District 04 Mobility Performance Report

2020 1st Quarter

DEPARTMENT OF TRANSPORTATION

May 1, 2020

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

2020 1st 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 first quarter, the total delay equaled 7.1 million VHD at the 35 mph speed threshold, and 14.8 million VHD at the 60 mph threshold. Compared to the same quarter the year before, there was a -24.9% decrease in the 35 mph total quarterly delay and -21% decrease in the 60 mph total quarterly delay.

The average weekday delay experienced in this quarter was approximately 99 thousand VHD at 35 mph, and 211 thousand VHD at 60 mph. Wednesday was the most congested day of the week. Tuesday, which was the most congested day of the week a year ago, had the largest magnitude decrease of -26% since a year ago. Thursday, which was the most congested day of the week last quarter, had the largest magnitude decrease of -29.8% from last quarter.

Santa Clara County with 2.22 million vehicle hours of total delay at 35 mph during the first quarter was the most congested county in the District. Alameda County with 2.02 million vehicle hours of total delay at 35 mph was the second most congested county in the District. Alameda experienced the largest magnitude decrease of -27.4% over one year ago and -31.8% over the last quarter.

From the Top 10 Bottlenecks for the 1st Quarter, the top three locations are as follows:

- SCL I280 Southbound at Bird Avenue during PM period (Rank 1): 140,600 vehicle hours of delay
- SCL US101 Southbound at N. 13th St-Oakland Rd during PM period (Rank 2): 132,800 vehicle hours of delay
- CC I80 Eastbound at Pinole Valley Rd during PM period (Rank 3): 97,200 vehicle hours of delay

The top 7 locations have been on last quarter's top 10 bottleneck list.

There are 3 new locations that made it on the list:

- SCL US101 Southbound at Burnett Ave during PM period (Rank 8): Was Rank 14 last quarter

- SCL I680 Southbound at Berryessa Rd during PM period (Rank 9): Was Rank 15 last quarter
- ALA I880 Northbound at 29th Ave during AM period (Rank 10): Was Rank 11 last quarter

These three locations dropped off the list from last quarter:

- ALA I880 Northbound at Tennyson during PM period: Previously Rank 6, now Rank 12
- ALA I880 Northbound at Auto Mall Pkwy during PM period: Previously Rank 10, now Rank 51 due to lower congestion levels resulting in two separate smaller bottlenecks
- ALA I580 Eastbound at Lakeshore Ave during PM period: Previously Rank 10, now Rank 19

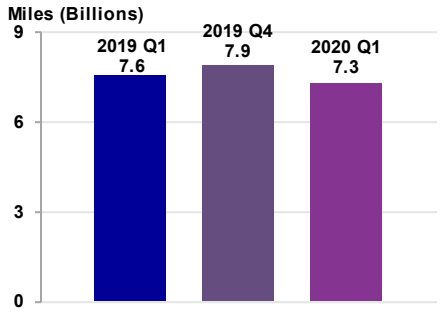
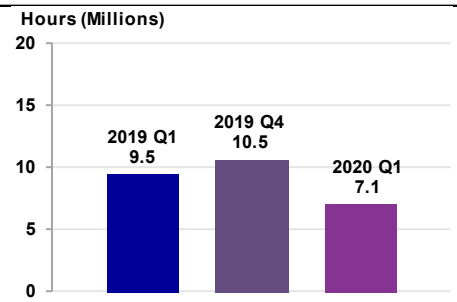
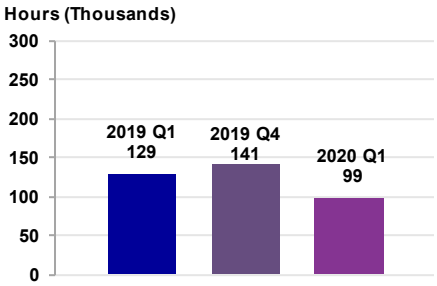
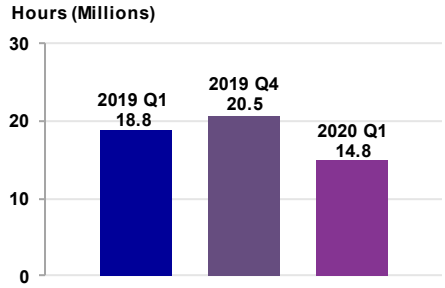
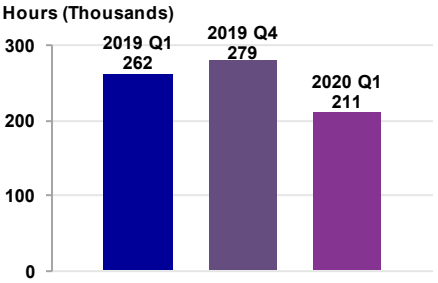
In general, the first quarter had a total decrease in vehicle hours of delay and vehicle miles of travel in all nine counties. This is likely due to the Coronavirus COVID-19 pandemic. On March 4, 2020, the State of California declared a State of Emergency due to the outbreak. By March 16, 2020, six counties: SCL, SM, SF, ALA, CC, and MRN had announced shelter in place orders which was quickly followed by a California Statewide order three days later. By the last week of March, the Bay Area's weekly average VMT and VHD at 35 mph compared to the same time a year ago dropped -37% and -90%, respectively.

