District 04 Mobility Performance Report

2018 Fourth Quarter

DEPARTMENT OF TRANSPORTATION

January 16, 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

2018 Fourth 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 35mph 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 fourth quarter, total delay equaled 10.3 million VHD at the 35mph speed threshold, and 19.7 million VHD at the 60mph threshold. Compared to the same quarter the year before, there was an 11.4 percent decrease in 35mph total quarterly delay and 8.2 percent decrease in 60mph 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 1 percent decrease in the number of good working detector that are no longer able to capture the congestion.

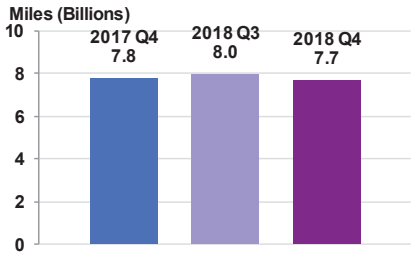
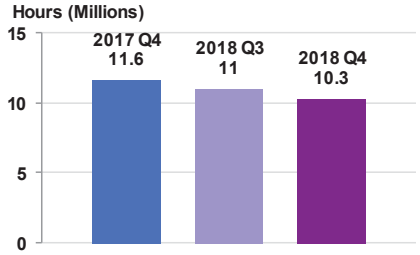
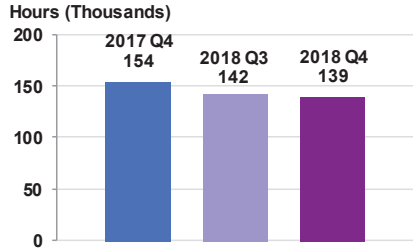
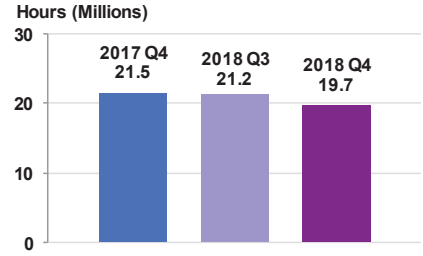
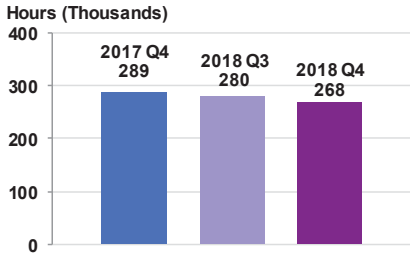
The average weekday delay experienced in this quarter was approximately 139 thousand VHD at 35 mph, and 268 thousand VHD at 60 mph. Thursday was the most congested day of the week. This was a change from Wednesday being the most congested day in the same quarter a year ago and the prior quarter.

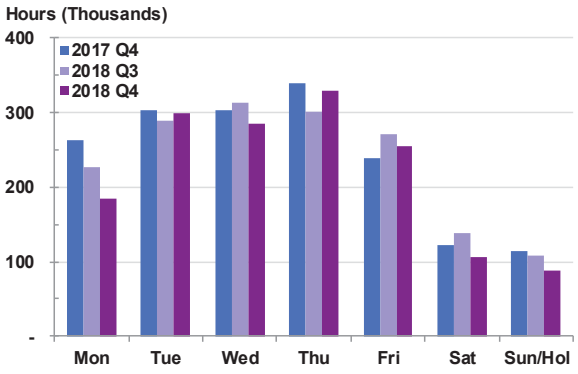
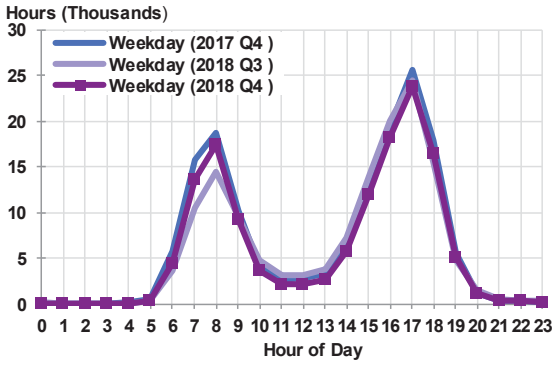
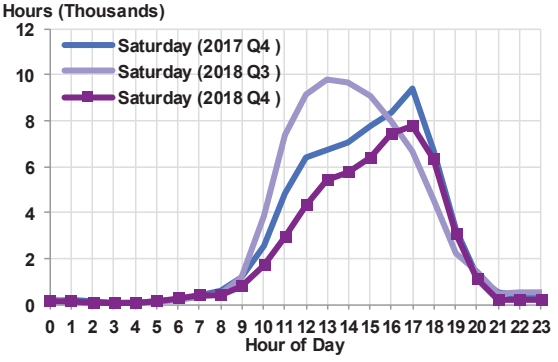
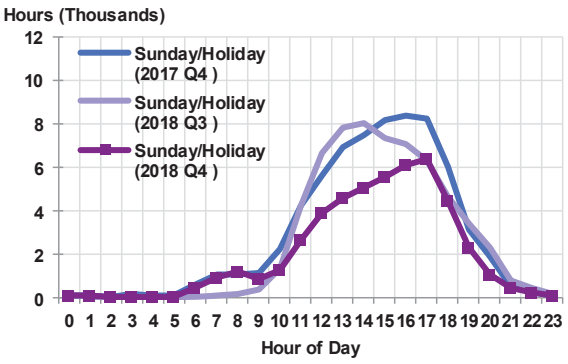
Alameda County with 3.3 million vehicle hours of total delay at 35mph during the fourth quarter was the most congested county in the District. This county experienced the largest magnitude decreases; a 19.2 percent decrease from a year ago and a 11.9 percent decrease from the previous quarter.

