

District 04 Mobility Performance Report

2017 Third Quarter

DEPARTMENT OF TRANSPORTATION

June 29, 2018

District 4-Office of Highway Operations

District 04 Mobility Performance Report

2017 Third Quarter

EXECUTIVE SUMMARY

Overview

Caltrans District 4 is comprised of nine counties that border the San Francisco Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma 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 11.6 million VHD at the 35 mph speed threshold, and 21.9 million VHD at the 60 mph threshold. Compared to the same quarter the year before, there was an 11.2% increase in 35 mph total quarterly delay and 8.2% increase in 60 mph total quarterly delay. This increase may be due to the recovering economy and also a 14% increase in good working detector that were able to capture more congestion.

The average weekday delay experienced in this quarter was approximately 149 thousand VHD at 35 mph, and 287 thousand VHD at 60 mph. Thursday was the most congested day of the week.

Alameda County with 4.0 million vehicle hours of total delay at 35 mph during the third quarter was the most congested county in the District.

Santa Clara County with 2.7 million vehicle hours of total delay at 35 mph was second most congested county in the District.

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"> <caption>Vehicle Miles of Travel (VMT) - Miles (Billions)</caption> <thead> <tr> <th>Quarter</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>2016 Q3</td> <td>7.9</td> </tr> <tr> <td>2017 Q2</td> <td>7.9</td> </tr> <tr> <td>2017 Q3</td> <td>8</td> </tr> </tbody> </table>	Quarter	Value	2016 Q3	7.9	2017 Q2	7.9	2017 Q3	8	0.8%	0.7%
Quarter	Value										
2016 Q3	7.9										
2017 Q2	7.9										
2017 Q3	8										
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Millions)</p> <table border="1"> <caption>Total Vehicle Hours of Delay (VHD) at 35 mph - Hours (Millions)</caption> <thead> <tr> <th>Quarter</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>2016 Q3</td> <td>10.5</td> </tr> <tr> <td>2017 Q2</td> <td>11.7</td> </tr> <tr> <td>2017 Q3</td> <td>11.6</td> </tr> </tbody> </table>	Quarter	Value	2016 Q3	10.5	2017 Q2	11.7	2017 Q3	11.6	11.2%	-1%
Quarter	Value										
2016 Q3	10.5										
2017 Q2	11.7										
2017 Q3	11.6										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Thousands)</p> <table border="1"> <caption>Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph - Hours (Thousands)</caption> <thead> <tr> <th>Quarter</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>2016 Q3</td> <td>132</td> </tr> <tr> <td>2017 Q2</td> <td>145</td> </tr> <tr> <td>2017 Q3</td> <td>149</td> </tr> </tbody> </table>	Quarter	Value	2016 Q3	132	2017 Q2	145	2017 Q3	149	13%	2.5%
Quarter	Value										
2016 Q3	132										
2017 Q2	145										
2017 Q3	149										
Total Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Millions)</p> <table border="1"> <caption>Total Vehicle Hours of Delay (VHD) at 60 mph - Hours (Millions)</caption> <thead> <tr> <th>Quarter</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>2016 Q3</td> <td>20.2</td> </tr> <tr> <td>2017 Q2</td> <td>21.9</td> </tr> <tr> <td>2017 Q3</td> <td>21.9</td> </tr> </tbody> </table>	Quarter	Value	2016 Q3	20.2	2017 Q2	21.9	2017 Q3	21.9	8.2%	-0.2%
Quarter	Value										
2016 Q3	20.2										
2017 Q2	21.9										
2017 Q3	21.9										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Thousands)</p> <table border="1"> <caption>Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph - Hours (Thousands)</caption> <thead> <tr> <th>Quarter</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>2016 Q3</td> <td>262</td> </tr> <tr> <td>2017 Q2</td> <td>281</td> </tr> <tr> <td>2017 Q3</td> <td>287</td> </tr> </tbody> </table>	Quarter	Value	2016 Q3	262	2017 Q2	281	2017 Q3	287	9.6%	2.4%
Quarter	Value										
2016 Q3	262										
2017 Q2	281										
2017 Q3	287										

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
		-	Sun/Hol -16.6%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Friday 14.1%	Thursday 4.7%
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
		-	4 PM -3.6%
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		8 AM 14%	7 PM 27.9%
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 -6.1%	4 PM -19.6%
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		3 PM 7.6%	9 AM 20.2%
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
		1 AM -39.9%	4 PM -24.3%
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		6 PM 38.6%	9 AM 15.7%

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
		Solano -16.5%	Alameda -9.7%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Sonoma 305.4%	Sonoma 29.6%
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
		Off-Peak Night -0.1%	-
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		PM Peak 6.7%	PM Peak 4.6%
Average Number of Good and Bad Detectors		Change in Good over one year ago	Change in Good over last quarter
		14%	0%
		Change in Bad over one year ago	Change in Bad over last quarter
		-8%	5%

