

# District 06 Mobility Performance Report

**DEPARTMENT OF TRANSPORTATION**

August 9, 2021  
District 06 Traffic Operations

## District 06 Mobility Performance Report

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2021 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

For the second quarter of 2021, total delay at 35 mph was approximately 283.2 thousand vehicle-hours, which increase from 172.4 thousand vehicle-hours; this translates into an increase of approximately 64.3 percent compare to the last quarter and an increase of approximately 159 percent compare to the same quarter of last year (Q2 2020). The vehicle hour of delay (VHD) at 60mph was reported approximately at 1.4 million vehicle hours . Thus, compare to the last quarter, VHD at 60mph increases approximately 12.5 percent, and an increase of about 101 percent compare to the same quarter of last year. The average non-holiday weekday was approximately 3,522 vehicle-hours (versus 2,143 vehicle-hours in last quarter) VHD at 35mph. Compared to the previous quarter, there was an approximately 64.3 percent increase in 35mph average non-holiday weekday quarterly delay, and an increase of approximately 6.4 percent in 60mph. Comparison for Q2 of this year to Q2 one year ago, delay (VHD) for non-holiday at 35 mph and non-holiday at 60 mph increase at about 163.3 percent and 92.4 percent respectively.

The increase in VHD at 35mph and at 60mph for Q2 of this year compare to the previous quarter as well as the same quarter 2 in last year may have been the results of easy restriction of travel throughout the district (the State as a whole). Additionally, it appears there are more active construction activities, especially in Kern County, in this quarter. Vehicle Miles Traveled (VMT) also increase at about 18 percent when compared to the last quarter. VMT increases at approximately 37 percent compared to quarter 2 of last year. Kern County experiences an increase of large magnitude of delay among the five counties in District 6, while Tulare County reports a large decrease of magnitude of delay for this quarter. Kern County experiences an increase in delay (VHD at 35) of approximately 172 percent compare to last quarter. Tulare County experiences a decrease in delay (VHD at 35) about 51 percent compare to last quarter. This may have been the results of more construction activities (lane closure) on SR 99 and SR 58 in Kern County, but less construction activities in Tulare County. Please note that Tulare County has limited number of detectors on SR 99 freeway. Thus, any lane closure near the detection locations would tremendously affect overall delay reported by PEMS.

PEMS reports there is no significant change in good detectors for this quarter comparing to the last quarter. However, change in good detectors increases approximately 28 percent compare to the same quarter of last year. As far as change in percentage of bad detectors, PEMS reports a 2

percent drop in bad detectors compare to last quarter and a decrease of 36 percent in bad detectors compare to quarter two of last year. The average number of good as well as bad detectors are illustrated in the graph at the end of this report.

## **CENTRAL REGION ONGOING PROJECTS**

The District construction activities continue to be a big contributor to the delay due to reduction of regular commute traffic in most of the state routes in the District during this quarter.

Following projects are considered to have some impact to the reported delay in this quarter due to related construction activities (mainly on I5, SR 99 and SR 41, SR 58) in District 6.

### **Fresno County**

Interstate I-5; 06-1A940 0620000141 Replace Pavement RHMA (PM 20.0/21.0, Maint. Project)

Interstate I-5; 06-0T030 0615000006 Install Detection System at Various Locations

State Route 99; 06-0S460 0615000038 Pavement Rehabilitation (PM 0.9/5.0)

State Route 180; 06-1A850 0620000084 Remove & Replace HMA & Install Loops (PM R58.4/R58.6)

### **Kern County**

Interstate I-5; 06-1A900 0621000018 Cold Plane & Place HMA (PM 4.4/15.8)

Interstate I-5; 06-0U470 0615000301 Pavement Rehab. (2R) (PM 82.0/87.0)

Interstate I-5; 06-1A930 0620000137 Remove and Replace PCC (PM 56.6/58.1)

State Route 58; 06-48460 0600000484 Construct 6/8 lanes freeway (PM 31.7/55.6)