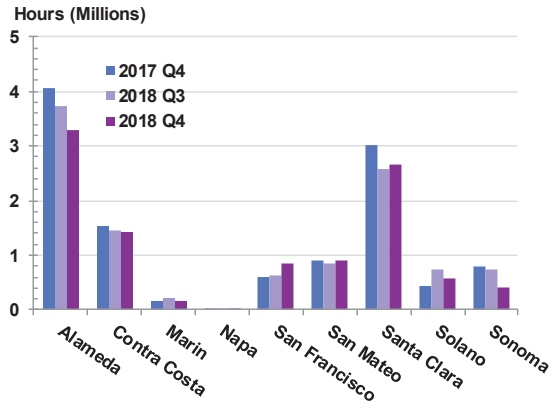
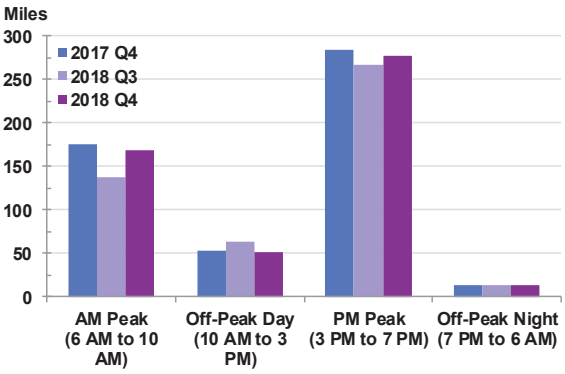
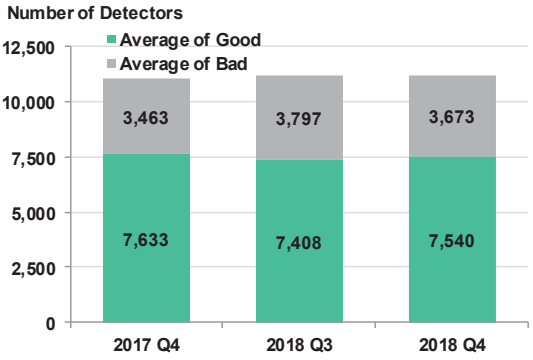
Santa Clara County with 2.7 million vehicle hours of total delay at 35 mph was second most congested county in the District.

Top Ten Bottlenecks for the 2018 Fourth Quarter:

Rank	CO	Freeway	Approximate Location	Period	Abs PM	CA PM	# of Active Days	Avg Extent (miles)	Total Delay (hours)	Avg Duration (hours)
1	SCL	I280-S	Bird Ave	PM	2.9	R2.85	58	5.1	192,934	3.0
2	SCL	US101-S	N 13th St-Oakland Rd	PM	387.3	37.61	55	6.6	185,662	3.6
3	ALA	I80-W	I-880S	AM	7.72	2.41	55	0.7	180,808	3.8
4	ALA	I80-E	University Ave	PM	11.0	5.7	59	3.0	118,260	3.8
5	CC	SR24-E	Pleasant Hill	PM	12.3	7.91	56	4.2	112,509	3.3
6	ALA	I880-N	29th Ave	AM	38.88	28.65	53	4.7	108,673	2.8
7	ALA	I80-W	W of Powell St	PM	9.0	3.68	43	2.1	102,019	3.4
8	CC	I80-E	Pinole Valley Rd	PM	21.9	8.59	59	4.3	92,662	3.2
9	ALA	I880-N	Alameda Creek	PM	22.2	12	56	3.2	92,135	3.4
10	SCL	SR85-S	Union Ave	PM	9.1	9.1	56	2.9	91,650	3.2

