	13
SR198	Kings	321	701	122	-199	-62.0%	-579	-82.6%	15	14	14
SR46	Kern	312	27	58	-254	-81.4%	31	114.0%	16	15	15
SR41	Madera	849	0	28	-821	-96.7%	28		13		16
SR178	Kern	3	1	2	-1	-44.8%	1	45.5%	18	16	17
SR152	Madera	87	0	0	-87	-100.0%	0		17		
TOTALS		283,229	294,990	295,982	12,753	4.5%	992	0.3%			