

District 04 Mobility Performance Report

2019 Second Quarter:

DEPARTMENT OF TRANSPORTATION

October 24, 2019
District 4-Office of Highway Operations

ABBREVIATIONS

Abs	Absolute
Avg	Average
CA	California
CO	County
MPR	Mobility Performance Report
PeMS	Performance Measurement System
PM	Postmile
Q	Quarter

District 04 Mobility Performance Report

2019 Second Quarter:

EXECUTIVE SUMMARY

Overview

Caltrans District 4 is comprised of nine counties that border the San Francisco Bay: Alameda (ALA), Contra Costa (CC), Marin (MRN), Napa (NAP), San Francisco (SF), San Mateo (SM), Santa Clara (SCL), Solano (SOL), and Sonoma (SON) Counties. Although these are urban counties, they do contain a large amount of sparsely populated land.

The Mobility Performance quarterly analysis compares information with over a year ago and over last quarter in 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 data collected every day of the quarter, twenty-four hours a day, by automated vehicle detector stations deployed on urban-area freeways where congestion is regularly experienced. The MPR presents congestion 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, both light and heavy. These thresholds are set by Caltrans and are based upon engineering experience and District input.

FINDINGS

Some of the vehicle hours of delay data are missing for Alameda County 2019 Q2 since PeMS has stored this missing data in the District 10 database instead of the District 4 database. As a result, there is a 0.68% difference between the vehicle hours of delay data and the total data collected by route for Alameda County Q2. When compared to the whole district, the missing data only gives an error of 0.20%.

In the Second quarter, total delay equaled 10.9 million VHD at the 35 mph speed threshold, and 21.1 million VHD at the 60 mph threshold. Compared to the same quarter the year before, there was an 2.9% decrease in 35 mph total quarterly delay and 2.1% decrease in 60 mph total quarterly delay.

The average non-holiday weekday delay experienced in this quarter was approximately 134 thousand VHD at 35 mph, and 270 thousand VHD at 60 mph. Thursday was the most congested day of the week. This is similar to Thursday being the most congested day in the same quarter a year ago, but a change from Tuesday being the most congested day the prior quarter and a reversion to what we typically saw in the data for our district throughout the years.

Alameda County with 3.13 million vehicle hours of total delay at 35 mph during the second quarter was the most congested county in the District. This county experienced the largest magnitude decrease of 24.1% from a year ago and the largest magnitude increases of 12.5% from the previous quarter. During this quarter, all detectors along SR84 were not working as they were out of commission in the first quarter of 2019; therefore, no delay was reported by PeMS. This contributed to the decrease in total delay for the Alameda County from a year ago.

Santa Clara County with 2.85 million and Contra costa with 1.52 million vehicle hours of total delay at 35 mph were second and third most congested counties in the District. The top three counties Alameda, Santa Clara, and Contra Costa combine to represent approximately 69% of San Francisco Bay Area's total vehicle hours of delay at 35 mph.

Top Ten Bottlenecks for the 2019 Second Quarter:

Rank	CO	Freeway	Approximate Location	Period	Abs PM	CA PM	# of Active Days	Avg Extent (miles)	Total Delay (veh-hours)	Avg Duration (hours)
1	SCL	US101-S	N 13 th St-Oakland Rd	PM	387.3	37.61	62	6.1	208,857	4.0
2	CC	I80-E	Pinole Valley Rd	PM	21.9	8.59	58	5.3	122,174	3.3
3	ALA	I880-N	Tennyson Rd	PM	26.0	15.8	62	5.5	119,127	2.8
4	ALA	I80-W	I-880S	AM	7.72	3.41	58	0.5	118,791	3.6
5	ALA	I80-E	University Ave	PM	11.0	5.7	64	2.9	104,984	3.4
6	SCL	US101-S	Burnett Ave	PM	368.11	R18.8	59	4.0	100,375	3.7
7	ALA	I880-N	Auto Mall Pkwy	PM	15.1	4.84	61	2.6	86,128	4.4
8	CC	SR24-E	Pleasant Hill Rd	PM	12.28	7.91	61	2.8	85,833	3.2
9	SCL	I280-S	Bird Ave	PM	2.85	R2.85	56	2.76	84,216	3.2
10	ALA	I880-N	29th Ave	AM	38.9	28.65	63	3.8	81,803	2.4

