District 04 Mobility Performance Report

2024 1st Quarter

DEPARTMENT OF TRANSPORTATION

April 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

2024 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 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 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 two and a half years, congestion has increased considerably. During Q1 2024, there was a 2.9% increase in VMT compared to the same quarter a year ago, with VMT increasing from 7.06 billion in Q1 2023 to 7.26 billion in Q1 2024. In the fourth quarter, we saw a decrease of 2.8% (211 million) in VMT from the previous quarter's VMT of 7.48 billion.

Although VMT is essentially flat compared to last year, VHD is increasing, although not nearly as much as in previous quarter. Compared to the same quarter the year before, there was a 7.8% increase from 5.5 million to 6.0 million VHD in 35 mph total quarterly delay, and a 7.9% increase from 12.7 million to 13.7 million VHD in 60 mph total quarterly delay. Compared to the previous quarter, Q4 saw an 14% decrease in VHD at 35 mph and 10.6% decrease 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 81 thousand VHD at 35 mph, and 183 thousand VHD at 60 mph. This quarter, there was a delay of 86 thousand VHD at 35 mph, which is a 5.9% increase, and 194 thousand VHD at 60 mph, which is a 6.2% increase. The most congested day of the week in Q1 was Thursday, with 223 thousand VHD. This was the same day as both last quarter and during the same quarter a year ago. Although Thursday had the most VHD, Tuesday had the largest magnitude increase of 22 thousand VHD at 60 mph which was a 12% increase from the same quarter last year. Friday had the largest magnitude decrease, with a decrease of 12 thousand VHD (6.9%). When comparing to last quarter, all days of the week showed decreases.

Looking at the Average VHD at 35 mph by hour of the day for weekdays, there was a slight 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 9 AM with an increase of 6.6%. The largest magnitude hourly weekday increase over last quarter

also occurred at 9:00 AM with an increase of 3.8%. For the PM hours, the largest magnitude hourly increase of 10.7%, occurred at 5 PM when comparing with the same quarter last year, but there were no increases compared to last quarter in the PM commuting period. The weekday peak hour average delay of 15,852 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 17,602, there was a 9.9% decrease. Compared to a year ago, there was a 10.7% increase from a VHD of 14,325. The largest single hour decrease on Saturday compared to a year ago occurred at 3 PM with a change of 17.4%. The largest decrease compared to the the previous quarter on Saturday occurred at 5 PM with a change of 44.2%. The largest single hour increase on Saturday compared to a year ago occurred at 10 PM with a change of 53.3%, but there were no increases compared to the next quarter. As for the Sunday/Holidays, the largest decrease compared to the previous year was 45.8% at 5 AM, and the largest decrease compared to last quarter was -47.2% at 4 PM. The largest magnitude increase over a year ago is 74.6% at 6 PM. The largest magnitude increase over last quarter occurred at 8 PM with a change of 14.7%.

Similarly to the same quarter last year and the previous quarter, Alameda County was the most congested county in the District with 2,492,000 vehicle hours of total delay at 35 mph during the first quarter. Santa Clara County was the second most congested county in the District with 1,527,000 vehicle hours of total delay at 35 mph. Contra Costa County was the third most congested county in the District with 820,000 vehicle hours of total delay at 35 mph. Santa Clara County experienced the largest magnitude increase of 24% compared to the same quarter last year, while Alameda County experienced the largest magnitude decrease of 2.8% compared to the same quarter last year.