Congestion by Route

Route	County	Vehicle Hours of Delay at 35 mph			Difference 2017 Q3-2016 Q3		Difference 2017 Q3-2017 Q2		Rank		
		2016 Q3	2017 Q2	2017 Q3	Absolute	Percentage	Absolute	Percentage	2016 Q3	2017 Q2	2017 Q3
		I80	Alameda	805815.5	1402013.7	1176950.8	371135.3	46%	(225,063)	-16%	2
I880	Alameda	1295915.8	1125504	1083354.8	-212561	-16%	(42,149)	-4%	1	2	2
US101	Santa Clara	718179.6	748378.1	804852.7	86673.1	12%	56,475	8%	3	3	3
US101	Sonoma	88339.8	530500.5	788347.2	700007.4	792%	257,847	49%	30	5	4
I580	Alameda	677488.2	745254.5	726146.3	48658.1	7%	(19,108)	-3%	4	4	5
US101	San Mateo	586259.7	460595.4	541847.6	-44412.1	-8%	81,252	18%	5	6	6
I280	Santa Clara	440575.1	424482.4	483530.6	42955.5	10%	59,048	14%	6	8	7
SR85	Santa Clara	438940.5	457144.1	427763	-11177.5	-3%	(29,381)	-6%	7	7	8
US101	San Francisco	328684	281893.8	358118.6	29434.6	9%	76,225	27%	12	17	9
I680	Alameda	339819.1	337899.1	335140	-4679.1	-1%	(2,759)	-1%	10	11	10
I680	Contra Costa	325387	333929.9	322149.2	-3237.8	-1%	(11,781)	-4%	13	12	11
SR237	Santa Clara	150159.1	214705.2	321076.3	170917.2	114%	106,371	50%	22	22	12
SR24	Contra Costa	358477	385869.2	316934	-41543	-12%	(68,935)	-18%	9	9	13
SR4	Contra Costa	316446.5	294374.7	297691.1	-18755.4	-6%	3,316	1%	14	13	14
I80	San Francisco	329426.7	351492.7	286665.6	-42761.1	-13%	(64,827)	-18%	11	10	15
SR92	San Mateo	233705.2	276944.8	278335.8	44630.6	19%	1,391	1%	17	18	16
SR84	Alameda	219309.2	293707.2	260115.2	40806	19%	(33,592)	-11%	19	14	17
I80	Contra Costa	376082.2	287932.8	257626.9	-118455.3	-31%	(30,306)	-11%	8	15	18
I80	Solano	316386.8	206599.5	252995.8	-63391	-20%	46,396	22%	15	24	19
I680	Santa Clara	119742.9	211414	233413.7	113670.8	95%	22,000	10%	27	23	20
SR37	Solano	231732.7	195959.4	212598.1	-19134.6	-8%	16,639	8%	18	25	21
SR17	Santa Clara	169446.2	284038.4	201105.9	31659.7	19%	(82,933)	-29%	21	16	22
I280	San Mateo	149110.4	267667.6	194263.2	45152.8	30%	(73,404)	-27%	23	19	23
US101	Marin	262563	222913.9	178750.7	-83812.3	-32%	(44,163)	-20%	16	21	24
SR238	Alameda	173536.3	239152.9	160963.5	-12572.8	-7%	(78,189)	-33%	20	20	25
SR92	Alameda	146105.2	150863.4	140680.3	-5424.9	-4%	(10,183)	-7%	24	28	26
I580	Contra Costa	84197.7	102907.6	138708.1	54510.4	65%	35,801	35%	31	30	27
I880	Santa Clara	126325.1	157392.9	138096.9	11771.8	9%	(19,296)	-12%	26	27	28
SR37	Sonoma	135306.8	169241.3	118383.2	-16923.6	-13%	(50,858)	-30%	25	26	29
SR87	Santa Clara	108874.6	111226.4	100637.5	-8237.1	-8%	(10,589)	-10%	29	29	30
SR242	Contra Costa	39164.8	66967	87874.5	48709.7	124%	20,908	31%	35	34	31
SR24	Alameda	81221.4	100728.3	85248.4	4027	5%	(15,480)	-15%	32	31	32
SR12	Solano	115480	74324	80057.4	-35422.6	-31%	5,733	8%	28	32	33
I280	San Francisco	61857.5	70530.2	69358.4	7500.9	12%	(1,172)	-2%	33	33	34
SR37	Marin	50813.8	57980	61091.1	10277.3	20%	3,111	5%	34	35	35
I680	Solano	37653.6	39269	39507.2	1853.6	5%	238	1%	36	36	36
SR152	Santa Clara	7322.7	28680.7	23431.2	16108.5	220%	(5,250)	-18%	37	37	37
SR12	Napa	2367.5	13083.7	20353.5	17986	760%	7,270	56%	39	38	38
SR25	Santa Clara	4279.9	5481.7	9900.5	5620.6	131%	4,419	81%	38	39	39
SR1	San Francisco	0	2110.3	3040.3	3040.3		930	44%		41	40
SR160	Contra Costa	0	419.2	2464.3	2464.3		2,045	488%		44	41
I980	Alameda	418	1400.1	1517	1099	263%	117	8%	41	42	42
I580	Marin	1.7	46.2	398.1	396.4	23318%	352	762%	44	47	43
SR156	Santa Clara	68.7	100.2	306.4	237.7	346%	206	206%	42	45	44
I80	Napa	644.3	57	202.5	-441.8	-69%	146	255%	40	46	45
I780	Solano	0	641.8	84.5	84.5		(557)	-87%		43	46
SR29	Napa	19.5	2580.9	6.2	-13.3	-68%	(2,575)	-100%	43	40	47
I380	San Mateo	0	0	0	0		-				
I880S	Alameda	0	0	0	0		-				
SR13	Alameda	0	0	0	0		-				
TOTALS		10,453,651	11,736,400	11,622,084	1,168,433	11.2%	-114,316	-1.0%			