District 03
Mobility Performance Report

2023 Second Quarter

DEPARTMENT OF TRANSPORTATION

July 28, 2023
Office of Freeway Operations

2023 Second Quarter

EXECUTIVE SUMMARY

Overview

Caltrans District 3 is comprised of eleven counties located in Northern California. Most of the congestion and delay on the state highway system takes place in the urbanized areas of Sacramento, Yolo and Placer counties.

The Mobility Performance Report (MPR) quarterly analysis compares information from this quarter with information from the previous quarter and the prior year. The following performance measures were used to quantify freeway congestion in District 3 as well as to compare the different quarters:

- Bottleneck Locations
- 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 by automated vehicle detector stations deployed on urban area freeways from the Caltrans Performance Measurement System (PeMS) every day of the quarter, twenty–four hours a day, where congestion is regularly experienced. The MPR presents congestion information for 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 traffic engineering experience and District 3 Office of Freeway Operations input.

FINDINGS

In the second quarter of 2023, there is a significant increase in delay due to the resumption of normal economic activities. The total delay on the freeways in District 3 equaled *1.12* million vehicle hours of delay (VHD) below the 35-mph speed threshold and *2.9* million VHD below 60-mph threshold. The average delay experienced on weekdays in this quarter was approximately *13 thousand* of VHD below 35-mph, and *37 thousand* of VHD below 60-mph.

Vehicle Miles of Travel (VMT) increased by 7.6% with a total of *2.63* billion miles when compared to the previous quarter with *2.44* billion miles. The VHD below the 60-mph speed threshold has increased by 11.3% during the same quarter. See graphs on page 4 and 5 for details. Travel demand is more concentrated in the afternoon commute hours.

Top Ten Bottlenecks for Quarter 2

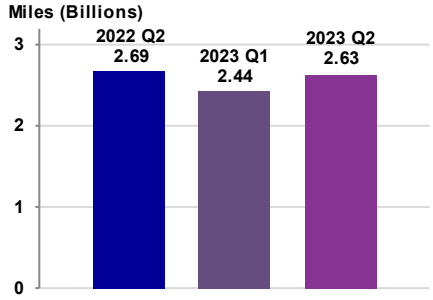
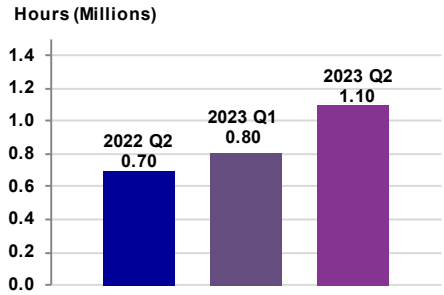
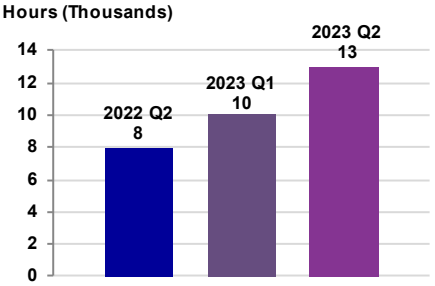
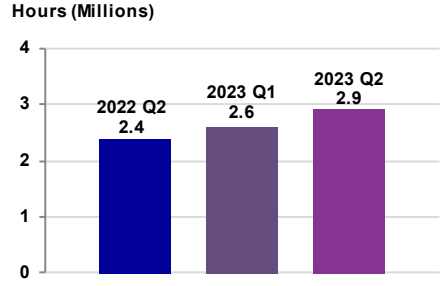
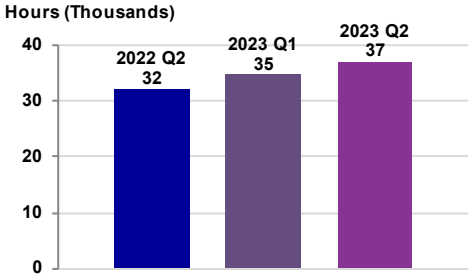
County	Fwy	Name	Type	Shift	Abs PM	CA PM	Latitude	Longitude	# Days Active	Avg Extent (Miles)	Total Delay (veh-hrs)	Total Duration (mins)
SAC	SR51-S	EB-51 Exposition Bl	ML	PM	3.33	3.326	38.60	-121.44	64	1.85	49,149	12,275
YUB	SR70-E	EB-70 Yuba River Br	ML	PM	20.15	13.524	39.13	-121.58	59	2.40	37,144	8,630
YOLO	I80-E	EB-80 at Chiles Rd	ML	PM	77.73	5.543	38.56	-121.64	55	2.31	33,875	8,285
YOLO	I80-W	E. of Webster UC	ML	AM	79.13	6.943	38.57	-121.62	36	4.04	25,295	4,625
SAC	SR99-S	SB-99 at Cosumnes	ML	PM	290.68	16.23	38.46	-121.41	64	1.51	23,197	11,245
SAC	US50-E	16th St	ML	PM	4.72	L1.566	38.56	-121.49	65	1.07	21,685	9,090
SAC	I5-S	SB-5 at Airport Blvd	ML	PM	528.21	32.919	38.67	-121.59	62	2.96	20,550	7,230
PLA	I80-W	EB Douglas Blvd	ML	PM	103.38	1.876	38.74	-121.27	63	1.28	19,090	9,105
PLA	SR65-S	Pleasant Grove Blvd	ML	PM	66.91	R7.189	38.79	-121.29	64	1.45	18,542	9,425
SAC	US50-W	15th St	ML	PM	4.50	L1.345	38.56	-121.49	49	1.38	17,954	6,190

