

District 06 Mobility Performance Report

2019 Second Quarter

DEPARTMENT OF TRANSPORTATION

July 29, 2019
Prepared by: Duc Ken Ly

District 06 Mobility Performance Report

2019 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 mph. The delay at the 35 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

During the second quarter of 2019 the total delay was approximately 323 thousand Vehicle Hours of Delay (VHD) at the 35 miles per hour (mph) speed threshold, and 1,301 thousand VHD at the 60-mph threshold. The average non-holiday weekday experience was approximately 3,957 thousand VHD at 35 mph which decreases about 13.4 percent compared to last quarter, and 16.8 thousand VHD at 60 mph which also decreases approximately 14 percent compared with last quarter.

For the entire district, the VHD for the second quarter of 2019 experienced an overall decrease of approximately 14.2% when compared to the previous quarter, however the delay varied with respect to each County and route. The VHD also experienced a slight increase of approximately 1% when comparing the second quarter of 2019 to the second quarter of 2018. The Vehicle Miles Traveled (VMT) increased 11.6% when compared to last quarter (Q1 of 2019) at approximately 2 billion of vehicle miles travel. Fresno County and Kern County still experience the largest delay among the five counties in the District. As for comparison of VHD to the previous quarter, Madera County experienced an increase of 139%, while Fresno County experienced a decrease of approximately 51%, at the 35-mph threshold. An increase in VHD in Madera County could correspond to various construction projects on SR 99 and SR 41. Tulare County also experienced a large increase of VHD (150%) in this quarter compare to the previous quarter. This may have contributed by construction activities on SR 99 and SR 198 pavement rehabilitation projects.

CENTRAL REGION ONGOING PROJECTS

For Quarter 2, the following projects are considered to possibly have an impact on delay in District 6.

Fresno County

Interstate 5; 06-0U080 0615000209 Pavement Preservation CAPM (PM 21.0/31.0)

State Route 99; 06-0V460 0616000181 Bridge Rehab & Overlay (PM 0.4/30.5 Maint. Project)

State Route 99; 06-0X910 0618000181 Route 99 HMA Slab Replacement (PM 6.5/11.1)

Kern County

Interstate I-5; 06-0X820 0618000153 Pavement Rehabilitation (PM R15.9/30.8)

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

State Route 58; 06-0S470 0615000048 CRCP & HMA (PM 55.4/59.7)

State Route 58: 06-0G850 0600020167 3Rs Roadway Rehabilitation (PM R52.7/R55.5)

State Route 178: 06-48470 0600000485 Street Widening (PM 0.4/1.9)

State Route 178; 06-0E320 0613000037 Roadside Safety Improvement (PM 1.7/6.9)

Kings County

State Route 41; 06-0X890 0618000179 Rubberized HMA (PM 0/11.1 Maint. Project)

State Route 198; 06-0T290 0615000053 Roadside Safety Improvement (PM 8.3/R19.4)

Madera County

State Route 41; 06-0V020 0616000091 Intersection Improvements (PM 5.6/6.5)

State Route 99; 06-0T210 0615000037 2Rs Resurface and Restore Pavement (PM 22.7/29.4)

Tulare County

State Route 99; 06-0T800 0615000231 Resurface Pavement (PM 37.3/41.3)

State Route 99; 06-0X900 0618000180 Rubberized HMA (PM27.6/31.2 Maint. Project)

State Route 198; 06-0S340 0614000114 Pavement Rehabilitation (PM R11.7/R19.7)

BOTTLENECKS REPORTED FOR QUARTER 2

County	Fwy	Locations	Shift	VDS	CA PM	# Days Active	Avg Extent (Miles)	Avg Delay (Veh-hrs)	Avg Duration (mins)
Madera	99	Gateway Drive SB	PM	602301	9.781	28	2.08	133.89	80.89
Madera	99	Avenue 7 SB	PM	602311	0.9517	32	0.9	129.18	120.16
Madera	99	Avenue 15 SB	PM	602305	12.144	27	1.36	121.56	105
Fresno	99	McKinley Ave. SB	AM	601264	23.75	36	1.63	104.73	39.72
Kern	99	Olive Drive	PM	601260	27.8	33	1.24	180.51	88.03
Kern	58	Union Ave EB	AM	601584	54.374	14	1.10	154.19	251.07
Kern	58	H Street WB	PM	601582	53.306	15	1.10	174.63	94.33

The above bottleneck locations are mainly associated with lane closures related activities on SR 99 in Madera County as well as SR 58 in Kern County, except for a segment on southbound SR 99, between McKinley Avenue to junction of SR 99/180, in the City of Fresno where recurrent congestion had been observed in the past. For Kern 99 at Olive Drive, it was found that one of the four lanes on the VDS number 601260 was off for the whole quarter. Further investigation indicated that the #1 lane was closed during the construction.