Measure	Graph	Percentage Change	
		Over one year ago	Over last quarter
Vehicle Miles of Travel (VMT)		-0.5%	-4.2%
Total Vehicle Hours of Delay (VHD) at 35 mph		-11.4%	-6.3%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		-9.4%	-2.2%
Total Vehicle Hours of Delay (VHD) at 60 mph		-8.2%	-6.9%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		-7.1%	-4.2%

Measure	Graph	Percentage Change		
Average Vehicle Hours of Delay by Day of Week at 60 mph		Largest Magnitude Decrease over one year ago Monday -30%	Largest Magnitude Decrease over last quarter Monday -18.9%	
		Largest Magnitude Increase over one year ago Friday 6.8%	Largest Magnitude Increase over last quarter Thursday 9.6%	
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago 7 AM -14.1%	Largest Magnitude Weekday Decrease over last quarter 3 PM -14.3%	
		Largest Magnitude Weekday Increase over one year ago 8 PM 0.2%	Largest Magnitude Weekday Increase over last quarter 7 AM 28.5%	
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 12 PM -32.6%	Largest Magnitude Saturday Decrease over last quarter 12 PM -52.7%	
		Largest Magnitude Saturday Increase over one year ago 5 AM 33%	Largest Magnitude Saturday Increase over last quarter 6 PM 38.5%	
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 3 PM -32.1%	Largest Magnitude Sun./Holiday Decrease over last quarter 1 PM -41.5%	
		Largest Magnitude Sun./Holiday Increase over one year ago 8 AM 9.8%	Largest Magnitude Sun./Holiday Increase over last quarter 8 AM 566.7%	

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago Alameda -19.2%	Largest Magnitude Decrease over last quarter Alameda -11.9%
		Largest Magnitude Increase over one year ago San Francisco 38.2%	Largest Magnitude Increase over last quarter San Francisco 34.7%
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph		Largest Magnitude Decrease over one year ago PM Peak -2.4%	Largest Magnitude Decrease over last quarter Off-Peak Day -20.9%
		Largest Magnitude Increase over one year ago Off-Peak Night 1.7%	Largest Magnitude Increase over last quarter AM Peak 23.7%
Average Number of Good and Bad Detectors		Change in Good over one year ago -1%	Change in Good over last quarter 2%
		Change in Bad over one year ago 6%	Change in Bad over last quarter -3%

