District 04 Mobility Performance Report

2023 3rd Quarter

ABBREVIATIONS

Abs	Absolute
Avg	Average
CA	California
CO	County
MPR	Mobility Performance Report
PeMS	Performance Measurement System
PM	Postmile
Q	Quarter

2023 3rd 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:

- o Vehicle Miles of Travel (VMT)

- o Vehicle Hours of Delay (VHD)

- o Lost Lane Miles (equivalent lost productivity)

- o 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.

Over three years have passed since the Statewide Shelter-In-Place (SIP) took effect on March 19, 2020. To combat the pandemic, vaccinations and boosters were being administered to all eligible individuals based on state guidelines. On June 15th, 2021, California State Governor Gavin Newsom announced the reopening of California. During Q3 2023, there was a slight 0.3% decrease in VMT compared to the same quarter a year ago, with VMT decreasing from 7.75 billion in Q3 2022 to 7.73 billion in Q3 2023. In the third quarter, we see an increase of 1.2% (93 million) in VMT from the previous quarter's VMT of 7.64 billion.

Although VMT is essentially flat compared to last year, VHD is increasing significantly. Compared to the same quarter the year before, there was a 37.0% increase from 5.4 million to 7.4 million VHD in the 35 mph total quarterly delay, and a 23.9% increase from 13.0 million to 16.1 million VHD in the 60 mph total quarterly delay. A quarterly increase was seen in VHD as well as VMT. Compared to the previous quarter, Q2 saw an 11.7% increase in VHD at 35 mph and 8.5% increase in VHD at 60 mph.

The average weekday delay in this quarter has increased compared to the year before. Last year, during the same quarter, there was a delay of 71 thousand VHD at 35 mph, and 175 thousand VHD at 60 mph. This quarter, there was a delay of 98 thousand VHD at 35 mph which is a 37.4% increase, and 217 thousand VHD at 60 mph which is a 24.4% increase. Thursday with 244 thousand VHD was the most congested day of the week in Q3. Thursday has also been the most congested day of the week in same quarter a year ago and last quarter. Tuesday had the largest magnitude increase of 72 thousand VHD at 60 mph which was a 41.1% increase from the same quarter last year. Each day of the week observed magnitude increases in average VHD from the same quarter last year. Tuesday had the largest magnitude increase of 35 thousand (16.3%) VHD at 60 mph compared to last quarter. When comparing between Q3 2023 and Q3 2022, each day of the week observed magnitude increases in average VHD compared to last quarter.

Looking at the Average VHD at 35 mph by hour of the day for weekdays, there was an increase in the AM commute period congestion compared to last year. The largest magnitude hourly change for AM hours compared to the same quarter a year ago occurred at 8 AM with an

increase of 38.8%. The largest magnitude hourly weekday increase over last quarter occurred at 8 AM with an increase of 22.6%. For the PM hours, the largest magnitude hourly increase of 29.9%, occurred at 5 PM when comparing with the same quarter last year, and the largest magnitude increase of 15.2% occurred at 6 PM when comparing with last quarter. The weekday peak hour average delay of 16,880 VHD for this quarter occurs at 5 PM which is the same as last quarter and a year ago. Compared to last quarter's peak hour VHD of 16,308 VHD, there was a 3.51% increase. Compared to a year ago, there was a 29.9% increase from a VHD of 12,995. There was no hourly decrease in VHD compared to a year ago on Saturday. However, there was decrease compared to the previous quarter on Saturday with the largest decrease occurring at 2 AM with a change of -9.96%. The largest single hour increase on Saturday compared to a year ago occurred at 11 AM with a change of 61.4%, and when compared with last quarter it also occurred at 11 AM with an increase of 44.7%. As for the Sunday/Holidays, there was no decrease compared to the previous year, but the largest decrease compared to last quarter was -22.13% at 9 PM. The largest magnitude increase over a year ago is 30.1% at 4 PM. The largest magnitude increase over last quarter occurred at 11 AM with a change of 44.6%.

Similarly to the same quarter last year and the previous quarter, Alameda County was the most congested county in the District with 3,076,000 vehicle hours of total delay at 35 mph during the third quarter. Santa Clara County was the second most congested county in the District with 1,820,000 vehicle hours of total delay at 35 mph. Contra Costa County was the third most congested county in the District with 1,080,000 vehicle hours of total delay at 35 mph. Alameda County experienced the largest magnitude increase of 52.1% compared to the same quarter last year, while San Francisco County experienced the largest magnitude decrease of -6% compared to the same quarter last year.