Of the Top 10 Bottlenecks for the 1st Quarter, eight bottleneck locations occurred during the PM, and two bottleneck locations occurred in the AM period. The top three locations are as follows:

- ALA I880 Northbound, North of Eldridge POC during PM period (Rank 1, rank unchanged from Q4 2023): 138,089 vehicle hours of delay
- CC I80 Eastbound, Pinole Valley Road during PM period (Rank 2, rank unchanged from Q4 2023): 122,163 vehicle hours of delay

- CC SR4 Westbound, 5400' E of Willow Pass Road during AM period (Rank 3, previously ranked 5 in Q4 2023): 107,704 vehicle hours of delay

This quarter, nine of the ten locations have resurfaced from last quarter's top 10 bottleneck list. Rank 1 (rank unchanged from Q4 2023), ALA I880 Northbound PM, North of Eldridge POC decreased 0.94% from 139,401 to 138,089 VHD. Rank 2 (rank unchanged from Q4 2023) CC I80 Eastbound PM, Pinole Valley Road increased 3.58% from 117,938 to 122,163 VHD. Rank 3 (previously Rank 5 in Q4 2023), CC SR4 Westbound AM, 5400' E of Willow Pass Road increased 1.26% from 106,367 to 107,704 VHD. Rank 4 (previously Rank 3 in Q4 2023), SCL US101 Southbound PM, Laurel Rd decreased 7.82% from 113,360 to 104,498 VHD. Rank 5 (previously Rank 7 in Q4 2023), CC I680 Northbound PM, 100' N of Oak Park Blvd decreased 9.86% from 98,218 to 88,455 VHD. Rank 6 (previously Rank 4 in Q4 2023), ALA I80 Eastbound PM, Gilman St decreased 20.28% from 108,876 to 86,799 VHD. Rank 7 (previously Rank 8 in Q4 2023), SCL SR280 Southbound PM, Bascom & Leland decreased 6.89% from 92,991 to 86,588 VHD. Rank 8 (previously Rank 12 in Q4 2023), SCL SR85 Southbound PM, Union Ave increased 18.74% from 69,113 to 82,063 VHD. Rank 9 (rank unchanged from Q4 2023), ALA I80 Westbound AM, Gilman St increased 1.85% from 80,127 to 81,613 VHD. Rank 10 (previously Rank 6 in Q4 2023), SCL SR237 Eastbound PM, Zanker Rd decreased 20.30% from 99,701 to 79,460 VHD.

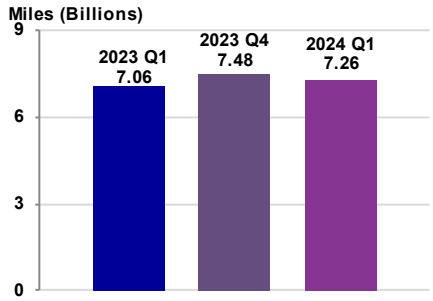
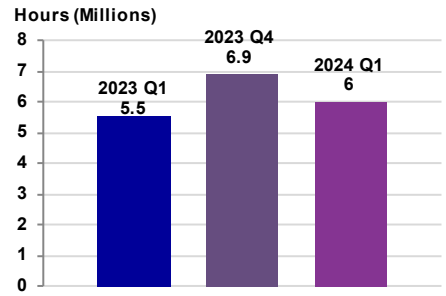
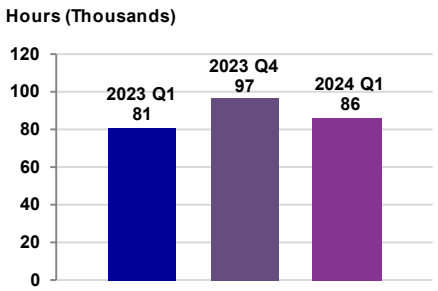
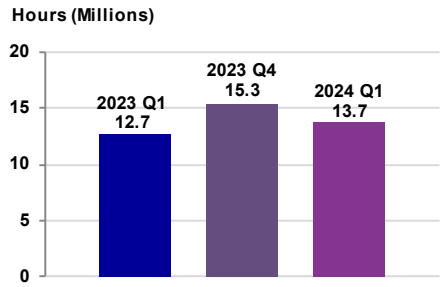
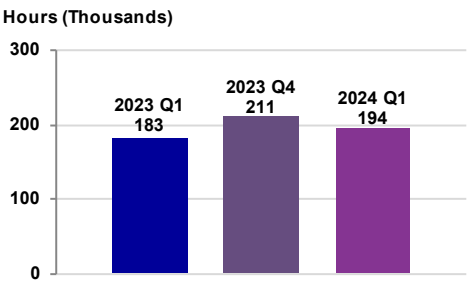
A plurality of locations across District 4 had an increase in activity compared to a year ago. On the Congestion by Route table, 30 out of the 49 Route Counties listed have increases in congestion compared to a year ago, 1 remained unchanged, and 18 show a decrease. Compared to last quarter, most locations have seen decreases in congestion. On the Congestion by Route table, 10 out of the 49 Route Counties listed have increased 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.