State Route 58; 06-0G850 0614000009 Roadway Rehab. (3R) (PM R52.7/R55.5)

State Route 99; 06-0Q280 0613000051 3Rs Roadway Rehabilitation (PM 23.6/28.4)

State Route 99; 06-0Q920 0614000010 Pavement Rehab. & Improve Vertical Clearance (PM 19.5.0/21.0)

**Kings County**

Interstate I-5; 06-0Y700 0619000216 Bridge Deck Repair at Various Locations (Maint. Project)

**Madera County**

State Route 99; 06-47090 0600000973 Madera 99 4-L to 6-L (PM 7.5/15.1)

State Route 99; 06-0U520 0616000003 Pavement Preservation (CAPM) (PM 15.1/19.6)

State Route 152; 06-1A920 0620000136 PCC Panel Replacement with HMA (PM 0.0/15.5  
Maint. Project)

**Tulare County**

State Route 99; 06-0Q910 0614000005 Bridge Deck & Girder Replacement (PM 19.4)

State Route 99; 06-1A960 0620000138 Cold Plane & Replace RHMA (PM 41.3/52.0)

**BOTTLENECKS REPORTED FOR THE 2<sup>nd</sup> QUARTER**

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	HSt	ML	PM	110.13	53.307	35.35	-119.02	70	1.10	110.07	114.21
Madera	99 S	Gateway Drive	ML	PM	153.72	9.781	36.95	-120.05	79	2.20	329.34	150.19
Kern	99 S	N.O Olive	ML	PM	29.02	28.201	35.42	-119.06	49	0.91	120.25	75.61
Fresno	41 S	Shaw Ave	ML	PM	130.15	28.395	36.81	-119.79	48	1.07	147.26	78.54
Fresno	41 N	McKinley	ML	PM	127.09	25.3405	36.77	-119.78	51	1.17	150.05	87.45

For this quarter, PEMS system reports five active bottleneck locations for the District. These bottleneck locations are mainly on SR 41 in Fresno, SR 99 in Kern, SR 99 in Madera 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 in Madera Counties were within the active construction zones; they are the Madera 99 Widening project (06-

47090\_), and Kern 99 Pavement Rehabilitation project (06-0Q280\_), Kern 58 Roadway Rehabilitation (06-0G850\_) as well as Kern 58 6-lane to 8-Lane (06-48460\_) projects. Bottleneck locations on SR 41 at Shaw Avenue and SR 41 at McKinley Avenue had been observed in the past years (before year 2020). 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**

(Summary in the next 4 pages)

Measure	Graph	Percentage Change									
Vehicle Miles of Travel (VMT)	<p>Miles (Billions)</p> <table border="1"> <tr><th>Year</th><th>Q2</th></tr> <tr><td>2020</td><td>1.58</td></tr> <tr><td>2021</td><td>1.83</td></tr> <tr><td>2021</td><td>2.17</td></tr> </table>	Year	Q2	2020	1.58	2021	1.83	2021	2.17	Over one year ago	Over last quarter
		Year	Q2								
		2020	1.58								
2021	1.83										
2021	2.17										
37.1%	18.2%										
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Year</th><th>Q2</th></tr> <tr><td>2020</td><td>109.2</td></tr> <tr><td>2021</td><td>172.4</td></tr> <tr><td>2021</td><td>283.2</td></tr> </table>	Year	Q2	2020	109.2	2021	172.4	2021	283.2	Over one year ago	Over last quarter
		Year	Q2								
		2020	109.2								
2021	172.4										
2021	283.2										
159.4%	64.3%										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours</p> <table border="1"> <tr><th>Year</th><th>Q2</th></tr> <tr><td>2020</td><td>1338</td></tr> <tr><td>2021</td><td>2143</td></tr> <tr><td>2021</td><td>3522</td></tr> </table>	Year	Q2	2020	1338	2021	2143	2021	3522	Over one year ago	Over last quarter
		Year	Q2								
		2020	1338								
2021	2143										
2021	3522										
163.3%	64.3%										
Total Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Year</th><th>Q2</th></tr> <tr><td>2020</td><td>0.7</td></tr> <tr><td>2021</td><td>1.2</td></tr> <tr><td>2021</td><td>1.4</td></tr> </table>	Year	Q2	2020	0.7	2021	1.2	2021	1.4	Over one year ago	Over last quarter
		Year	Q2								
		2020	0.7								
2021	1.2										
2021	1.4										
101.2%	12.5%										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Year</th><th>Q2</th></tr> <tr><td>2020</td><td>9</td></tr> <tr><td>2021</td><td>17</td></tr> <tr><td>2021</td><td>18</td></tr> </table>	Year	Q2	2020	9	2021	17	2021	18	Over one year ago	Over last quarter
		Year	Q2								
		2020	9								
2021	17										
2021	18										
92.4%	6.4%										



