

District 04 Mobility Performance Report

2024 3rd Quarter

DEPARTMENT OF TRANSPORTATION

October 31, 2024

District 4-Office of Asset Management and Performance

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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2024 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 this quarter with information from a year ago and 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

Four and a half 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. Over the subsequent three years, congestion has increased considerably, but this trend has reversed this quarter. During Q3 2024, there was a 1.8% decrease in VMT compared to the same quarter a year ago, with VMT decreasing from 7.73 billion in Q2 2023 to 7.59 billion in Q3 2024. In the third quarter, we saw an decrease of 0.9% (66 million) in VMT from the previous quarter's VMT of 7.66 billion.

From September 12th through 16th (a total of 5 days), an error occurred involving the traffic data recording system which caused almost every detector in the district to go offline. On the 12th, the recorded values were extremely low. From the 13th to the 16th the system used estimated traffic values, but these values appear to be underestimates. As a rough estimate, this issue appears to be responsible for around 60-75% of the observed decrease in delay and other metrics.

Like VMT, VHD is decreasing this quarter. Compared to the same quarter the year before, there was a 5.1% decrease from 7.4 million to 7.0 million VHD in 35 mph total quarterly delay, and a 5.3% decrease from 16.1 million to 15.3 million VHD in 60 mph total quarterly delay. Compared to the previous quarter, Q3 saw an 3.9% decrease in VHD at 35 mph and 3.4% decrease in VHD at 60 mph.

The average weekday delay in this quarter has decreased compared to the year before. Last year, during the same quarter, there was a delay of 98 thousand VHD at 35 mph, and 217 thousand VHD at 60 mph. This quarter, there was a delay of 92 thousand VHD at 35 mph, which is a 6.1% decrease, and 203 thousand VHD at 60 mph, which is a 6.5% decrease. The most congested day of the week in Q3 was Tuesday, with 234 thousand average VHD at 60 mph. This was the same day as the same quarter a year ago, but Thursday was the most congested day during last quarter. Although Tuesday had the most VHD, Sunday had the largest magnitude increase of 7 thousand VHD at 60 mph which was a 10.6% increase from the same quarter last year. Thursday had the largest magnitude decrease of 26 thousand VHD at 60 mph which was a

10.5% decrease from the same quarter last year. When comparing to last quarter, Tuesday had the largest magnitude increase, with an increase of 9 thousand VHD (4.2%) and Thursday had the largest magnitude decrease, with a decrease of 18 thousand VHD (7.6%).

Looking at the Average VHD at 35 mph by hour of the day for weekdays, there was a slight decrease 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 a decrease of 14.9%. The largest magnitude hourly AM change over last quarter occurred at 7 AM with a decrease of 7.7%. For the PM hours, the largest magnitude hourly decrease of 6.5%, occurred at 5 PM when comparing with the same quarter last year. The largest magnitude hourly weekday decrease over last quarter occurred at 4 PM with a decrease of 12.4%. The weekday peak hour average delay of 15,784 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 17,334, there was an 8.9% decrease. Compared to a year ago, there was a 6.49% decrease from a VHD of 16,880. The largest single hour decrease on Saturday compared to a year ago occurred at 5 PM with a change of 25.7%. The largest decrease compared to the previous quarter on Saturday occurred at 5 PM with a change of 23.3%. The largest single hour increase on Saturday compared to a year ago occurred at midnight with a change of 24.2%. The largest increase compared to the previous quarter on Saturday occurred at noon with a change of 8.1%. As for Sunday/Holidays, the largest decrease compared to the previous year was 8.9% at 11 PM, and the largest decrease compared to last quarter was 12.5% at 6 PM. The largest magnitude increase over a year ago is 73.0% at 8 PM. The largest magnitude increase over last quarter occurred at 11 AM with a change of 8.8%.

Similarly to the same quarter last year and the previous quarter, Alameda County was the most congested county in the District with 3.07 million 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 1.78 million vehicle hours of total delay at 35 mph. Contra Costa County was the third most congested county in the District with 0.99 million vehicle hours of total delay at 35 mph. Sonoma County experienced the largest magnitude increase of 8.2% compared to the same quarter last year, while Solano County experienced the largest magnitude decrease of 29.7% compared to the same quarter last year.