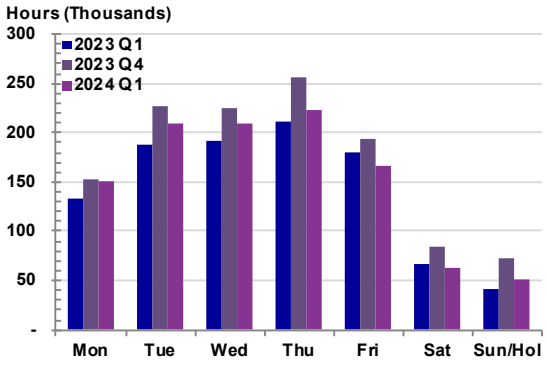
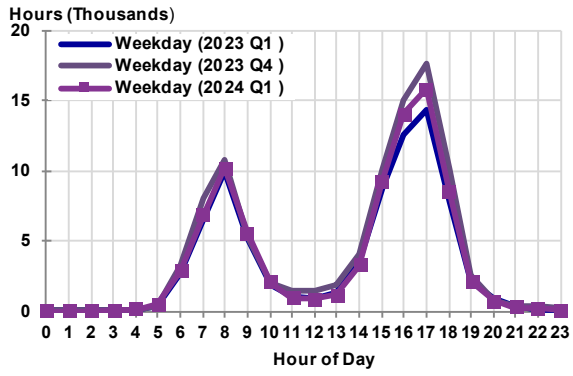
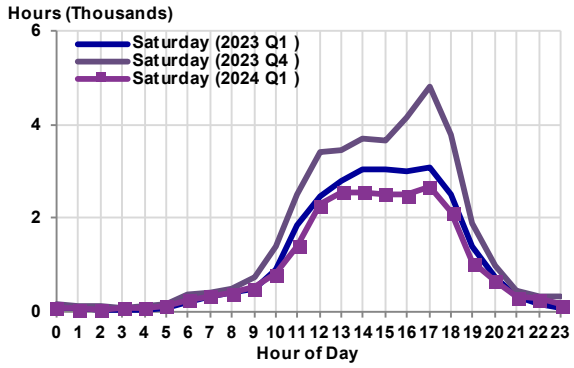
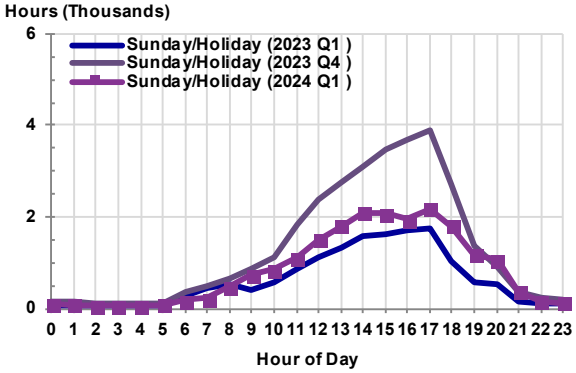
Regarding vehicle detector health, there was a 4.3% decrease in the number of good detectors, which are functional, and a 5.9% increase in the number of bad detectors, which are no longer able to measure congestion, compared to the same quarter a year ago. Compared to last