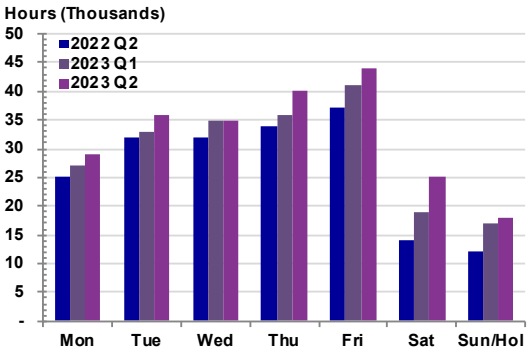
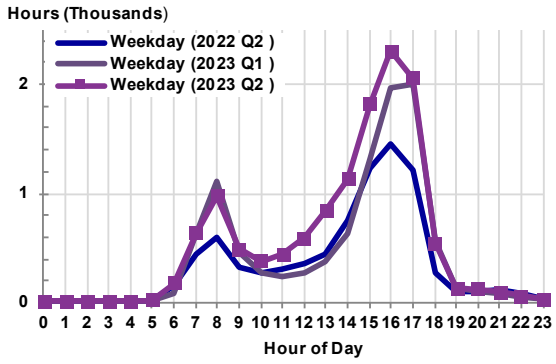
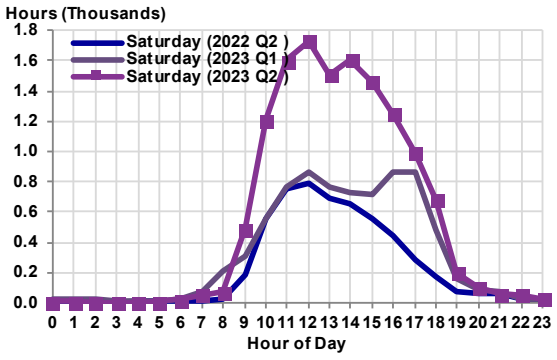
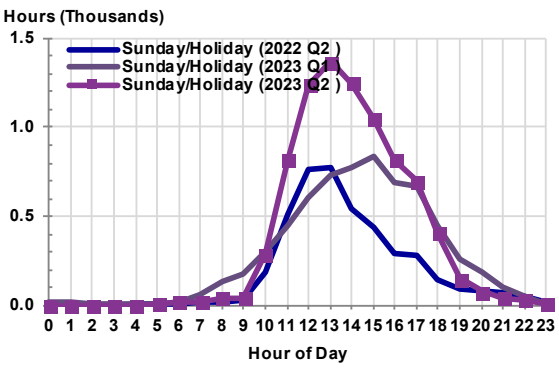
Notes:

