

District 04 Mobility Performance Report

2019 Third Quarter

DEPARTMENT OF TRANSPORTATION

December 6, 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 Third 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 from 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

In the third quarter, total delay equaled 11.5 million VHD at the 35mph speed threshold and 22.3 million VHD at the 60mph threshold. Compared to the same quarter the year before, there was a 5.2 percent increase in 35 mph total quarterly delay and a 5.4 percent increase in 60 mph total quarterly delay.

The average non-holiday weekday delay experienced in this quarter was approximately 143 thousand VHD at 35mph, and 286 thousand VHD at 60mph. Thursday was the most congested day of the week. This is similar to Thursday being the most congested in the previous quarter. But in the same quarter a year ago, Wednesday was the most congested day.

Santa Clara County with 3.4 million vehicle hours of total delay at 35mph during the third quarter was the most congested county in the District, which was a change from Alameda County last quarter. This county experienced the largest magnitude increase of 31.2 percent from a year ago and the largest magnitude increase of 19.2 percent from the previous quarter. Alameda County has the largest magnitude decrease of -16.6 percent from a year ago. During this quarter and the previous 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 Alameda County from a year ago.

Alameda County with 3.12 million and Contra Costa County with 1.45 million vehicle hours of total delay at 35 mph were the second and third most congested counties in the District, respectively. The top three counties, Alameda, Santa Clara, and Contra Costa combine to represent approximately 69 percent of San Francisco Bay Area's total vehicle hours of delay at 35 mph.

Top Ten Bottlenecks for the 2019 Third 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	63	6.7	267,282	4.5
2	SCL	I280-S	Bird Ave	PM	2.9	R2.85	57	5.3	175,486	3.2
3	CC	I80-E	Pinole Valley Rd	PM	21.9	8.59	63	5.7	129,707	2.5
4	ALA	I880-N	Auto Mall Pkwy	PM	15.1	4.84	63	3.3	118,930	4.8
5	ALA	I80-W	I-880S	AM	7.7	2.41	60	0.5	117,779	3.7
6	ALA	I80-E	University Ave	PM	11.0	5.7	63	3.0	114,784	3.3
7	ALA	I880-N	Tennyson Road	PM	26.0	15.8	64	5.7	103,706	2.6
8	SCL	US101-S	Burnett Ave	PM	368.1	R18.8	61	3.8	93,049	3.6
9	ALA	I580-E	Lakeshore Ave	PM	59.4	43.47	63	2.2	78,065	3.4
10	SCL	I680-S	Berryessa Rd	PM	3.7	3.72	56	3.8	77,174	2.4

Measure	Graph	Percentage Change									
Vehicle Miles of Travel (VMT)	Miles (Billions) <table><thead><tr><th>Period</th><th>VMT (Billions)</th></tr></thead><tbody><tr><td>2018 Q3</td><td>8</td></tr><tr><td>2019 Q2</td><td>8.1</td></tr><tr><td>2019 Q3</td><td>8.2</td></tr></tbody></table>	Period	VMT (Billions)	2018 Q3	8	2019 Q2	8.1	2019 Q3	8.2	Over one year ago	Over last quarter
		Period	VMT (Billions)								
		2018 Q3	8								
2019 Q2	8.1										
2019 Q3	8.2										
1.5%	1.5%										
↑	↑										
Total Vehicle Hours of Delay (VHD) at 35 mph	Hours (Millions) <table><thead><tr><th>Period</th><th>VHD (Millions)</th></tr></thead><tbody><tr><td>2018 Q3</td><td>11</td></tr><tr><td>2019 Q2</td><td>10.9</td></tr><tr><td>2019 Q3</td><td>11.5</td></tr></tbody></table>	Period	VHD (Millions)	2018 Q3	11	2019 Q2	10.9	2019 Q3	11.5	Over one year ago	Over last quarter
		Period	VHD (Millions)								
		2018 Q3	11								
2019 Q2	10.9										
2019 Q3	11.5										
5.2%	5.8%										
↑	↑										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	Hours (Thousands) <table><thead><tr><th>Period</th><th>VHD (Thousands)</th></tr></thead><tbody><tr><td>2018 Q3</td><td>142</td></tr><tr><td>2019 Q2</td><td>134</td></tr><tr><td>2019 Q3</td><td>143</td></tr></tbody></table>	Period	VHD (Thousands)	2018 Q3	142	2019 Q2	134	2019 Q3	143	Over one year ago	Over last quarter
		Period	VHD (Thousands)								
		2018 Q3	142								
2019 Q2	134										
2019 Q3	143										
0.1%	6.3%										
↑	↑										
Total Vehicle Hours of Delay (VHD) at 60 mph	Hours (Millions) <table><thead><tr><th>Period</th><th>VHD (Millions)</th></tr></thead><tbody><tr><td>2018 Q3</td><td>21.2</td></tr><tr><td>2019 Q2</td><td>21.1</td></tr><tr><td>2019 Q3</td><td>22.3</td></tr></tbody></table>	Period	VHD (Millions)	2018 Q3	21.2	2019 Q2	21.1	2019 Q3	22.3	Over one year ago	Over last quarter
		Period	VHD (Millions)								
		2018 Q3	21.2								
2019 Q2	21.1										
2019 Q3	22.3										
5.4%	5.8%										
↑	↑										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	Hours (Thousands) <table><thead><tr><th>Period</th><th>VHD (Thousands)</th></tr></thead><tbody><tr><td>2018 Q3</td><td>280</td></tr><tr><td>2019 Q2</td><td>270</td></tr><tr><td>2019 Q3</td><td>286</td></tr></tbody></table>	Period	VHD (Thousands)	2018 Q3	280	2019 Q2	270	2019 Q3	286	Over one year ago	Over last quarter
		Period	VHD (Thousands)								
		2018 Q3	280								
2019 Q2	270										
2019 Q3	286										
2.2%	6.1%										
↑	↑										