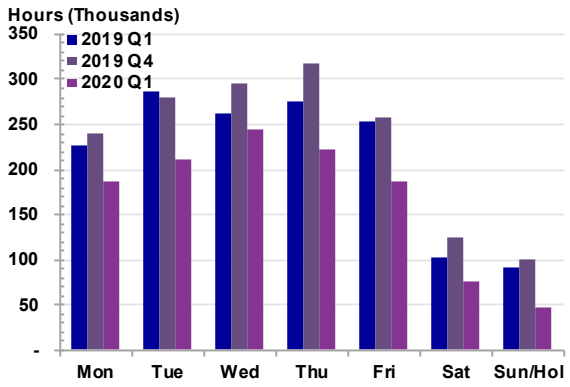
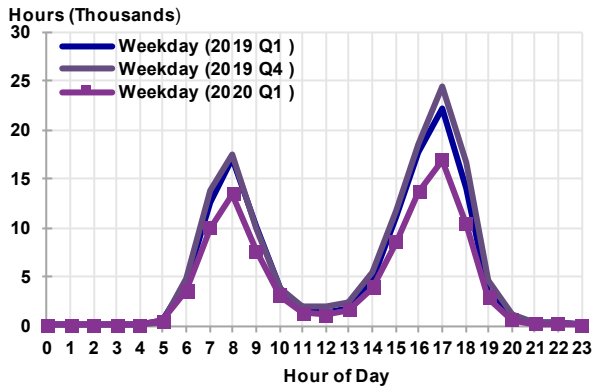
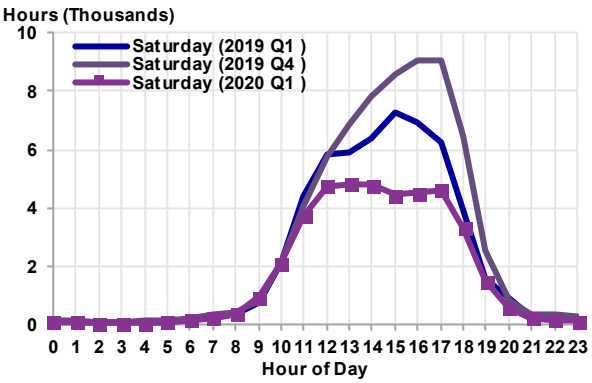
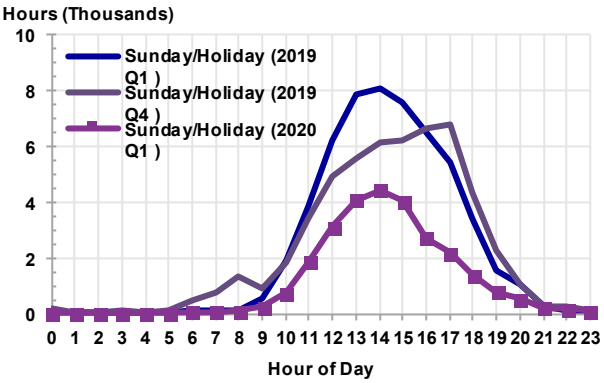
The effects of the COVID-19 shelter in place orders are seen in the decreases in delays at the Top 10 Bottleneck Locations. Rank 1, SCL I280 Southbound at Bird Ave bottleneck, saw a -37% decrease in total delay dropping from 223,800 to 140,600 vehicle hours of delay. Rank 2, SCL US101 Southbound at North 13th St-Oakland Rd bottleneck, had a decrease of -45% dropping from 239,300 to 132,800 vehicle hours of delay.