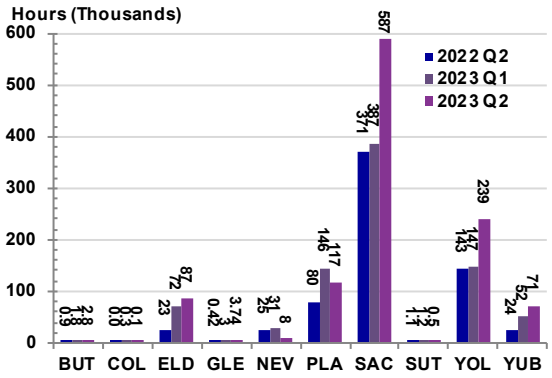
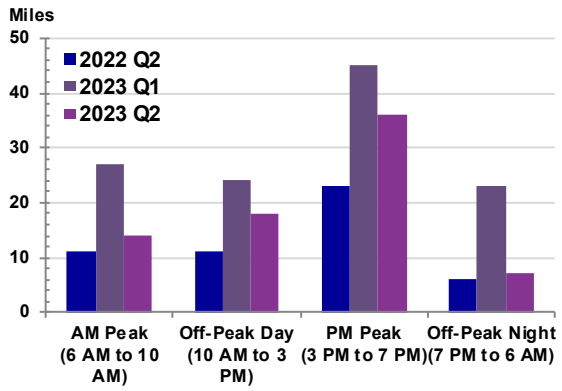
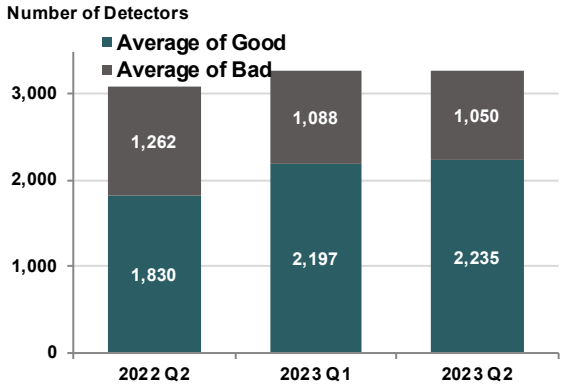
- For the table above, the quarterly delay calculation was based upon a 60-mph threshold, for the a.m. or p.m. weekday peak period.
- Missouri Flat Rd/EB-50 (VDS 316898) was reported as the #2 bottleneck for this quarter which didn't match with field observations. After examining the PeMS data, it was determined that this detector has 0% observed data and it was manually dropped from the bottlenecks list.
- Traffic demand patterns have returned back to pre-COVID condition. As indicated by the bottlenecks table above, all these congested locations were caused by commute traffic. Congested location caused by recreational traffic were removed from the chart. For example, EB-50 at Pioneer Trail/South Lake Tahoe was dropped.

- In continued efforts to help relieve congestion and allow safe merging during high traffic demand periods, the California Department of Transportation (Caltrans) has updated the ramp metering operating hours on all major freeways in Sacramento region. The metering hours will be based on traffic demand and will be activated 24/7, including holidays when minimum traffic thresholds are met. The ramp meters will be active every day including weekends and holidays.
- Caltrans District 3 has plans to construct High Occupancy Vehicle (HOV) lanes on SR-51 in Sacramento County, I-80 in Yolo County and SR-65 in Placer County. These projects are expected to reduce delay at some of the nearby bottlenecks identified above.
- The HOV lanes on US-50 are under construction right now, and HOV lanes on I-5 have been completed and are open, only electrical work remains.
- Phase 1 of improvements at the SR 65/I-80 interchange have been completed. This phase included reconstructing the WB I-80 connector to NB SR-65 to increase capacity and includes reconstructing the Stanford Ranch/Galleria interchange improvements. The remainder of the SR-65 project is not currently funded. The planned HOV project on SR-51 is currently funding for PA&ED.
- Our District is preparing to use the information in this report to prioritize funding for projects in the SHOPP mobility programs.

Quarterly Mobility Statistics

Measure	Graph	Percentage Change	
Vehicle Miles of Travel (VMT)		Over one year ago	Over last quarter
		-2.3%	7.6%
		↓	↑
Total Vehicle Hours of Delay (VHD) at 35 mph		Over one year ago	Over last quarter
		66.8%	32.9%
		↑	↑
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		Over one year ago	Over last quarter
		53.9%	24.1%
		↑	↑
Total Vehicle Hours of Delay (VHD) at 60 mph		Over one year ago	Over last quarter
		22.3%	11.3%
		↑	↑
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		Over one year ago	Over last quarter
		15.8%	6.4%
		↑	↑