Of the Top 10 Bottlenecks for the 3rd Quarter, nine bottleneck locations occurred during the PM period, and one bottleneck location occurred in the AM period. The top three locations are as follows:

- ALA I680 Northbound, Koopman Road during PM period (Rank 1, rank unchanged from Q2 2024): 205,996 vehicle hours of delay
- CC I80 Eastbound, Pinole Valley Road during PM period (Rank 2, rank unchanged from Q2 2024): 141,603 vehicle hours of delay
- ALA I880 Northbound, North of Eldridge POC during PM period (Rank 3, rank unchanged from Q2 2024): 126,716 vehicle hours of delay

This quarter, seven of the ten locations have resurfaced from last quarter's top 10 bottleneck list. Rank 1 (rank unchanged from Q2 2024), ALA I680 Northbound PM, Koopman Rd decreased 0.07% from 206,135 to 205,996 VHD. Rank 2 (rank unchanged from Q2 2024) CC I80 Eastbound PM, Pinole Valley Rd decreased 20.30% from 177,673 to 141,603 VHD. Rank 3 (rank unchanged from Q2 2024), ALA I880 Northbound PM, North of Eldridge POC decreased 11.95% from 143,908 to 126,716 VHD. Rank 4 (previously Rank 5 in Q2 2024), CC SR4 Westbound AM, 5400' E of Willow Pass Rd decreased 13.02% from 122,275 to 106,351 VHD. Rank 5 (previously Rank 9 in Q2 2024), SCL I280 Southbound PM, Bascom & Leland decreased 6.93% from 90,614 to 84,337 VHD. Rank 6 (rank unchanged from Q2 2024), CC I680 Northbound PM, 100' N of Oak Park Blvd decreased 12.90% from 95,786 to 83,429 VHD. Rank 7 (previously Rank 4 in Q2 2024 as "Laurel Road"), SCL US101 Southbound PM, 5000' N of Cochrane Rd decreased 34.31% from 126,532 to 83,119 VHD. Rank 8 (previously Rank 13 in Q2 2024), SCL SR237 Eastbound PM, Zanker Rd increased 4.15% from 67,460 to 70,258 VHD. Rank 9 (previously Rank 22 in Q2 2024), ALA I880 Northbound PM, Auto Mall Pkwy increased 29.61% from 53,494 to 69,332 VHD. Rank 10 (previously Rank 17 in Q2 2024), SCL I680 Southbound PM, S of Berryessa Rd increased 19.75% from 57,059 to 68,326 VHD.

Most locations across District 4 had a decrease in activity compared to a year ago. On the Congestion by Route table, 28 out of the 49 Route Counties listed have decreases in congestion compared to a year ago, 2 remained unchanged, and 19 show a increase. Compared to last

quarter, most locations have seen decreases in congestion. On the Congestion by Route table, 28 out of the 49 Route Counties listed have decreased congestion 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. Some routes showed a very low (or zero) amount of delay due to lack of detectors.

Regarding vehicle detector health, there was an 14.2% decrease in the number of good detectors, which are functional, and a 20.6% increase 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 a decrease of 6.9% in the number of good detectors and a corresponding increase of 8.2% in the number of bad detectors.