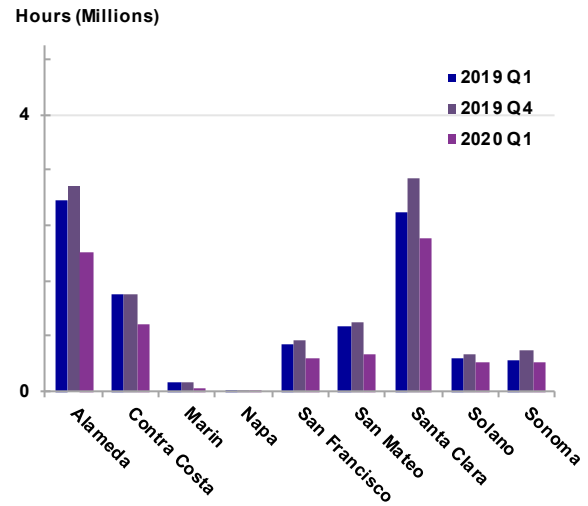
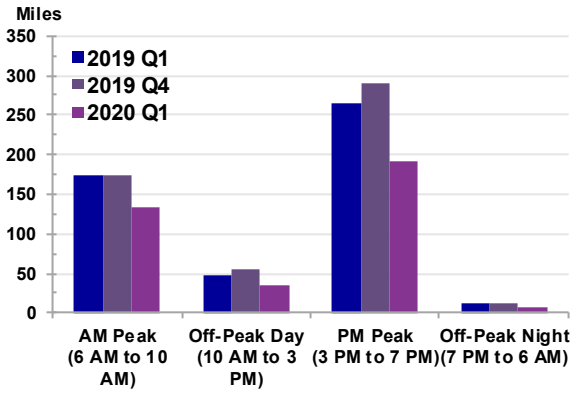
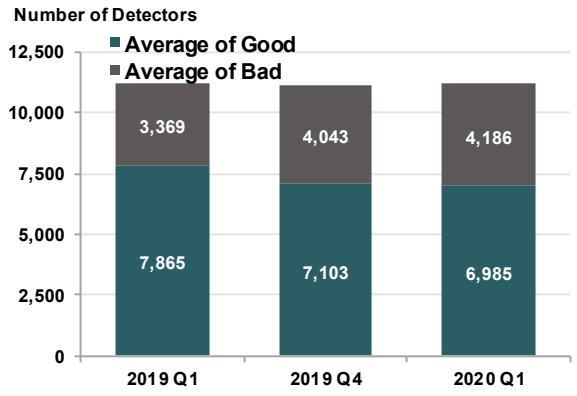
Regarding vehicle detector health, there was a -2% decrease in the number of good working detector and 4% increase in the number of bad detectors over last quarter that are no longer able to capture the congestion.

Top Ten Bottlenecks for the 2020 1st 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	I280-S	Bird Ave	PM	2.85	R2.85	50	4.5	140,600	3.6
2	SCL	US101-S	N 13th St – Oakland Rd	PM	387.28	37.61	51	4.7	132,800	4.0
3	CC	I80-E	Pinole Valley Rd	PM	21.92	8.59	51	4.9	97,200	2.2
4	ALA	I80-W	I-880S	AM	7.72	2.41	50	0.5	97,100	3.6
5	CC	SR24-E	Pleasant Hill Rd	PM	12.26	7.91	50	5.9	94,900	3.2
6	ALA	I80-E	University Ave	PM	11.01	5.70	50	3.0	89,100	3.2
7	SCL	SR85-S	Union Ave	PM	9.10	9.10	50	2.4	72,100	3.2
8	SCL	US101-S	Burnett Ave	PM	368.11	R18.8	51	3.4	70,800	3.8
9	SCL	I680-S	Berryessa Rd	PM	3.71	3.72	50	3.5	69,400	2.5
10	ALA	I880-N	29th Ave	AM	38.88	28.65	48	4.0	69,300	2.6