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
		-	Friday -12.6%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Monday 100.2%	Monday 48.8%
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
		2 AM -46.6%	6 AM -23.9%
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		4 PM 314.6%	3 PM 131.3%
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
		9 PM -73.1%	1 PM -60.7%
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		4 PM 320.5%	10 AM 189.6%
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
		8 AM -66.2%	11 AM -22.5%
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		3 PM 823.7%	3 PM 477.3%

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
		Tulare -11.9%	Tulare -50.7%
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
		-	-
Average Number of Good and Bad Detectors		Change in Good over one year ago	Change in Good over last quarter
		28%	0%
		Change in Bad over one year ago	Change in Bad over last quarter
		-36%	-2%

Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2021 Q2-2020 Q2		Difference 2021 Q2-2021 Q1		Rank		
		2020 Q2	2021 Q1	2021 Q2	Absolute	Percentage	Absolute	Percentage	2020 Q2	2021 Q1	2021 Q2
I5	Kern	28,414	22,787	71,062	42,648	150.1%	48,275	211.8%	1	3	1
SR99	Kern	16,522	21,327	46,308	29,786	180.3%	24,982	117.1%	3	4	2
SR99	Madera	6,424	42,234	43,942	37,518	584.1%	1,708	4.0%	6	1	3
I5	Fresno	4,483	2,801	21,799	17,316	386.2%	18,999	678.3%	8	10	4
SR99	Tulare	23,387	40,595	20,496	-2,891	-12.4%	-20,099	-49.5%	2	2	5
SR99	Fresno	7,020	13,584	19,674	12,654	180.2%	6,090	44.8%	4	5	6
SR41	Fresno	3,568	11,301	17,093	13,525	379.1%	5,793	51.3%	9	6	7
SR58	Kern	713	4,167	16,247	15,533	2177.7%	12,080	289.9%	13	7	8
SR180	Fresno	4,885	3,918	11,014	6,130	125.5%	7,096	181.1%	7	8	9
I5	Kings	471	1,250	5,280	4,810	1022.1%	4,030	322.4%	15	12	10
SR41	Kings	2,216	3,520	4,408	2,192	98.9%	888	25.2%	10	9	11
SR168	Fresno	1,889	1,242	3,665	1,776	94.0%	2,423	195.2%	11	13	12
SR41	Madera	9	212	849	840	9033.3%	637	300.5%	16	15	13
SR198	Tulare	637	2,303	668	31	4.9%	-1,635	-71.0%	14	11	14
SR198	Kings	1,741	176	321	-1,421	-81.6%	145	82.7%	12	16	15
SR46	Kern	6,818	977	312	-6,506	-95.4%	-664	-68.0%	5	14	16
SR152	Madera	0	15	87	87	43550.0%	72	474.3%	17	17	17
<b>TOTALS</b>		<b>109,197</b>	<b>172,406</b>	<b>283,226</b>	<b>174,029</b>	<b>159.4%</b>	<b>110,820</b>	<b>64.3%</b>			

Vehicle Hours of Delay is in Hours