QUARTERLY MOBILITY STATISTICS

Measure	Graph	Percentage Change	
Vehicle Miles of Travel (VMT)	Miles (Billions) 	Over one year ago	Over last quarter
		3.5%	11.6%
		↑	↑
Total Vehicle Hours of Delay (VHD) at 35 mph	Hours 	Over one year ago	Over last quarter
		1%	-14.2%
		↑	↓
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	Hours (Thousands) 	Over one year ago	Over last quarter
		4.6%	-13.4%
		↑	↓
Total Vehicle Hours of Delay (VHD) at 60 mph	Hours (Thousands) 	Over one year ago	Over last quarter
		-6.5%	-11.7%
		↓	↓
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	Hours 	Over one year ago	Over last quarter
		-5.3%	-14.1%
		↓	↓

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph	Hours (Thousands)	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Wednesday -12.1%	Tuesday -40%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Thursday 3%	Thursday 11.2%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays	Hours (Thousands)	Largest Magnitude Weekday Decrease over one year ago	Largest Magnitude Weekday Decrease over last quarter
		7 AM -38.4%	8 AM -30.2%
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		4 PM 32.1%	11 AM 22.1%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays	Hours (Thousands)	Largest Magnitude Saturday Decrease over one year ago	Largest Magnitude Saturday Decrease over last quarter
		8 AM -32.7%	4 PM -65.1%
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		2 AM 103.4%	6 AM 48.1%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/Holidays	Hours (Thousands)	Largest Magnitude Sun./Holiday Decrease over one year ago	Largest Magnitude Sun./Holiday Decrease over last quarter
		8 AM -72.7%	8 AM -68%
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		3 PM 133.4%	7 PM 94.1%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph	Hours (Millions) ■ 2018 Q2 ■ 2019 Q1 ■ 2019 Q2 Fresno Kern	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Fresno -56.1% ↓	Fresno -50.5% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph	Miles ■ 2018 Q2 ■ 2019 Q1 ■ 2019 Q2 AM Peak (6 AM to 10 AM) Off-Peak Day (10 AM to 3 PM) PM Peak (3 PM to 7 PM) Off-Peak Night (7 PM to 6 AM)	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		AM Peak -25.6% ↓	AM Peak -28.7% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
Average Number of Good and Bad Detectors	Number of Detectors ■ Average of Good ■ Average of Bad 2018 Q2 2019 Q1 2019 Q2	Change in Good over one year ago	Change in Good over last quarter
		2% ↑	-1% ↓
		Change in Bad over one year ago	Change in Bad over last quarter
		41% ↑	13% ↑

Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2019 Q2-2018 Q2		Difference 2019 Q2-2019 Q1		Rank		
		2018 Q2	2019 Q1	2019 Q2	Absolute	Percentage	Absolute	Percentage	2018 Q2	2019 Q1	2019 Q2
SR99	Madera	33601.1	62249.7	82459.7	48858.6	145%	20,210	32%	5	3	1
SR99	Tulare	25679.8	65777.4	64263.1	38583.3	150%	(1,514)	-2%	7	2	2
I5	Kern	47081.9	38919.6	44653	-2428.9	-5%	5,733	15%	2	4	3
SR99	Kern	41964.4	37287.4	37335.1	-4629.3	-11%	48	0%	4	5	4
SR99	Fresno	43627.8	16422.5	26593.1	-17034.7	-39%	10,171	62%	3	7	5
I5	Fresno	67674.8	96982.6	19228.3	-48446.5	-72%	(77,754)	-80%	1	1	6
SR41	Fresno	29271.2	21844.3	14327.7	-14943.5	-51%	(7,517)	-34%	6	6	7
SR58	Kern	6566	7680.6	10995.9	4429.9	67%	3,315	43%	9	9	8
SR46	Kern	1165.7	11909.5	7897.1	6731.4	577%	(4,012)	-34%	12	8	9
SR180	Fresno	9401	4106.6	7232.3	-2168.7	-23%	3,126	76%	8	11	10
SR168S	Fresno	3554.5	1400	2253.6	-1300.9	-37%	854	61%	11	13	11
I5	Kings	718.7	3840.5	1986.3	1267.6	176%	(1,854)	-48%	15	12	12
SR198	Kings	1133.3	1120.8	1595	461.7	41%	474	42%	13	15	13
SR41	Kings	566.4	463.9	1351.1	784.7	139%	887	191%	16	17	14
SR180S	Fresno	6164.7	608.7	405.3	-5759.4	-93%	(203)	-33%	10	16	15
SR198	Tulare	524.5	1319.5	306.1	-218.4	-42%	(1,013)	-77%	17	14	16
SR41	Madera	888.5	0.4	26.5	-862	-97%	26	6525%	14	19	17
SR178	Kern	4.4	4347.3	1.6	-2.8	-64%	(4,346)	-100%	18	10	18
SR152	Madera	0	25.2	0.2	0.2		(25)	-99%		18	19
TOTALS		319,589	376,307	322,911	3,322	1.0%	-53,396	-14.2%			

Vehicle Hours of Delay is in Hours