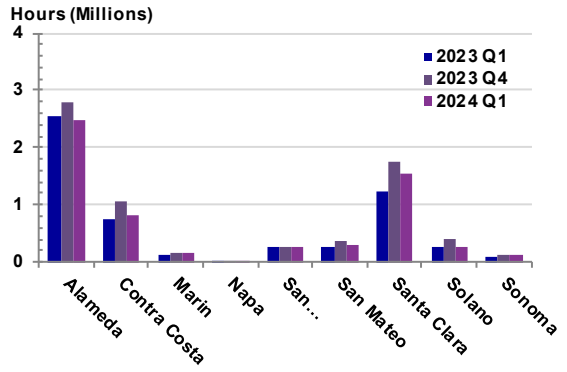
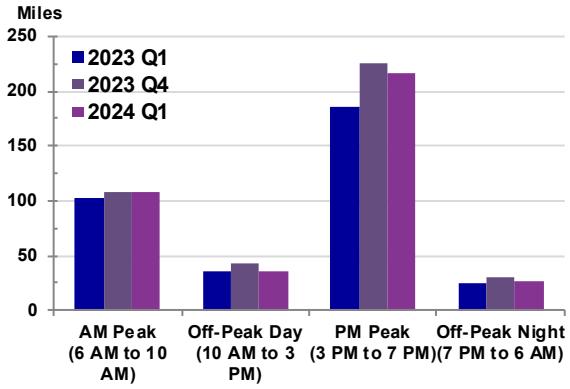
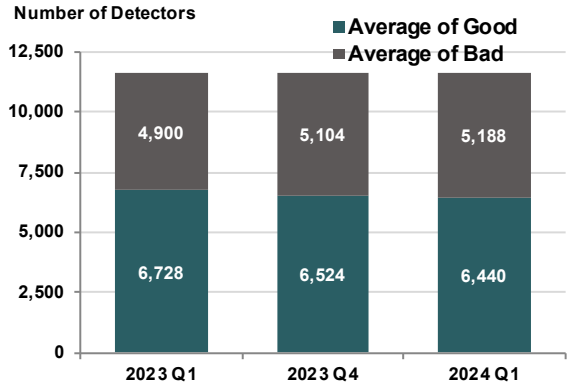
quarter, there was a decrease of 1.3% in the number of good detectors and a corresponding increase of 1.6% in the number of bad detectors.

Top Ten Bottlenecks for the 2024 1st 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	I880-N	N of Eldridge POC	PM	26.32	16.09	5.39	138,089	213.4	62	37.6372	-122.0883
2	Contra Costa	I80-E	Pinole Valley Rd	PM	21.92	8.59	4.99	122,163	185.7	61	37.9980	-122.2851
3	Contra Costa	SR4-W	5400' E of Willow Pass Rd	AM	17.52	17.85	5.03	107,704	144.3	60	38.0214	-121.9818
4	Santa Clara	US101-S	Laurel Rd	PM	366.47	17.16	4.80	104,498	212.8	62	37.1453	-121.6453
5	Contra Costa	I680-N	100' N of Oak Park Blvd	PM	48.50	17.01	4.90	88,455	101.8	61	37.9356	-122.0601
6	Alameda	I80-E	Gilman St	PM	11.95	6.64	3.31	86,799	145.2	61	37.8782	-122.3072
7	Santa Clara	I280-S	Bascom & Leland	PM	6.08	4.7	4.97	86,588	151.4	57	37.3166	-121.9524
8	Santa Clara	SR85-S	Union Ave	PM	9.10	9.1	2.61	82,063	204.8	62	37.2504	-121.9282
9	Alameda	I80-W	Gilman St	AM	11.91	6.6	2.73	81,613	172.1	61	37.8774	-122.3072
10	Santa Clara	SR237-E	Zanker Rd	PM	8.22	8.17	5.50	79,460	137.8	43	37.4209	-121.9367

Measure	Graph	Percentage Change	
		Over one year ago	Over last quarter
Vehicle Miles of Travel (VMT)		2.9%	-2.8%
Total Vehicle Hours of Delay (VHD) at 35 mph		7.8%	-14%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		5.9%	-11%
Total Vehicle Hours of Delay (VHD) at 60 mph		7.9%	-10.6%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		6.2%	-8.2%