From the Top 10 Bottlenecks for the 3rd Quarter, eight bottleneck locations occurred during the PM, and two bottleneck locations occurred in the AM period. The top three locations are as follows:

- o CC SR4 Westbound, Willow Pass Road during AM period (Rank 1, previously ranked 4 in Q2 2023): 150,481 vehicle hours of delay

- o CC I80 Eastbound, 1200' East of Pinole Valley Road during PM period (Rank 2, previously ranked 1 in Q2 2023): 147,084 vehicle hours of delay

- o ALA I880 Northbound, North of Eldridge POC during PM period (Rank 3, previously ranked 2 in Q2 2023): 134,595 vehicle hours of delay

This quarter, seven of the ten locations have resurfaced from last quarter's top 10 bottleneck list (bottlenecks in ranks 8, 9, and 10 are new). Rank 1 (previously Rank 4 in Q2 2023), CC SR4 Westbound AM, Willow Pass Road increased 25.4% from 119,977 to 150,481 VHD. Rank 2 (previously Rank 1 in Q2 2023), CC I80 Eastbound PM, Pinole Valley Road decreased 19.0% from 181,645 to 147,084 VHD. Rank 3 (previously Rank 2 in Q2 2023), ALA I880 Northbound PM, North of Eldridge POC decreased 11.3% from 151,710 to 134,594 VHD. Rank 4 (previously Rank 3 in Q2 2023), SCL US101 Southbound PM, Laurel Rd, decreased 6.5% from 132,896 to 124,240 VHD. Rank 5 (previously Rank 7 in Q1 2023), ALA I80 Westbound AM, Gilman St increased 16.4% from 92,042 to 107,125 VHD. Rank 6 (previously ranked 7 in Q2 2023), ALA I80 Eastbound PM, Gilman St increased 31.0% from 79,489 to 104,128 VHD. Rank 7 (previously Rank 5 in Q2 2023), CC I680 Northbound PM, 100' N of Oak Park Blvd increased 3.2% from 98,691 to 101,837 VHD. Rank 8 (previously Rank 33 in Q2 2023), SCL SR237 Eastbound PM, Zanker Rd increased 172.9% from 33,838 to 92,335 VHD and is new on the list this quarter. Rank 9 (previously Rank 13 in Q2 2023), ALA I880 Northbound PM, Auto Mall Pkwy increased 28.8% from 59,625 to 76,824 VHD and is new on the list this quarter. Rank 10 (previously Rank 42 in Q2 2023), SCL SR280 Southbound PM, Bascom & Leland increased 179.9% from 26,096 to 73,031 VHD and is new on the list this quarter.

A plurality of locations across District 4 had an increase in activity compared to a year ago. On the Congestion by Route table, 36 out of the 49 Route Counties listed have increases in congestion compared to a year ago, 3 remained unchanged, and 13 show a decrease. Compared to last quarter, most locations have increased. On the Congestion by Route table, 38 out of the 49 Route Counties listed have increased when comparing to last quarter. Several routes experienced large swings in congestion compared to this quarter last year. This is generally due to detectors

being fixed, being deactivated due to a construction project, or added in places where they did not previously exist.

Regarding vehicle detector health, there was a 6% increase in the number of good detectors, which are functional, and a 7% decrease in the number of bad detectors, which are no longer able to measure congestion, compared to the same quarter a year ago. Compared to last quarter, there was an insignificant decrease of 0.3% in the number of good detectors and a corresponding insignificant decrease of 0.4% in the number of bad detectors.

Top Ten Bottlenecks for the 2023 3rd Quarter:

Rank	County	Fwy	Approximate Location	Shift	Absolute Postmile	Begin CA PM	Avg Extent (miles)	Total Delay (veh-hrs)	Total Duration (hours)	# of active days	Latitude	Longitude
1	Contra Costa	SR4-W	Willow Pass Rd (Concord)	AM	16.438	R16.77	6.97	150,481	178	63	38.01361	-121.99884
2	Contra Costa	I80-E	Pinole Valley Rd	PM	21.923	8.59	5.14	147,084	220	61	37.99801	-122.28511
3	Alameda	I880-N	N of Eldridge POC	PM	26.317	16.09	5.63	134,595	161	63	37.63718	-122.08826
4	Santa Clara	US101-S	Laurel Rd	PM	366.467	17.16	5.09	124,240	219	63	37.14532	-121.64531
5	Alameda	I80-W	Gilman St	AM	11.91	6.6	3.18	107,125	187	61	37.87741	-122.30724
6	Alameda	I80-E	Gilman St	PM	11.95	6.64	3.37	104,128	167	61	37.87816	-122.30721
7	Contra Costa	I680-N	100' N of Oak Park Blvd	PM	48.502	17.01	5.24	101,837	125	61	37.93565	-122.0601
8	Santa Clara	SR237-E	Zanker Rd	PM	8.222	8.17	7.22	92,335	161	62	37.42093	-121.93674
9	Alameda	I880-N	Auto Mall Pkwy	PM	15.027	4.8	3.15	76,824	286	62	37.50831	-121.96848
10	Santa Clara	I280-S	Bascom & Leland	PM	6.082	4.7	5.04	73,031	132	55	37.31663	-121.95244