Congestion by Route												
		Vehicle Hours of Delay at 35 mph			Difference 2018 Q4-2017 Q4		Difference 2018 Q4-2018 Q3		Rank		
Route	County	2017 Q4	2018 Q3	2018 Q4	Absolute	Percentage	Absolute	Percentage	2017 Q4	2018 Q3	2018 Q4
I880	Alameda	1,096,136	967,985	932,042	(164,094)	-15%	(35,943)	-4%	2	2	1
I80	Alameda	1,240,546	1,077,435	878,851	(361,695)	-29%	(198,584)	-18%	1	1	2
US101	Santa Clara	809,862	778,356	764,329	(45,533)	-6%	(14,028)	-2%	3	4	3
I580	Alameda	718,865	788,310	756,786	37,921	5%	(31,524)	-4%	5	3	4
I280	Santa Clara	625,236	429,165	536,473	(88,764)	-14%	107,307	25%	6	9	5
SR85	Santa Clara	565,166	512,697	533,237	(31,929)	-6%	20,541	4%	7	6	6
US101	San Mateo	515,218	436,275	500,718	(14,500)	-3%	64,443	15%	8	8	7
I680	Contra Costa	371,316	304,240	377,546	6,230	2%	73,305	24%	10	13	8
US101	Sonoma	722,893	630,905	376,699	(346,194)	-48%	(254,206)	-40%	4	5	9
SR24	Contra Costa	396,845	376,672	365,511	(31,333)	-8%	(11,161)	-3%	9	10	10
I80	Solano	195,575	472,370	301,598	106,023	54%	(170,772)	-36%	21	7	11
SR237	Santa Clara	288,734	326,751	300,452	11,718	4%	(26,299)	-8%	13	11	12
US101	San Francisco	304,303	316,201	291,716	(12,587)	-4%	(24,485)	-8%	11	12	13
SR4	Contra Costa	290,156	269,974	264,805	(25,351)	-9%	(5,169)	-2%	12	15	14
I80	Contra Costa	281,636	294,733	249,749	(31,887)	-11%	(44,984)	-15%	15	14	15
I80	San Francisco	220,919	220,104	233,908	12,989	6%	13,804	6%	20	18	16
I880	Santa Clara	228,893	209,659	232,042	3,149	1%	22,383	11%	19	20	17
SR1	San Francisco	2,114	25,139	218,805	216,690	10249%	193,665	770%	42	37	18
SR92	San Mateo	238,958	216,507	204,772	(34,186)	-14%	(11,736)	-5%	18	19	19
I680	Alameda	270,155	229,517	199,153	(71,002)	-26%	(30,365)	-13%	16	17	20
I280	San Mateo	155,382	187,895	192,712	37,331	24%	4,818	3%	24	22	21
SR92	Alameda	192,340	121,104	170,378	(21,962)	-11%	49,274	41%	22	25	22
SR37	Solano	125,126	191,796	141,669	16,543	13%	(50,127)	-26%	26	21	23
US101	Marin	158,197	92,528	135,340	(22,858)	-14%	42,812	46%	23	31	24
I680	Santa Clara	254,328	120,442	131,161	(123,167)	-48%	10,719	9%	17	26	25
SR238	Alameda	138,411	147,570	104,381	(34,030)	-25%	(43,189)	-29%	25	23	26
SR24	Alameda	112,006	138,143	103,269	(8,737)	-8%	(34,874)	-25%	28	24	27
I280	San Francisco	83,983	65,842	100,255	16,272	19%	34,413	52%	32	34	28
SR87	Santa Clara	110,217	73,641	99,709	(10,508)	-10%	26,069	35%	29	33	29
SR12	Solano	101,386	55,236	86,324	(15,062)	-15%	31,088	56%	30	35	30
I580	Contra Costa	117,834	112,836	80,736	(37,098)	-31%	(32,099)	-28%	27	28	31
SR242	Contra Costa	81,304	76,524	78,640	(2,664)	-3%	2,117	3%	33	32	32
SR84	Alameda	283,379	259,795	52,930	(230,449)	-81%	(206,865)	-80%	14	16	33
SR17	Santa Clara	96,615	119,912	48,324	(48,292)	-50%	(71,588)	-60%	31	27	34
I680	Solano	8,327	33,089	36,004	27,677	332%	2,915	9%	39	36	35
SR37	Sonoma	73,478	97,808	23,331	(50,147)	-68%	(74,477)	-76%	34	30	36
SR12	Napa	27,111	16,474	21,032	(6,080)	-22%	4,558	28%	36	39	37
SR152	Santa Clara	34,653	13,931	19,050	(15,603)	-45%	5,120	37%	35	40	38
SR37	Marin	14,845	22,889	17,462	2,617	18%	(5,428)	-24%	38	38	39
I580	Marin	488	107,041	7,689	7,202	1477%	(99,352)	-93%	44	29	40
SR25	Santa Clara	7,809	9,557	7,498	(311)	-4%	(2,059)	-22%	40	41	41
I980	Alameda	20,886	6,926	5,929	(14,957)	-72%	(997)	-14%	37	42	42
I80	Napa	119	686	192	73	62%	(494)	-72%	45	43	43
SR156	Santa Clara	104	0	28	(77)	-74%	28		46		44
I880S	Alameda	0	0	7	7		7				45
SR160	Contra Costa	2,335	190	6	(2,329)	-100%	(184)	-97%	41	46	46
SR13	Alameda	0	0	6	6		6				47
I780	Solano	601	626	0	(601)	-100%	(626)	-100%	43	44	48
SR29	Napa	0	196	0	(0)	-100%	(196)	-100%	47	45	
	TOTALS =	11,584,790	10,955,670	10,183,251	-1,401,539	-12.1%	-772,419	-7.1%			