Measure	Graph	Percentage Change	
		Over one year ago	Over last quarter
Vehicle Miles of Travel (VMT)		-3.7%	-7.9%
Total Vehicle Hours of Delay (VHD) at 35 mph		-24.9%	-31.8%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		-23.7%	-30%
Total Vehicle Hours of Delay (VHD) at 60 mph		-21%	-27.5%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		-19.5%	-24.5%

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph		Largest Magnitude Decrease over one year ago Tuesday -26%	Largest Magnitude Decrease over last quarter Thursday -29.8%
		Largest Magnitude Increase over one year ago –	Largest Magnitude Increase over last quarter –
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago 5 PM -24.1%	Largest Magnitude Weekday Decrease over last quarter 5 PM -30.9%
		Largest Magnitude Weekday Increase over one year ago –	Largest Magnitude Weekday Increase over last quarter 5 AM 20.7%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 3 PM -38.9%	Largest Magnitude Saturday Decrease over last quarter 4 PM -50.3%
		Largest Magnitude Saturday Increase over one year ago 9 AM 25%	Largest Magnitude Saturday Increase over last quarter 9 AM 12.1%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 4 PM -58%	Largest Magnitude Sun./Holiday Decrease over last quarter 5 PM -67.8%
		Largest Magnitude Sun./Holiday Increase over one year ago 10 PM 18.2%	Largest Magnitude Sun./Holiday Increase over last quarter –

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago Alameda -27.4% Largest Magnitude Increase over one year ago –	Largest Magnitude Decrease over last quarter Alameda -31.8% Largest Magnitude Increase over last quarter –
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph		Largest Magnitude Decrease over one year ago PM Peak -27.6% Largest Magnitude Increase over one year ago –	Largest Magnitude Decrease over last quarter PM Peak -33.7% Largest Magnitude Increase over last quarter –
Average Number of Good and Bad Detectors		Change in Good over one year ago -11% Change in Bad over one year ago 24%	Change in Good over last quarter -2% Change in Bad over last quarter 4%