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>2018 Q2</td><td>8</td></tr> <tr><td>2019 Q1</td><td>7.6</td></tr> <tr><td>2019 Q2</td><td>8.1</td></tr> </table>	Period	Value	2018 Q2	8	2019 Q1	7.6	2019 Q2	8.1	Over one year ago	Over last quarter
		Period	Value								
		2018 Q2	8								
2019 Q1	7.6										
2019 Q2	8.1										
0.3%	6.3%										
		↑	↑								
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Period</th><th>Value</th></tr> <tr><td>2018 Q2</td><td>11.2</td></tr> <tr><td>2019 Q1</td><td>9.5</td></tr> <tr><td>2019 Q2</td><td>10.9</td></tr> </table>	Period	Value	2018 Q2	11.2	2019 Q1	9.5	2019 Q2	10.9	Over one year ago	Over last quarter
		Period	Value								
		2018 Q2	11.2								
2019 Q1	9.5										
2019 Q2	10.9										
-2.9%	14.8%										
		↓	↑								
Average Non-Holiday Weekday 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>2018 Q2</td><td>142</td></tr> <tr><td>2019 Q1</td><td>129</td></tr> <tr><td>2019 Q2</td><td>134</td></tr> </table>	Period	Value	2018 Q2	142	2019 Q1	129	2019 Q2	134	Over one year ago	Over last quarter
		Period	Value								
		2018 Q2	142								
2019 Q1	129										
2019 Q2	134										
-5.9%	3.6%										
		↓	↑								
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>2018 Q2</td><td>21.5</td></tr> <tr><td>2019 Q1</td><td>18.8</td></tr> <tr><td>2019 Q2</td><td>21.1</td></tr> </table>	Period	Value	2018 Q2	21.5	2019 Q1	18.8	2019 Q2	21.1	Over one year ago	Over last quarter
		Period	Value								
		2018 Q2	21.5								
2019 Q1	18.8										
2019 Q2	21.1										
-2.1%	12.2%										
		↓	↑								
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>2018 Q2</td><td>280</td></tr> <tr><td>2019 Q1</td><td>262</td></tr> <tr><td>2019 Q2</td><td>270</td></tr> </table>	Period	Value	2018 Q2	280	2019 Q1	262	2019 Q2	270	Over one year ago	Over last quarter
		Period	Value								
		2018 Q2	280								
2019 Q1	262										
2019 Q2	270										
-3.7%	2.9%										
		↓	↑								

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
		Friday -9.5% ↓	Tuesday -4.9% ↓
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 -16.1% ↓	8 AM -13.1% ↓
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
		8 PM -17.3% ↓	6 AM -40.7% ↓
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
		9 PM -38.2% ↓	6 AM -49.9% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Sun/Hol 9.4% ↑	Sun/Hol 49.4% ↑
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		9 AM 6.7% ↑	3 PM 16.3% ↑
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		N/A	1 PM 75% ↑
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		1 PM 20.1% ↑	5 PM 74.8% ↑

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
		Alameda -24.1% ↓	San Mateo -1.9% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
Santa Clara 9.5% ↑	Alameda 12.5% ↑		
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
		PM Peak -1.5% ↓	AM Peak -9.9% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
AM Peak 12% ↑	Off-Peak Day 37.1% ↑		
Average Number of Good and Bad Detectors		Change in Good over one year ago	Change in Good over last quarter
		0% ↑	-3% ↓
		Change in Bad over one year ago	Change in Bad over last quarter
-3% ↑	4% ↓		