Measure	Graph	Percentage Change	
		Over one year ago	**Over last quarter**
Vehicle Miles of Travel (VMT)	Miles (Billions): 2022 Q3 = 7.75, 2023 Q2 = 7.64, 2023 Q3 = 7.73	-0.3% ▼	1.2% ▲
Total Vehicle Hours of Delay (VHD) at 35 mph	Hours (Millions): 2022 Q3 = 5.4, 2023 Q2 = 6.6, 2023 Q3 = 7.4	37% ▲	11.7% ▲
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	Hours (Thousands): 2022 Q3 = 71, 2023 Q2 = 88, 2023 Q3 = 98	37.4% ▲	10.9% ▲
Total Vehicle Hours of Delay (VHD) at 60 mph	Hours (Millions): 2022 Q3 = 13, 2023 Q2 = 14.9, 2023 Q3 = 16.1	23.9% ▲	8.5% ▲
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	Hours (Thousands): 2022 Q3 = 175, 2023 Q2 = 200, 2023 Q3 = 217	24.4% ▲	8.6% ▲

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 –
		Largest Magnitude Increase over one year ago **Tuesday 41.1%**	Largest Magnitude Increase over last quarter **Tuesday 16.3%**
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 **1 AM -15.8%**
		Largest Magnitude Weekday Increase over one year ago **5 PM 29.9%**	Largest Magnitude Weekday Increase over last quarter **8 AM 22.6%**
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 **2 AM -10%**
		Largest Magnitude Saturday Increase over one year ago **11 AM 61.4%**	Largest Magnitude Saturday Increase over last quarter **11 AM 44.7%**
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 **9 PM -22.1%**
		Largest Magnitude Sun./Holiday Increase over one year ago **4 PM 30.1%**	Largest Magnitude Sun./Holiday Increase over last quarter **11 AM 44.6%**

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph	Hours (Millions) chart — 2022 Q3, 2023 Q2, 2023 Q3 by county (Alameda, Contra Costa, Marin, Napa, San…, San Mateo, Santa Clara, Solano, Sonoma)	**Largest Magnitude Decrease over one year ago** San Francisco -6.3% ⬇ **Largest Magnitude Increase over one year ago** Alameda 52.1% ⬆	**Largest Magnitude Decrease over last quarter** Sonoma -3.9% ⬇ **Largest Magnitude Increase over last quarter** Santa Clara 14.7% ⬆
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph	Miles chart — 2022 Q3, 2023 Q2, 2023 Q3 by AM Peak (6 AM to 10 AM), Off-Peak Day (10 AM to 3 PM), PM Peak (3 PM to 7 PM), Off-Peak Night (7 PM to 6 AM)	**Largest Magnitude Decrease over one year ago** — **Largest Magnitude Increase over one year ago** PM Peak 22.9% ⬆	**Largest Magnitude Decrease over last quarter** — **Largest Magnitude Increase over last quarter** AM Peak 15.5% ⬆
Average Number of Good and Bad Detectors	Number of Detectors chart — Average of Good, Average of Bad. 2022 Q3: 5,276 / 6,352; 2023 Q2: 4,896 / 6,732; 2023 Q3: 4,913 / 6,715	**Change in Good over one year ago** 6% ⬆ **Change in Bad over one year ago** -7% ⬇	**Change in Good over last quarter** -0.3% ⬇ **Change in Bad over last quarter** 0.4% ⬆