Congestion by Route											
		Vehicle Hours of Delay at 35 mph			Difference 2020 Q1-2019 Q1		Difference 2020 Q1-2019 Q4		Rank		
Route	County	2019 Q1	2019 Q4	2020 Q1	Absolute	Percentage	Absolute	Percentage	2019 Q1	2019 Q4	2020 Q1
US101	Santa Clara	767593.8	914742.6	664198.3	-103395.5	-13%	(250,544)	-27%	3	2	1
I580	Alameda	784028	917040.3	656078.7	-127949.3	-16%	(260,962)	-28%	2	1	2
I880	Alameda	830744.7	807477.7	550837.6	-279907.1	-34%	(256,640)	-32%	1	3	3
SR85	Santa Clara	495425.7	651403.8	507723.4	12297.7	2%	(143,680)	-22%	6	5	4
I80	Alameda	565977.5	694502	457262.2	-108715.3	-19%	(237,240)	-34%	4	4	5
US101	Sonoma	370089.3	533258.4	403512.5	33423.2	9%	(129,746)	-24%	9	6	6
I280	Santa Clara	464498.3	494711.4	337196.1	-127302.2	-27%	(157,515)	-32%	7	7	7
US101	San Mateo	541315.1	462573.9	300151.6	-241163.5	-45%	(162,422)	-35%	5	8	8
SR237	Santa Clara	276116.6	361923.7	270471.1	-5645.5	-2%	(91,453)	-25%	13	9	9
US101	San Francisco	310657.4	359928	248537.9	-62119.5	-20%	(111,390)	-31%	11	10	10
I80	Contra Costa	252154.3	357230.2	228363.3	-23791	-9%	(128,867)	-36%	15	11	11
I680	Contra Costa	315963.9	355498.8	221229.9	-94734	-30%	(134,269)	-38%	10	12	12
I80	Solano	259880.5	314385.8	214471	-45409.5	-17%	(99,915)	-32%	14	13	13
SR4	Contra Costa	297427.7	262255.4	212329.9	-85097.8	-29%	(49,926)	-19%	12	16	14
SR24	Contra Costa	372233.8	294270.4	192892	-179341.8	-48%	(101,378)	-34%	8	14	15
I880	Santa Clara	196691.4	215034.8	138074.6	-58616.8	-30%	(76,960)	-36%	18	18	16
SR92	San Mateo	182478.3	260671.3	129136.4	-53341.9	-29%	(131,535)	-50%	19	17	17
SR92	Alameda	139290.7	195658.5	127134.8	-12155.9	-9%	(68,524)	-35%	21	19	18
I680	Santa Clara	161206.1	172420.5	125544.9	-35661.2	-22%	(46,876)	-27%	20	20	19
SR87	Santa Clara	128634.8	136858.3	120414.8	-8220	-6%	(16,444)	-12%	26	23	20
SR37	Solano	138486.3	130238.7	111941.3	-26545	-19%	(18,297)	-14%	23	25	21
I280	San Mateo	219305.7	271671.4	106765.5	-112540.2	-51%	(164,906)	-61%	17	15	22
I280	San Francisco	132491.9	98848.7	101367	-31124.9	-23%	2,518	3%	25	28	23
I680	Alameda	234889.5	137070.3	93572.4	-141317.1	-60%	(43,498)	-32%	16	22	24
SR238	Alameda	134072.3	129597.3	89741.5	-44330.8	-33%	(39,856)	-31%	24	26	25
I80	San Francisco	105158.8	150117.5	74693	-30465.8	-29%	(75,425)	-50%	28	21	26
SR242	Contra Costa	88300.2	80321.6	70169.3	-18130.9	-21%	(10,152)	-13%	30	30	27
SR12	Solano	79256	65637.9	63914.8	-15341.2	-19%	(1,723)	-3%	31	32	28
SR24	Alameda	100431.3	84122	52617.1	-47814.2	-48%	(31,505)	-37%	29	29	29
US101	Marin	108843.8	111276.3	52386.4	-56457.4	-52%	(58,890)	-53%	27	27	30
SR1	San Francisco	139214.8	132171.6	51482.4	-87732.4	-63%	(80,689)	-61%	22	24	31
SR17	Santa Clara	71438.4	78141.4	43711.9	-27726.5	-39%	(34,430)	-44%	33	31	32
I580	Contra Costa	78384.8	55281.3	34086.5	-44298.3	-57%	(21,195)	-38%	32	33	33
SR37	Sonoma	69647.6	53807.6	26357.1	-43290.5	-62%	(27,451)	-51%	34	34	34
SR12	Napa	26155.1	29231.9	24954.6	-1200.5	-5%	(4,277)	-15%	35	36	35
I680	Solano	13869.6	19619.6	16484.4	2614.8	19%	(3,135)	-16%	37	37	36
SR152	Santa Clara	8723.8	43681.8	10057.4	1333.6	15%	(33,624)	-77%	40	35	37
I980	Alameda	12076.4	12498	7253.2	-4823.2	-40%	(5,245)	-42%	38	38	38
SR25	Santa Clara	8150.5	7990	6256.7	-1893.8	-23%	(1,733)	-22%	41	40	39
I580	Marin	16551.7	6939.4	2920.9	-13630.8	-82%	(4,019)	-58%	36	41	40
SR37	Marin	10819.7	11472.1	276.1	-10543.6	-97%	(11,196)	-98%	39	39	41
I780	Solano	280.1	1658.8	249.4	-30.7	-11%	(1,409)	-85%	43	42	42
I80	Napa	241.3	294.6	46.7	-194.6	-81%	(248)	-84%	44	43	43
SR13	Alameda	18.2	18.2	17.6	-0.6	-3%	(1)	-3%	46	45	44
I880S	Alameda	23.4	11.7	11.7	-11.7	-50%	-	0%	45	48	45
SR156	Santa Clara	9.9	12.5	0	-9.9	-100%	(13)	-100%	47	47	
SR160	Contra Costa	1002.3	15	0	-1002.3	-100%	(15)	-100%	42	46	
SR29	Napa	0	62.5	0	0		(63)	-100%		44	
SR84	Alameda	0	0	0	0		-				
TOTALS		**9,510,251**	**10,473,656**	**7,146,896**	**-2,363,355**	**-24.9%**	**-3,326,760**	**-31.8%**			