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph		Largest Magnitude Decrease over one year ago Friday -6.9%	Largest Magnitude Decrease over last quarter Thursday -12.9%
		Largest Magnitude Increase over one year ago Tuesday 12%	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 2 PM -6.2%	Largest Magnitude Weekday Decrease over last quarter 5 PM -9.9%
		Largest Magnitude Weekday Increase over one year ago 5 PM 10.7%	Largest Magnitude Weekday Increase over last quarter 9 AM 3.8%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 3 PM -17.4%	Largest Magnitude Saturday Decrease over last quarter 5 PM -44.2%
		Largest Magnitude Saturday Increase over one year ago 10 PM 53.3%	Largest Magnitude Saturday Increase over last quarter –
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 7 AM -45.8%	Largest Magnitude Sun./Holiday Decrease over last quarter 4 PM -47%
		Largest Magnitude Sun./Holiday Increase over one year ago 6 PM 74.6%	Largest Magnitude Sun./Holiday Increase over last quarter 8 PM 14.7%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago Alameda -2.8%	Largest Magnitude Decrease over last quarter Alameda -10.3%
		Largest Magnitude Increase over one year ago Santa Clara 24%	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 –	Largest Magnitude Decrease over last quarter PM Peak -4.6%
		Largest Magnitude Increase over one year ago PM Peak 16.5%	Largest Magnitude Increase over last quarter –
Average Number of Good and Bad Detectors		Change in Good over one year ago -4.3%	Change in Good over last quarter -1.3%
		Change in Bad over one year ago 5.9%	Change in Bad over last quarter 1.6%