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
I580	Alameda	767,399	784,028	916,307	148,908	19.4%	132,279	16.9%	4	2	1
US101	Santa Clara	791,425	767,594	860,749	69,324	8.8%	93,156	12.1%	3	3	2
I880	Alameda	1,094,041	830,745	839,769	-254,272	-23.2%	9,025	1.1%	2	1	3
I80	Alameda	1,155,246	565,978	702,412	-452,835	-39.2%	136,434	24.1%	1	4	4
I280	Santa Clara	465,945	464,498	587,094	121,149	26.0%	122,596	26.4%	7	7	5
US101	Sonoma	655,576	370,089	578,539	-77,036	-11.8%	208,450	56.3%	5	9	6
SR85	Santa Clara	501,663	495,426	540,503	38,840	7.7%	45,077	9.1%	6	6	7
US101	San Mateo	408,808	541,315	485,902	77,094	18.9%	-55,414	-10.2%	8	5	8
SR24	Contra Costa	333,918	372,234	355,489	21,571	6.5%	-16,745	-4.5%	11	8	9
I680	Contra Costa	318,550	315,964	351,788	33,238	10.4%	35,824	11.3%	15	10	10
US101	San Francisco	320,661	310,657	329,315	8,654	2.7%	18,658	6.0%	14	11	11
SR4	Contra Costa	275,183	297,428	297,801	22,618	8.2%	373	0.1%	17	12	12
I80	Solano	371,492	259,881	292,693	-78,799	-21.2%	32,812	12.6%	9	14	13
SR237	Santa Clara	292,255	276,117	291,730	-526	-0.2%	15,613	5.7%	16	13	14
I80	Contra Costa	328,376	252,154	267,747	-60,629	-18.5%	15,593	6.2%	12	15	15
I680	Alameda	324,378	234,890	253,770	-70,608	-21.8%	18,881	8.0%	13	16	16
SR92	San Mateo	258,269	182,478	229,092	-29,177	-11.3%	46,613	25.5%	18	19	17
SR37	Solano	188,108	138,486	223,948	35,840	19.1%	85,462	61.7%	21	23	18
I80	San Francisco	223,415	105,159	218,178	-5,238	-2.3%	113,019	107.5%	19	28	19
I280	San Mateo	183,709	219,306	209,957	26,249	14.3%	-9,348	-4.3%	22	17	20
SR1	San Francisco	3,682	139,215	191,016	187,334	5087.4%	51,801	37.2%	42	22	21
I880	Santa Clara	216,187	196,691	171,059	-45,128	-20.9%	-25,633	-13.0%	20	18	22
I580	Contra Costa	61,463	78,385	163,363	101,900	165.8%	84,978	108.4%	34	32	23
I680	Santa Clara	122,080	161,206	157,551	35,470	29.1%	-3,656	-2.3%	26	20	24
SR238	Alameda	177,303	134,072	155,085	-22,218	-12.5%	21,013	15.7%	23	24	25
SR92	Alameda	121,072	139,291	153,383	32,311	26.7%	14,092	10.1%	28	21	26
SR12	Solano	134,650	79,256	131,156	-3,494	-2.6%	51,900	65.5%	24	31	27
I280	San Francisco	75,162	132,492	127,362	52,200	69.4%	-5,130	-3.9%	31	25	28
US101	Marin	116,362	108,844	126,196	9,834	8.5%	17,353	15.9%	29	27	29
SR24	Alameda	126,405	100,431	114,721	-11,683	-9.2%	14,290	14.2%	25	29	30
SR17	Santa Clara	121,204	71,438	110,662	-10,542	-8.7%	39,224	54.9%	27	33	31
SR87	Santa Clara	79,953	128,635	108,033	28,080	35.1%	-20,602	-16.0%	30	26	32
SR37	Sonoma	73,220	69,648	95,302	22,082	30.2%	25,654	36.8%	32	34	33
SR242	Contra Costa	67,990	88,300	83,813	15,823	23.3%	-4,488	-5.1%	33	30	34
I680	Solano	48,679	13,870	77,437	28,758	59.1%	63,568	458.3%	35	37	35
SR12	Napa	12,811	26,155	34,630	21,820	170.3%	8,475	32.4%	37	35	36
I580	Marin	6,792	16,552	23,101	16,309	240.1%	6,550	39.6%	41	36	37
SR152	Santa Clara	9,806	8,724	18,118	8,313	84.8%	9,394	107.7%	38	40	38
SR37	Marin	18,995	10,820	17,619	-1,377	-7.2%	6,799	62.8%	36	39	39
I980	Alameda	9,359	12,076	14,219	4,860	51.9%	2,142	17.7%	39	38	40
SR25	Santa Clara	6,951	8,151	9,301	2,350	33.8%	1,150	14.1%	40	41	41
I780	Solano	509	280	531	22	4.3%	251	89.5%	45	43	42
I80	Napa	924	241	524	-401	-43.4%	282	116.9%	44	44	43
SR160	Contra Costa	1,116	1,002	208	-909	-81.4%	-795	-79.3%	43	42	44
SR29	Napa	3	0	170	167	5748.3%	170		46		45
I880S	Alameda	0	23	117	117		94	399.6%		45	46
SR156	Santa Clara	0	10	101	101		91	918.2%		47	47
SR13	Alameda	0	18	18	18		0	0.0%		46	48
SR84	Alameda	349,110	0	0	-349,110	-100.0%	0		10		
TOTALS		11,220,206	9,510,251	10,917,575	-302,631	-2.7%	1,407,324	14.8%			