

District 04 Mobility Performance Report

2018 Third Quarter

DEPARTMENT OF TRANSPORTATION

November 14, 2018
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

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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

In the third quarter, total delay equaled 11.0 million VHD at the 35mph speed threshold, and 21.2 million VHD at the 60mph threshold. Compared to the same quarter the year before, there was a 5.7 percent decrease in 35 mph total quarterly delay and 3.1 percent decrease in 60 mph total quarterly delay. This decrease may be due to the 2070 controllers installed at vehicle detector stations that have had software issues causing lower than existing volumes. The software is under investigation. The VHD decrease also could be due to a 4 percent decrease in the number of good working detectors that are no longer able to capture the congestion. The County/Routes with decreasing good detectors and significant VHD changes between this quarter, the same quarter a year ago and the prior quarter were I680 in Alameda and Santa Clara, I580 and US101 in Marin, and I980 in Alameda.

The average weekday delay experienced in this quarter was approximately 142 thousand VHD at 35 mph, and 280 thousand VHD at 60 mph. Wednesday was the most congested day of the week. This was a change from Thursday being the most congested day in the same quarter a year ago and the prior quarter.

Alameda County with 3.7 million vehicle hours of total delay at 35 mph during the third quarter was the most congested county in the District. This county experienced the largest magnitude decreases; a 5.9 percent decrease from a year ago and a 9.4 percent decrease from the previous quarter.

Santa Clara County with 2.6 million vehicle hours of total delay at 35 mph was second most congested county in the District.

Top Ten Bottlenecks for the 2018 Third Quarter:

Rank	CO	Freeway	Approximate Location	Period	Abs PM	CA PM	# of Active Days	Avg Extent (miles)	Total Delay (hours)	Avg Duration (hours)
1	CC	I80-E	Pinole Valley Rd	PM	21.9	8.59	63	5.8	160,373	4.0
2	ALA	I580-W	W of Carroll Rd	PM	23.1	R6.92	56	3.2	147,242	4.6
3	SCL	US101-S	N 13th St-Oakland Rd	PM	387.3	37.61	54	6.7	123,871	2.4
4	ALA	I80-W	W of Powell St	PM	9.0	3.68	56	2.2	118,231	3.3
5	ALA	I880-N	Alameda Creek	PM	22.2	12	55	3.3	109,390	4.2
6	ALA	I80-E	University Ave	PM	11.0	5.7	63	2.9	108,924	3.5
7	ALA	I80-W	I-880S	AM	7.72	2.41	55	0.5	103,139	3.3
8	ALA	SR84-E	1300' W of 880	PM	35.8	5.76	63	2.6	97,791	4.8
9	ALA	I880-S	23rd Ave	PM	39.3	29.1	57	3.1	97,485	3.9
10	CC	SR-24E	Pleasant Hill	PM	12.3	7.91	63	2.0	90,534	3.6

Quarterly Mobility Statistics

Measure	Graph	Percentage Change							
		Over one year ago	Over last quarter						
Vehicle Miles of Travel (VMT)	<p>Miles (Billions)</p> <table border="1"> <tr><th>Year</th><th>Q3</th></tr> <tr><td>2017</td><td>8.0</td></tr> <tr><td>2018</td><td>8.0</td></tr> </table>	Year	Q3	2017	8.0	2018	8.0	0.5%	0.2%
Year	Q3								
2017	8.0								
2018	8.0								
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Year</th><th>Q3</th></tr> <tr><td>2017</td><td>11.6</td></tr> <tr><td>2018</td><td>11.0</td></tr> </table>	Year	Q3	2017	11.6	2018	11.0	-5.7%	-2.4%
Year	Q3								
2017	11.6								
2018	11.0								
Average Non-Holiday Weekday 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>2017</td><td>149</td></tr> <tr><td>2018</td><td>142</td></tr> </table>	Year	Q3	2017	149	2018	142	-4.2%	0%
Year	Q3								
2017	149								
2018	142								
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>2017</td><td>21.9</td></tr> <tr><td>2018</td><td>21.2</td></tr> </table>	Year	Q3	2017	21.9	2018	21.2	-3.1%	-1.7%
Year	Q3								
2017	21.9								
2018	21.2								
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>2017</td><td>287</td></tr> <tr><td>2018</td><td>280</td></tr> </table>	Year	Q3	2017	287	2018	280	-2.5%	0%
Year	Q3								
2017	287								
2018	280								

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
		Thursday -7.4%	Sun/Hol -14.5%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Wednesday 5.5%	Wednesday 9.4%
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
		7 AM -20.2%	5 PM -4.3%
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		4 PM 4.8%	10 AM 20%
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
		12 PM -9.1%	5 PM -10.9%
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		6 PM 15.3%	11 AM 3.2%
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
		10 AM -56.8%	4 PM -22.1%
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		12 AM 26.8%	12 AM 9.7%

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 -5.9%	Alameda -9.4%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Solano 28.7%	Marin 56.5%
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
		AM Peak -9.1%	PM Peak -4.4%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		PM Peak 4.2%	Off-Peak Day 8.2%
Average Number of Good and Bad Detectors		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
		13%	5%

Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2018 Q3-2017 Q3		Difference 2018 Q3-2018 Q2		Rank		
		2017 Q3	2018 Q2	2018 Q3	Absolute	Percentage	Absolute	Percentage	2017 Q3	2018 Q2	2018 Q3
I80	Alameda	1176950.8	1155246.3	1077435.2	-99515.6	-8%	(77,811)	-7%	1	1	1
I880	Alameda	1083354.8	1094041.1	967985.3	-115369.5	-11%	(126,056)	-12%	2	2	2
I580	Alameda	726146.3	767398.8	788310	62163.7	9%	20,911	3%	5	4	3
US101	Santa Clara	804852.7	791424.9	778356.1	-26496.6	-3%	(13,069)	-2%	3	3	4
US101	Sonoma	788347.2	655575.5	630904.8	-157442.4	-20%	(24,671)	-4%	4	5	5
SR85	Santa Clara	427763	501662.7	512696.5	84933.5	20%	11,034	2%	8	6	6
I80	Solano	252995.8	371491.7	472370.3	219374.5	87%	100,879	27%	19	9	7
US101	San Mateo	541847.6	408808.1	436275.4	-105572.2	-19%	27,467	7%	6	8	8
I280	Santa Clara	483530.6	465945.4	429165.3	-54365.3	-11%	(36,780)	-8%	7	7	9
SR24	Contra Costa	316934	333918.2	376671.9	59737.9	19%	42,754	13%	13	11	10
SR237	Santa Clara	321076.3	292255.4	326750.7	5674.4	2%	34,495	12%	12	16	11
US101	San Francisco	358118.6	320660.9	316200.6	-41918	-12%	(4,460)	-1%	9	14	12
I680	Contra Costa	322149.2	318550.4	304240.4	-17908.8	-6%	(14,310)	-4%	11	15	13
I80	Contra Costa	257626.9	328375.9	294733	37106.1	14%	(33,643)	-10%	18	12	14
SR4	Contra Costa	297691.1	275182.6	269973.8	-27717.3	-9%	(5,209)	-2%	14	17	15
SR84	Alameda	260115.2	349110.2	259795	-320.2	0%	(89,315)	-26%	17	10	16
I680	Alameda	335140	324378.3	229517	-105623	-32%	(94,861)	-29%	10	13	17
I80	San Francisco	286665.6	223415.4	220103.5	-66562.1	-23%	(3,312)	-1%	15	19	18
SR92	San Mateo	278335.8	258268.7	216507.4	-61828.4	-22%	(41,761)	-16%	16	18	19
I880	Santa Clara	138096.9	216187	209659	71562.1	52%	(6,528)	-3%	28	20	20
SR37	Solano	212598.1	188108.1	191796.1	-20802	-10%	3,688	2%	21	21	21
I280	San Mateo	194263.2	183708.9	187894.5	-6368.7	-3%	4,186	2%	23	22	22
SR238	Alameda	160963.5	177302.8	147569.7	-13393.8	-8%	(29,733)	-17%	25	23	23
SR24	Alameda	85248.4	126404.6	138143.1	52894.7	62%	11,739	9%	32	25	24
SR92	Alameda	140680.3	121072.3	121104.2	-19576.1	-14%	32	0%	26	28	25
I680	Santa Clara	233413.7	122080.2	120441.7	-112972	-48%	(1,639)	-1%	20	26	26
SR17	Santa Clara	201105.9	121204.2	119911.5	-81194.4	-40%	(1,293)	-1%	22	27	27
I580	Contra Costa	138708.1	61463.4	112835.6	-25872.5	-19%	51,372	84%	27	34	28
I580	Marin	398.1	3961.2	107041.1	106643	26788%	103,080	2602%	43	41	29
SR37	Sonoma	118383.2	73219.6	97808.3	-20574.9	-17%	24,589	34%	29	32	30
US101	Marin	178750.7	116362.3	92527.8	-86222.9	-48%	(23,835)	-20%	24	29	31
SR242	Contra Costa	87874.5	67989.7	76523.5	-11351	-13%	8,534	13%	31	33	32
SR87	Santa Clara	100637.5	79953	73640.6	-26996.9	-27%	(6,312)	-8%	30	30	33
I280	San Francisco	69358.4	75162	65842.3	-3516.1	-5%	(9,320)	-12%	34	31	34
SR12	Solano	80057.4	134650.4	55236.1	-24821.3	-31%	(79,414)	-59%	33	24	35
I680	Solano	39507.2	48679.2	33088.9	-6418.3	-16%	(15,590)	-32%	36	35	36
SR1	San Francisco	3040.3	3682.3	25139.1	22098.8	727%	21,457	583%	40	42	37
SR37	Marin	61091.1	18995.1	22889.4	-38201.7	-63%	3,894	21%	35	36	38
SR12	Napa	20353.5	12810.6	16473.7	-3879.8	-19%	3,663	29%	38	37	39
SR152	Santa Clara	23431.2	9805.5	13930.5	-9500.7	-41%	4,125	42%	37	38	40
SR25	Santa Clara	9900.5	6951.1	9556.7	-343.8	-3%	2,606	37%	39	40	41
I980	Alameda	1517	9358.5	6926	5409	357%	(2,433)	-26%	42	39	42
I80	Napa	202.5	924.1	686	483.5	239%	(238)	-26%	45	45	43
I780	Solano	84.5	509.1	626.3	541.8	641%	117	23%	46	46	44
SR29	Napa	6.2	2.9	195.7	189.5	3056%	193	6648%	47	47	45
SR160	Contra Costa	2464.3	1116.4	189.9	-2274.4	-92%	(927)	-83%	41	44	46
I580	Napa	0	2831.2	0	0		(2,831)	-100%			43
I880S	Alameda	0	0	0	0		-				
SR13	Alameda	0	0	0	0		-				
SR156	Santa Clara	306.4	0	0	-306.4	-100%	-		44		
TOTALS		11,622,084	11,220,206	10,955,670	-666,415	-5.7%	-264,537	-2.4%			