

District 06 Mobility Performance Report

2022 Third Quarter

DEPARTMENT OF TRANSPORTATION

October 28, 2022
: D06 – Traffic Operations

2022 Third 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 third quarter, total delay equaled approximately 226,000 vehicle hours of delay (VHD) at the 35mph speed threshold, a decrease of approximately 24 percent compared to last quarter (second quarter of 2022). The average (non-holiday) weekday of vehicle hours of delay experienced in this quarter was approximately 2760 VHD (compare to 3678 VHD in last quarter) at 35mph speed threshold. Total delay reported at approximately 1.5 million VHD at 60mph speed threshold, an increase of slightly about 3 percent compared to previous quarter (1.4 million VHD) of 2022. The average (non-holiday) weekday of vehicle hours of delay was reported as 19,390 VHD at 60mph speed threshold, which increases approximately 2.3 percent compare to previous quarter (18,960 VHD). Kern and Fresno Counties continued to experience the largest delay among five counties in the District. Vehicle Miles Traveled (VMT) was reported at approximately 2.25 billion vehicle miles which is nearly the same compared to the last quarter (2.23 billion). VMT for this quarter, compared to Q3 of last year, also is nearly the same, 2.26 billion vehicle miles. Overall, for this quarter, total vehicle-hour of delay for 35mph decreases approximately 24 percent, however the total vehicle-hour of delay at 60mph increases slightly about 2.7 percent, compared to the last quarter.

For this quarter, the total number of detectors in the district is approximately 1790. PEMS reported the change in good detectors slightly decreases approximately 2 percent compared to the last quarter. As far as change in percentage of bad detectors, PEMS reports approximately 8

percent increase in change of 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 3 – 2022

County	Fwy	Locations	Type	Shift	Abs PM	CA PM	Latitude	Longitude	# Days Active	Avg Extent (Miles)	Avg Delay (Veh-hrs)	Avg Duration (mins)
Madera	99 S	S. O Avenue 12	ML	PM	150.90	6.962	36.92	-120.02	44	1.72	250.57	117.05
Madera	99 N	Avenue 9	ML	PM	147.51	R3.55	36.88	-119.98	21	2.31	198.00	96.67
Fresno	41 S	Shaw Avenue	ML	PM	130.15	R28.395	36.81	-119.79	38	1.10	112.58	51.45

For this quarter, PEMS system reports only three active bottleneck locations for the District.

These bottleneck locations are mainly on SR 41 in the City of Fresno, SR 99 in Madera County.

Further investigation at these locations, it appears that bottleneck locations on SR 99 in Madera County were related to construction activities and possible incidents related. The listed

bottleneck location on SR 41 in City of Fresno is the recurrent congestion location and has been occasionally observed in the past quarters. 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>Year</th><th>Q3</th></tr> <tr><td>2021</td><td>2.26</td></tr> <tr><td>2022</td><td>2.23</td></tr> <tr><td>2022</td><td>2.25</td></tr> </table>	Year	Q3	2021	2.26	2022	2.23	2022	2.25	Over one year ago	Over last quarter
		Year	Q3								
		2021	2.26								
2022	2.23										
2022	2.25										
-0.3%	1.1%										
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Year</th><th>Q3</th></tr> <tr><td>2021</td><td>383.7</td></tr> <tr><td>2022</td><td>296</td></tr> <tr><td>2022</td><td>225.6</td></tr> </table>	Year	Q3	2021	383.7	2022	296	2022	225.6	Over one year ago	Over last quarter
		Year	Q3								
		2021	383.7								
2022	296										
2022	225.6										
-41.2%	-23.8%										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours</p> <table border="1"> <tr><th>Year</th><th>Q3</th></tr> <tr><td>2021</td><td>4394</td></tr> <tr><td>2022</td><td>3678</td></tr> <tr><td>2022</td><td>2760</td></tr> </table>	Year	Q3	2021	4394	2022	3678	2022	2760	Over one year ago	Over last quarter
		Year	Q3								
		2021	4394								
2022	3678										
2022	2760										
-37.2%	-25%										
Total Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Year</th><th>Q3</th></tr> <tr><td>2021</td><td>1.7</td></tr> <tr><td>2022</td><td>1.4</td></tr> <tr><td>2022</td><td>1.5</td></tr> </table>	Year	Q3	2021	1.7	2022	1.4	2022	1.5	Over one year ago	Over last quarter
		Year	Q3								
		2021	1.7								
2022	1.4										
2022	1.5										
-13.9%	2.7%										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Year</th><th>Q3</th></tr> <tr><td>2021</td><td>21</td></tr> <tr><td>2022</td><td>19</td></tr> <tr><td>2022</td><td>19</td></tr> </table>	Year	Q3	2021	21	2022	19	2022	19	Over one year ago	Over last quarter
		Year	Q3								
		2021	21								
2022	19										
2022	19										
-9.4%	2.3%										