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph	Hours (Thousands) ■ 2018 Q3 ■ 2019 Q2 ■ 2019 Q3	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Wednesday -2.3%	
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Thursday 12%	Thursday 14.5%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays	Hours (Thousands) — Weekday (2018 Q3) — Weekday (2019 Q2) — Weekday (2019 Q3)	Largest Magnitude Weekday Decrease over one year ago	Largest Magnitude Weekday Decrease over last quarter
		6 PM -7.2%	6 AM -7%
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		8 AM 13.9%	9 AM 18.3%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays	Hours (Thousands) — Saturday (2018 Q3) — Saturday (2019 Q2) — Saturday (2019 Q3)	Largest Magnitude Saturday Decrease over one year ago	Largest Magnitude Saturday Decrease over last quarter
		11 AM -2%	12 PM -8.1%
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		N/A	5 PM 10.5%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/Holidays	Hours (Thousands) — Sunday/Holiday (2018 Q3) — Sunday/Holiday (2019 Q2) — Sunday/Holiday (2019 Q3)	Largest Magnitude Sun./Holiday Decrease over one year ago	Largest Magnitude Sun./Holiday Decrease over last quarter
		9 PM -11.5%	11 AM -10.4%
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		4 PM 53.2%	5 PM 5.4%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph	Hours (Millions) ■ 2018 Q3 ■ 2019 Q2 ■ 2019 Q3	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Alameda -16.6% ↓	San Francisco -8.7% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Santa Clara 31.2% ↑	Santa Clara 19.2% ↑
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph	Miles ■ 2018 Q3 ■ 2019 Q2 ■ 2019 Q3	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		—	PM Peak -0.6% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		AM Peak 21.2% ↑	AM Peak 5.8% ↑
Average Number of Good and Bad Detectors	Number of Detectors ■ Average of Good ■ Average of Bad	Change in Good over one year ago	Change in Good over last quarter
		-1% ↓	-3% ↓
		Change in Bad over one year ago	Change in Bad over last quarter
		-1% ↑	8% ↓

Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2019 Q3-2018 Q3		Difference 2019 Q3-2019 Q2		Rank		
		2018 Q3	2019 Q2	2019 Q3	Absolute	Percentage	Absolute	Percentage	2018 Q3	2019 Q2	2019 Q3
I580	Alameda	788,310	916,307	1,014,452	226,142	28.7%	98,144	10.7%	3	1	1
US101	Santa Clara	778,356	860,749	1,012,743	234,387	30.1%	151,994	17.7%	4	2	2
I280	Santa Clara	429,165	587,094	859,647	430,481	100.3%	272,553	46.4%	9	5	3
I880	Alameda	967,985	839,769	794,779	-173,207	-17.9%	-44,991	-5.4%	2	3	4
US101	Sonoma	630,905	578,539	730,252	99,347	15.7%	151,712	26.2%	5	6	5
I80	Alameda	1,077,435	702,412	700,755	-376,680	-35.0%	-1,657	-0.2%	1	4	6
SR85	Santa Clara	512,697	540,503	579,400	66,704	13.0%	38,898	7.2%	6	7	7
I80	Solano	472,370	292,693	477,478	5,108	1.1%	184,785	63.1%	7	13	8
US101	San Mateo	436,275	485,902	453,583	17,307	4.0%	-32,319	-6.7%	8	8	9
US101	San Francisco	316,201	329,315	387,254	71,053	22.5%	57,939	17.6%	12	11	10
SR237	Santa Clara	326,751	291,730	366,857	40,106	12.3%	75,127	25.8%	11	14	11
I680	Contra Costa	304,240	351,788	352,877	48,637	16.0%	1,089	0.3%	13	10	12
SR4	Contra Costa	269,974	297,801	323,951	53,977	20.0%	26,151	8.8%	15	12	13
I280	San Mateo	187,895	209,957	322,216	134,322	71.5%	112,259	53.5%	22	20	14
SR24	Contra Costa	376,672	355,489	319,076	-57,596	-15.3%	-36,413	-10.2%	10	9	15
I80	Contra Costa	294,733	267,747	304,552	9,819	3.3%	36,805	13.7%	14	15	16
SR92	San Mateo	216,507	229,092	250,574	34,067	15.7%	21,483	9.4%	19	17	17
I680	Alameda	229,517	253,770	195,163	-34,355	-15.0%	-58,608	-23.1%	17	16	18
I880	Santa Clara	209,659	171,059	171,554	-38,105	-18.2%	495	0.3%	20	22	19
SR238	Alameda	147,570	155,085	168,889	21,320	14.4%	13,804	8.9%	23	25	20
I80	San Francisco	220,104	218,178	160,133	-59,970	-27.2%	-58,045	-26.6%	18	19	21
SR92	Alameda	121,104	153,383	159,750	38,645	31.9%	6,367	4.2%	25	26	22
SR1	San Francisco	25,139	191,016	148,536	123,397	490.9%	-42,480	-22.2%	37	21	23
I680	Santa Clara	120,442	157,551	135,972	15,531	12.9%	-21,578	-13.7%	26	24	24
SR17	Santa Clara	119,912	110,662	122,286	2,374	2.0%	11,624	10.5%	27	31	25
SR37	Sonoma	97,808	95,302	118,469	20,661	21.1%	23,168	24.3%	30	33	26
SR87	Santa Clara	73,641	108,033	118,342	44,701	60.7%	10,309	9.5%	33	32	27
US101	Marin	92,528	126,196	109,268	16,740	18.1%	-16,928	-13.4%	31	29	28
SR24	Alameda	138,143	114,721	99,131	-39,012	-28.2%	-15,591	-13.6%	24	30	29
I280	San Francisco	65,842	127,362	94,605	28,762	43.7%	-32,757	-25.7%	34	28	30
SR37	Solano	191,796	223,948	87,814	-103,982	-54.2%	-136,134	-60.8%	21	18	31
SR12	Solano	55,236	131,156	84,454	29,218	52.9%	-46,702	-35.6%	35	27	32
SR242	Contra Costa	76,524	83,813	82,987	6,463	8.4%	-826	-1.0%	32	34	33
I580	Contra Costa	112,836	163,363	71,492	-41,344	-36.6%	-91,871	-56.2%	28	23	34
I680	Solano	33,089	77,437	60,967	27,878	84.3%	-16,470	-21.3%	36	35	35
SR12	Napa	16,474	34,630	29,543	13,069	79.3%	-5,087	-14.7%	39	36	36
SR152	Santa Clara	13,931	18,118	25,036	11,105	79.7%	6,917	38.2%	40	38	37
I580	Marin	107,041	23,101	23,492	-83,549	-78.1%	391	1.7%	29	37	38
I980	Alameda	6,926	14,219	15,391	8,465	122.2%	1,172	8.2%	42	40	39
SR25	Santa Clara	9,557	9,301	11,627	2,071	21.7%	2,326	25.0%	41	41	40
SR37	Marin	22,889	17,619	10,188	-12,701	-55.5%	-7,431	-42.2%	38	39	41
I780	Solano	626	531	2,201	1,575	251.5%	1,670	314.7%	44	42	42
I80	Napa	686	524	140	-546	-79.6%	-384	-73.3%	43	43	43
SR156	Santa Clara	0	101	118	118		17	16.9%		47	44
SR29	Napa	196	170	97	-98	-50.2%	-72	-42.6%	45	45	45
SR13	Alameda	0	18	18	18		0	0.0%		48	46
I880S	Alameda	0	117	12	12		-105	-90.0%		46	47
SR160	Contra Costa	190	208	5	-185	-97.3%	-203	-97.5%	46	44	48
SR84	Alameda	259,795	0	0	-259,795	-100.0%	0		16		
TOTALS		10,955,670	10,917,575	11,558,123	602,454	5.5%	640,548	5.9%			