Top Ten Bottlenecks for the 2024 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	Alameda	I680-N	Koopman Rd	PM	21.09	11.09	6.04	205,996	235.0	55	37.58948	-121.87022
2	Contra Costa	I80-E	Pinole Valley Rd	PM	21.92	8.59	7.16	141,603	185.7	57	37.99801	-122.28511
3	Alameda	I880-N	N of Eldridge POC	PM	26.32	16.09	5.59	126,716	168.4	58	37.63718	-122.08826
4	Contra Costa	SR4-W	5400' E of Willow Pass Rd	AM	17.52	17.85	4.50	106,351	147.3	58	38.02145	-121.98179
5	Santa Clara	I280-S	Bascom & Leland	PM	6.08	4.70	5.53	84,337	139.8	54	37.31663	-121.95244
6	Contra Costa	I680-N	100' N of Oak Park Blvd	PM	48.50	17.01	5.11	83,429	75.1	58	37.93565	-122.0601
7	Santa Clara	US101-S	5000' N of Cochrane Rd	PM	368.11	R18.80	3.23	83,119	204.8	58	37.16338	-121.66442
8	Santa Clara	SR237-E	Zanker Rd	PM	8.22	8.17	5.45	70,258	159.3	53	37.42093	-121.93674
9	Alameda	I880-N	Auto Mall Pkwy	PM	15.03	4.80	2.96	69,332	251.4	58	37.50831	-121.96848
10	Santa Clara	I680-S	S of Berryessa Rd	PM	3.41	3.42	4.27	68,326	125.2	50	37.37979	-121.85819

Measure	Graph	Percentage Change									
Vehicle Miles of Travel (VMT)	<p>Miles (Billions)</p> <table border="1"> <tr><th>Year</th><th>Value</th></tr> <tr><td>2023 Q3</td><td>7.73</td></tr> <tr><td>2024 Q2</td><td>7.66</td></tr> <tr><td>2024 Q3</td><td>7.59</td></tr> </table>	Year	Value	2023 Q3	7.73	2024 Q2	7.66	2024 Q3	7.59	Over one year ago	Over last quarter
		Year	Value								
		2023 Q3	7.73								
2024 Q2	7.66										
2024 Q3	7.59										
-1.8%	-0.9%										
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Year</th><th>Value</th></tr> <tr><td>2023 Q3</td><td>7.4</td></tr> <tr><td>2024 Q2</td><td>7.3</td></tr> <tr><td>2024 Q3</td><td>7</td></tr> </table>	Year	Value	2023 Q3	7.4	2024 Q2	7.3	2024 Q3	7	Over one year ago	Over last quarter
		Year	Value								
		2023 Q3	7.4								
2024 Q2	7.3										
2024 Q3	7										
-5.1%	-3.9%										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Year</th><th>Value</th></tr> <tr><td>2023 Q3</td><td>98</td></tr> <tr><td>2024 Q2</td><td>98</td></tr> <tr><td>2024 Q3</td><td>92</td></tr> </table>	Year	Value	2023 Q3	98	2024 Q2	98	2024 Q3	92	Over one year ago	Over last quarter
		Year	Value								
		2023 Q3	98								
2024 Q2	98										
2024 Q3	92										
-6.1%	-5.8%										
Total Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Year</th><th>Value</th></tr> <tr><td>2023 Q3</td><td>16.1</td></tr> <tr><td>2024 Q2</td><td>15.8</td></tr> <tr><td>2024 Q3</td><td>15.3</td></tr> </table>	Year	Value	2023 Q3	16.1	2024 Q2	15.8	2024 Q3	15.3	Over one year ago	Over last quarter
		Year	Value								
		2023 Q3	16.1								
2024 Q2	15.8										
2024 Q3	15.3										
-5.3%	-3.4%										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Year</th><th>Value</th></tr> <tr><td>2023 Q3</td><td>217</td></tr> <tr><td>2024 Q2</td><td>214</td></tr> <tr><td>2024 Q3</td><td>203</td></tr> </table>	Year	Value	2023 Q3	217	2024 Q2	214	2024 Q3	203	Over one year ago	Over last quarter
		Year	Value								
		2023 Q3	217								
2024 Q2	214										
2024 Q3	203										
-6.5%	-5.2%										