		Vehicle Hours of Delay at 35 mph			Difference 2023 Q3-2022 Q3		Difference 2023 Q3-2023 Q2		Rank		
Route	County	2022 Q3	2023 Q2	2023 Q3	Absolute	Percentage	Absolute	Percentage	2022 Q3	2023 Q2	2023 Q3
I580	Alameda	529,042	1,033,577	1,102,920	573,878	108.5%	69,343	6.7%	2	1	1
US101	Santa Clara	497,091	702,526	841,228	344,138	69.2%	138,703	19.7%	3	3	2
I880	Alameda	644,987	703,084	768,710	123,723	19.2%	65,626	9.3%	1	2	3
I80	Alameda	486,236	465,786	479,794	-6,442	-1.3%	14,008	3.0%	4	4	4
SR4	Contra Costa	203,223	194,464	305,079	101,856	50.1%	110,615	56.9%	7	11	5
I80	Contra Costa	196,354	263,793	273,040	76,685	39.1%	9,247	3.5%	8	5	6
SR85	Santa Clara	161,742	218,170	263,443	101,701	62.9%	45,273	20.8%	10	8	7
I80	Solano	250,942	223,738	251,075	133	0.1%	27,336	12.2%	5	7	8
I680	Alameda	67,049	244,636	247,581	180,532	269.3%	2,946	1.2%	22	6	9
US101	San Mateo	234,766	130,977	194,874	-39,891	-17.0%	63,897	48.8%	6	18	10
US101	San Francisco	159,182	150,344	193,839	34,657	21.8%	43,496	28.9%	11	15	11
SR24	Alameda	37,358	200,863	192,961	155,604	416.5%	-7,902	-3.9%	33	10	12
SR37	Solano	162,122	151,966	176,925	14,803	9.1%	24,960	16.4%	9	14	13
I280	Santa Clara	157,387	209,710	175,017	17,630	11.2%	-34,693	-16.5%	12	9	14
I680	Contra Costa	156,386	164,461	174,683	18,297	11.7%	10,222	6.2%	13	12	15
SR237	Santa Clara	100,239	103,942	172,617	72,379	72.2%	68,676	66.1%	17	20	16
SR92	Alameda	116,339	153,760	155,922	39,582	34.0%	2,161	1.4%	15	13	17
US101	Marin	104,780	139,275	152,892	48,112	45.9%	13,617	9.8%	16	17	18
SR24	Contra Costa	75,923	125,546	135,225	59,301	78.1%	9,679	7.7%	21	19	19
I880	Santa Clara	126,400	148,502	123,684	-2,716	-2.1%	-24,818	-16.7%	14	16	20
I580	Contra Costa	99,251	66,233	103,965	4,714	4.7%	37,732	57.0%	18	26	21
SR242	Contra Costa	79,173	90,005	87,862	8,689	11.0%	-2,144	-2.4%	20	22	22
US101	Sonoma	63,384	91,047	87,545	24,161	38.1%	-3,501	-3.8%	24	21	23
I280	San Mateo	48,157	72,372	82,119	33,962	70.5%	9,747	13.5%	28	25	24
I680	Santa Clara	40,536	75,966	79,502	38,965	96.1%	3,536	4.7%	31	24	25
SR87	Santa Clara	45,991	61,351	75,775	29,785	64.8%	14,424	23.5%	30	27	26
I80	San Francisco	61,910	85,549	71,760	9,850	15.9%	-13,789	-16.1%	25	23	27
SR84	Alameda	82,253	56,014	65,759	-16,494	-20.1%	9,745	17.4%	19	28	28
SR238	Alameda	65,060	51,119	62,520	-2,539	-3.9%	11,401	22.3%	23	29	29
SR17	Santa Clara	61,039	44,192	58,720	-2,318	-3.8%	14,529	32.9%	26	30	30
I680	Solano	9,365	42,225	50,474	41,109	439.0%	8,249	19.5%	38	31	31
SR92	San Mateo	38,276	37,880	43,158	4,882	12.8%	5,278	13.9%	32	32	32
I580	Marin	46,404	8,257	18,802	-27,602	-59.5%	10,546	127.7%	29	38	33
SR12	Napa	17,502	20,579	18,379	877	5.0%	-2,200	-10.7%	36	33	34
SR152	Santa Clara	15,915	10,951	15,632	-283	-1.8%	4,681	42.7%	37	36	35
I280	San Francisco	17,689	12,707	15,297	-2,392	-13.5%	2,590	20.4%	35	34	36
SR25	Santa Clara	8,310	10,752	14,307	5,997	72.2%	3,554	33.1%	39	37	37
SR37	Sonoma	7,685	11,145	10,688	3,003	39.1%	-456	-4.1%	40	35	38
SR12	Solano	30,869	4,212	3,656	-27,213	-88.2%	-556	-13.2%	34	39	39
SR37	Marin	167	318	2,179	2,012	1208.5%	1,861	585.1%	42	41	40
I780	Solano	4,053	78	945	-3,108	-76.7%	867	1114.3%	41	44	41
SR29	Napa	92	121	274	182	197.3%	153	126.8%	44	43	42
I80	Napa	22	200	150	128	570.5%	-50	-24.8%	46	42	43
I980	Alameda	165	1,170	142	-23	-14.0%	-1,029	-87.9%	43	40	44
SR156	Santa Clara	35	11	87	52	146.6%	76	711.2%	45	47	45
SR13	Alameda	18	18	18	0	0.0%	0	0.0%	47	45	46
I880S	Alameda	12	12	12	0	0.0%	0	0.0%	48	46	47
SR1	San Francisco	60,922	9	9	-60,913	-100.0%	0	0.0%	27	48	48
SR160	Contra Costa	0	0	0	0		0				
TOTALS		**5,371,800**	**6,583,609**	**7,351,242**	**1,979,442**	**36.8%**	**767,633**	**11.7%**			

Congestion by Route