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 -41.7% ↓	Thursday -9.6% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		-	Monday 18.1% ↑
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
		6 PM -50.3% ↓	4 PM -42% ↓
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		-	10 AM 74.2% ↑
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 -49.5% ↓	2 PM -51.8% ↓
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		11 PM 284.9% ↑	10 AM 141% ↑
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
		4 PM -83% ↓	3 PM -86.7% ↓
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		12 AM 384.9% ↑	12 AM 1679.6% ↑

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph	<p>Hours (Thousands)</p>	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Kern -67.5% ↓	Kern -59.4% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
Fresno 23.8% ↑	Madera 107.9% ↑		
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph	<p>Miles</p>	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Off-Peak Night -59.1% ↓	PM Peak -35.1% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
-	AM Peak 53.3% ↑		
Average Number of Good and Bad Detectors	<p>Number of Detectors</p>	Change in Good over one year ago	Change in Good over last quarter
		-4% ↓	-2% ↓
		Change in Bad over one year ago	Change in Bad over last quarter
42% ↑	8% ↑		

Congestion by Route

Route	County	Vehicle Hours of Delay at 35 mph			Difference 2022 Q3-2021 Q3		Difference 2022 Q3-2022 Q2		Rank		
		2021 Q3	2022 Q2	2022 Q3	Absolute	Percentage	Absolute	Percentage	2021 Q3	2022 Q2	2022 Q3
		SR09	Kern	113,345	141,082	42,866	-70,479	-62.2%	-98,216	-69.6%	1
SR09	Fresno	18,290	39,189	33,861	15,571	85.1%	-5,327	-13.6%	7	3	2
SR09	Madera	25,049	15,267	31,783	6,734	26.9%	16,516	108.2%	5	5	3
I5	Kern	82,167	39,474	24,027	-58,140	-70.8%	-15,447	-39.1%	2	2	4
SR41	Fresno	21,783	19,000	21,018	-765	-3.5%	2,018	10.6%	6	4	5
SR99	Tulare	16,353	11,479	15,133	-1,220	-7.5%	3,654	31.8%	8	6	6
I5	Fresno	13,282	6,795	14,759	1,477	11.1%	7,964	117.2%	10	8	7
SR58	Kern	42,602	9,809	10,407	-32,195	-75.6%	598	6.1%	3	7	8
SR41	Kings	7,092	706	9,362	2,271	32.0%	8,656	1225.3%	11	13	9
SR168	Fresno	2,592	4,195	8,544	5,952	229.7%	4,349	103.7%	12	9	10
SR180	Fresno	13,834	3,030	8,231	-5,602	-40.5%	5,201	171.6%	9	11	11
SR198	Tulare	419	1,620	3,445	3,026	722.3%	1,825	112.6%	14	12	12
I5	Kings	25,948	4,126	1,904	-24,045	-92.7%	-2,223	-53.9%	4	10	13
SR198	Kings	145	122	214	69	47.7%	92	75.2%	15	14	14
SR178	Kern	13	2	25	12	91.5%	23	1456.3%	17	17	15
SR41	Madera	805	28	21	-784	-97.4%	-7	-25.5%	13	16	16
SR46	Kern	19	58	1	-18	-94.7%	-57	-98.3%	16	15	17
SR152	Madera	0	0	1	0	66.7%	1		18		18
TOTALS		383,737	295,982	225,601	-158,136	-41.2%	-70,381	-23.8%			