Measure	Graph	Percentage Change	
<p>Average Vehicle Hours of Delay by Day of Week at 60 mph</p>		<p>Largest Magnitude Decrease over one year ago</p>	<p>Largest Magnitude Decrease over last quarter</p>
		<p>Thursday -10.5% ↓</p>	<p>Thursday -7.6% ↓</p>
		<p>Largest Magnitude Increase over one year ago</p>	<p>Largest Magnitude Increase over last quarter</p>
		<p>Sun/Hol 10.6% ↑</p>	<p>Tuesday 4.2% ↑</p>
<p>Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays</p>		<p>Largest Magnitude Weekday Decrease over one year ago</p>	<p>Largest Magnitude Weekday Decrease over last quarter</p>
		<p>8 AM -14.9% ↓</p>	<p>4 PM -12.4% ↓</p>
		<p>Largest Magnitude Weekday Increase over one year ago</p>	<p>Largest Magnitude Weekday Increase over last quarter</p>
		<p>7 PM 15.5% ↑</p>	<p>9 AM 5.4% ↑</p>
<p>Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays</p>		<p>Largest Magnitude Saturday Decrease over one year ago</p>	<p>Largest Magnitude Saturday Decrease over last quarter</p>
		<p>5 PM -25.7% ↓</p>	<p>5 PM -23.3% ↓</p>
		<p>Largest Magnitude Saturday Increase over one year ago</p>	<p>Largest Magnitude Saturday Increase over last quarter</p>
		<p>12 AM 24.2% ↑</p>	<p>12 PM 8.1% ↑</p>
<p>Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/Holidays</p>		<p>Largest Magnitude Sun./Holiday Decrease over one year ago</p>	<p>Largest Magnitude Sun./Holiday Decrease over last quarter</p>
		<p>10 PM -8.9% ↓</p>	<p>6 PM -12.5% ↓</p>
		<p>Largest Magnitude Sun./Holiday Increase over one year ago</p>	<p>Largest Magnitude Sun./Holiday Increase over last quarter</p>
		<p>8 PM 73% ↑</p>	<p>11 AM 8.8% ↑</p>

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 -29.7%	Contra Costa -14.1%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
Sonoma 8.2%	Santa Clara 1.1%		
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 -10.8%	PM Peak -5.4%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
Off-Peak Day 1.7%	Off-Peak Day 3.8%		
Average Number of Good and Bad Detectors		Change in Good over one year ago	Change in Good over last quarter
		-14.2%	-6.9%
		Change in Bad over one year ago	Change in Bad over last quarter
20.6%	8.2%		

Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2024 Q3-2023 Q3		Difference 2024 Q3-2024 Q2		Rank		
		2023 Q3	2024 Q2	2024 Q3	Absolute	Percentage	Absolute	Percentage	2023 Q3	2024 Q2	2024 Q3
I580	Alameda	1,102,920	1,106,563	1,077,657	-25,263	-2.3%	-28,906	-2.6%	1	1	1
US101	Santa Clara	841,228	785,802	784,391	-56,837	-6.8%	-1,412	-0.2%	2	2	2
I880	Alameda	768,710	725,696	741,855	-26,855	-3.5%	16,159	2.2%	3	3	3
I80	Alameda	479,794	515,284	443,375	-36,419	-7.6%	-71,909	-14.0%	4	4	4
I680	Alameda	247,581	387,626	388,178	140,597	56.8%	553	0.1%	9	5	5
I80	Contra Costa	273,040	311,808	319,228	46,189	16.9%	7,421	2.4%	6	6	6
SR85	Santa Clara	263,443	262,029	238,741	-24,702	-9.4%	-23,288	-8.9%	7	8	7
SR4	Contra Costa	305,079	292,272	202,973	-102,105	-33.5%	-89,299	-30.6%	5	7	8
I80	Solano	251,075	199,589	202,020	-49,055	-19.5%	2,432	1.2%	8	10	9
I680	Contra Costa	174,683	200,785	170,130	-4,553	-2.6%	-30,654	-15.3%	15	9	10
I280	Santa Clara	175,017	174,255	168,566	-6,451	-3.7%	-5,690	-3.3%	14	12	11
US101	San Mateo	194,874	175,087	160,754	-34,120	-17.5%	-14,332	-8.2%	10	11	12
SR237	Santa Clara	172,617	147,962	159,616	-13,001	-7.5%	11,654	7.9%	16	18	13
US101	San Francisco	193,839	166,402	158,438	-35,401	-18.3%	-7,964	-4.8%	11	14	14
US101	Marin	152,892	159,201	153,971	1,079	0.7%	-5,230	-3.3%	18	15	15
SR24	Alameda	192,961	171,355	153,930	-39,032	-20.2%	-17,426	-10.2%	12	13	16
I880	Santa Clara	123,684	158,933	140,698	17,014	13.8%	-18,235	-11.5%	20	16	17
SR24	Contra Costa	135,225	152,008	135,304	80	0.1%	-16,704	-11.0%	19	17	18
SR17	Santa Clara	58,720	98,320	133,638	74,917	127.6%	35,318	35.9%	30	23	19
SR92	Alameda	155,922	134,943	131,614	-24,308	-15.6%	-3,330	-2.5%	17	19	20
SR37	Solano	176,925	120,047	119,496	-57,430	-32.5%	-552	-0.5%	13	20	21
US101	Sonoma	87,545	111,508	95,915	8,370	9.6%	-15,593	-14.0%	23	21	22
I280	San Mateo	82,119	72,994	91,071	8,953	10.9%	18,077	24.8%	24	27	23
SR242	Contra Costa	87,862	106,885	88,048	186	0.2%	-18,837	-17.6%	22	22	24
SR238	Alameda	62,520	62,940	84,388	21,868	35.0%	21,449	34.1%	29	28	25
I680	Santa Clara	79,502	74,246	79,760	258	0.3%	5,514	7.4%	25	26	26
I580	Contra Costa	103,965	84,323	70,127	-33,838	-32.5%	-14,196	-16.8%	21	24	27
I80	San Francisco	71,760	80,365	63,326	-8,434	-11.8%	-17,039	-21.2%	27	25	28
SR84	Alameda	65,759	55,117	48,969	-16,790	-25.5%	-6,148	-11.2%	28	29	29
SR87	Santa Clara	75,775	36,218	36,363	-39,413	-52.0%	145	0.4%	26	30	30
SR92	San Mateo	43,158	32,755	35,073	-8,085	-18.7%	2,319	7.1%	32	31	31
SR152	Santa Clara	15,632	5,237	25,138	9,506	60.8%	19,902	380.1%	35	38	32
SR12	Napa	18,379	15,654	17,153	-1,226	-6.7%	1,500	9.6%	34	33	33
SR25	Santa Clara	14,307	21,146	16,009	1,702	11.9%	-5,137	-24.3%	37	32	34
I680	Solano	50,474	15,286	15,466	-35,007	-69.4%	180	1.2%	31	34	35
SR37	Sonoma	10,688	10,622	10,344	-344	-3.2%	-278	-2.6%	38	37	36
I580	Marin	18,802	11,659	6,958	-11,844	-63.0%	-4,701	-40.3%	33	36	37
I280	San Francisco	15,297	13,147	4,253	-11,045	-72.2%	-8,894	-67.7%	36	35	38
SR12	Solano	3,656	3,684	1,440	-2,215	-60.6%	-2,243	-60.9%	39	39	39
SR37	Marin	2,179	640	1,209	-970	-44.5%	569	89.0%	40	41	40
I780	Solano	945	178	1,003	58	6.1%	825	464.8%	41	44	41
SR29	Napa	274	359	624	350	128.0%	265	73.9%	42	43	42
SR156	Santa Clara	87	38	272	185	213.6%	234	608.9%	45	45	43
I80	Napa	150	908	228	78	51.7%	-680	-74.9%	43	40	44
I980	Alameda	142	462	149	8	5.4%	-313	-67.7%	44	42	45
SR13	Alameda	9	18	18	9	100.0%	0	0.0%	47	46	46
I880S	Alameda	12	12	12	0	0.0%	0	0.0%	46	47	47
SR1	San Francisco	9	9	8	-1	-14.3%	-1	-8.2%	47	48	48
SR160	Contra Costa	0	0	0	0	0	0	0			
TOTALS		7,351,233	7,262,372	6,977,895	-373,338	-5.1%	-284,477	-3.9%			