Congestion by Route											
		Vehicle Hours of Delay at 35 mph			Difference 2024 Q1-2023 Q1		Difference 2024 Q1-2023 Q4		Rank		
Route	County	2023 Q1	2023 Q4	2024 Q1	Absolute	Percentage	Absolute	Percentage	2023 Q1	2023 Q4	2024 Q1
I880	Alameda	1,690,461	1,933,605	1,786,339	95,878	5.7%	-147,266	-7.6%	2	1	1
I580	Alameda	1,966,050	1,892,651	1,774,205	-191,845	-9.8%	-118,446	-6.3%	1	2	2
US101	Santa Clara	1,221,306	1,592,882	1,360,746	139,439	11.4%	-232,136	-14.6%	3	3	3
I80	Alameda	711,649	884,981	754,907	43,258	6.1%	-130,074	-14.7%	4	4	4
US101	San Mateo	459,640	688,840	636,615	176,975	38.5%	-52,225	-7.6%	6	6	5
I80	Solano	599,237	854,801	631,829	32,591	5.4%	-222,972	-26.1%	5	5	6
SR85	Santa Clara	412,141	503,777	498,794	86,653	21.0%	-4,984	-1.0%	9	8	7
I80	Contra Costa	439,132	476,907	477,969	38,837	8.8%	1,062	0.2%	7	10	8
I280	Santa Clara	379,338	453,468	446,090	66,752	17.6%	-7,378	-1.6%	10	12	9
I680	Contra Costa	416,300	496,220	428,713	12,412	3.0%	-67,507	-13.6%	8	9	10
SR4	Contra Costa	345,756	593,517	419,004	73,248	21.2%	-174,514	-29.4%	13	7	11
I680	Alameda	373,589	455,680	376,791	3,202	0.9%	-78,890	-17.3%	11	11	12
US101	San Francisco	346,589	368,716	353,615	7,027	2.0%	-15,100	-4.1%	12	14	13
SR237	Santa Clara	267,937	372,923	338,769	70,832	26.4%	-34,154	-9.2%	14	13	14
I880	Santa Clara	245,218	368,694	323,194	77,976	31.8%	-45,500	-12.3%	15	15	15
US101	Sonoma	242,994	355,968	304,057	61,064	25.1%	-51,911	-14.6%	17	16	16
US101	Marin	243,733	307,179	289,868	46,135	18.9%	-17,311	-5.6%	16	17	17
SR24	Alameda	239,452	272,545	274,735	35,284	14.7%	2,190	0.8%	18	19	18
SR24	Contra Costa	228,653	302,063	265,098	36,445	15.9%	-36,965	-12.2%	19	18	19
I80	San Francisco	169,493	241,381	240,248	70,755	41.7%	-1,133	-0.5%	22	20	20
I680	Santa Clara	156,794	226,293	229,046	72,253	46.1%	2,753	1.2%	23	21	21
SR92	Alameda	221,073	216,259	197,214	-23,859	-10.8%	-19,045	-8.8%	20	22	22
I280	San Mateo	170,190	208,976	161,137	-9,054	-5.3%	-47,840	-22.9%	21	23	23
SR92	San Mateo	104,800	142,553	130,478	25,678	24.5%	-12,075	-8.5%	29	24	24
SR242	Contra Costa	128,878	130,209	128,190	-688	-0.5%	-2,018	-1.6%	25	25	25
SR84	Alameda	119,920	118,286	117,321	-2,599	-2.2%	-965	-0.8%	26	28	26
SR37	Solano	118,372	129,632	111,902	-6,470	-5.5%	-17,729	-13.7%	27	26	27
SR238	Alameda	99,295	102,593	103,119	3,824	3.9%	527	0.5%	30	29	28
I580	Contra Costa	113,065	100,602	78,561	-34,504	-30.5%	-22,041	-21.9%	28	30	29
SR87	Santa Clara	141,804	125,521	78,332	-63,472	-44.8%	-47,189	-37.6%	24	27	30
SR17	Santa Clara	28,342	91,575	70,123	41,782	147.4%	-21,452	-23.4%	34	31	31
I680	Solano	58,359	71,920	58,195	-164	-0.3%	-13,725	-19.1%	32	32	32
I280	San Francisco	69,299	45,325	51,256	-18,043	-26.0%	5,931	13.1%	31	33	33
I580	Marin	25,535	37,594	48,485	22,950	89.9%	10,891	29.0%	35	35	34
SR12	Napa	30,306	38,001	35,790	5,484	18.1%	-2,211	-5.8%	33	34	35
SR25	Santa Clara	11,586	18,472	17,935	6,349	54.8%	-537	-2.9%	39	37	36
SR37	Sonoma	21,997	4,348	13,587	-8,411	-38.2%	9,239	212.5%	36	44	37
SR13	Alameda	13,438	13,442	13,442	4	0.0%	0	0.0%	38	38	38
SR12	Solano	8,820	10,101	10,775	1,955	22.2%	674	6.7%	40	39	39
SR152	Santa Clara	15,443	19,327	10,331	-5,113	-33.1%	-8,996	-46.5%	37	36	40
I780	Solano	7,442	6,186	6,131	-1,310	-17.6%	-55	-0.9%	41	40	41
SR1	San Francisco	5,960	5,962	5,962	2	0.0%	0	0.0%	43	41	42
I80	Napa	6,092	5,214	5,181	-911	-15.0%	-33	-0.6%	42	43	43
I880S	Alameda	3,595	3,602	3,600	5	0.1%	-3	-0.1%	46	45	44
SR37	Marin	5,593	2,714	2,877	-2,716	-48.6%	163	6.0%	44	46	45
I980	Alameda	4,647	5,882	2,589	-2,058	-44.3%	-3,293	-56.0%	45	42	46
SR160	Contra Costa	741	741	741	0	0.0%	0	0.0%	48	48	47
SR29	Napa	1,047	814	257	-790	-75.4%	-557	-68.4%	47	47	48
SR156	Santa Clara	130	0	106	-24	-18.4%	106		49		49
TOTALS		**12,691,229**	**15,298,942**	**13,674,247**	**983,017**	**7.7%**	**-1,624,695**	**-10.6%**			