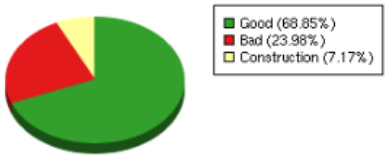
Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph		Largest Magnitude Decrease over one year ago – Largest Magnitude Increase over one year ago Saturday 73.4%	Largest Magnitude Decrease over last quarter – Largest Magnitude Increase over last quarter Saturday 29.8%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago 10 PM -27.1% Largest Magnitude Weekday Increase over one year ago 4 PM 58.7%	Largest Magnitude Weekday Decrease over last quarter 8 AM -11.9% Largest Magnitude Weekday Increase over last quarter 3 PM 37.7%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 4 AM -77.3% Largest Magnitude Saturday Increase over one year ago 2 PM 145.5%	Largest Magnitude Saturday Decrease over last quarter 8 AM -67.6% Largest Magnitude Saturday Increase over last quarter 2 PM 119%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 9 PM -36% Largest Magnitude Sun./Holiday Increase over one year ago 2 PM 131.1%	Largest Magnitude Sun./Holiday Decrease over last quarter 9 AM -76.9% Largest Magnitude Sun./Holiday Increase over last quarter 1 PM 86.9%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago NEV -69.7%	Largest Magnitude Decrease over last quarter PLA -19.5%
		Largest Magnitude Increase over one year ago SAC 58%	Largest Magnitude Increase over last quarter SAC 51.8%
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 Off-Peak Night -69%
		Largest Magnitude Increase over one year ago PM Peak 54.3%	Largest Magnitude Increase over last quarter –
Average Number of Good and Bad Detectors		Change in Good over one year ago 22%	Change in Good over last quarter 2%
		Change in Bad over one year ago -17%	Change in Bad over last quarter -3%

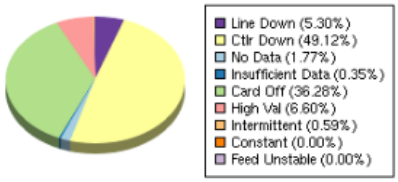
The Figure below is a screenshot displaying detector health data taken on 04/01/2023, at the beginning of Q2 2023. This Figure illustrates the percentage of detector health per route to determine which detectors are measuring the performance of State highways in District 3. Due to construction projects on I-5 (HOV lane is under construction from US 50 connector to City of Elk Grove), I-80 (RHMA Pavement Rehabilitation Project), US-50 (Multimodal Corridor Enhancement and Rehabilitation Project), and SR-99 (RHMA Overlay), about 30% of detectors

are out of service. Caltrans will not be able to see much improvement of detectors health until construction is completed on the main corridors within the Sacramento region.

% Working



Suspected Errors



Status by Freeway

Freeway	# Det	% Good	% Bad	% Construction	Suspected Error								
					Line Down	Ctlr Down	No Data	Insufficient Data	Card Off	High Val	Intermittent	Constant	Feed Unstable
I5-N	189	49.7	50.3	6.9	0.0	22.8	1.1	0.0	23.8	2.6	0.0	0.0	0.0
I5-S	198	60.1	39.9	8.6	0.0	12.6	2.5	0.0	20.7	4.0	0.0	0.0	0.0
SR12-E	2	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR12-W	2	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR20-E	19	84.2	15.8	0.0	5.3	5.3	0.0	0.0	5.3	0.0	0.0	0.0	0.0
SR20-W	24	70.8	29.2	0.0	4.2	4.2	0.0	0.0	20.8	0.0	0.0	0.0	0.0
SR28-E	3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR28-W	3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR45-N	3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR45-S	3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR49-N	4	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR49-S	4	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
US50-E	467	61.9	38.1	20.3	4.5	21.2	0.0	0.0	7.7	4.7	0.0	0.0	0.0
US50-W	444	57.9	42.1	22.7	5.0	22.3	0.0	0.0	11.9	2.9	0.0	0.0	0.0
SR51-N	112	85.7	14.3	0.0	0.0	3.6	0.9	0.0	7.1	1.8	0.9	0.0	0.0
SR51-S	96	93.8	6.3	0.0	0.0	0.0	1.0	0.0	4.2	0.0	1.0	0.0	0.0
SR65-N	53	79.2	20.8	0.0	0.0	15.1	5.7	0.0	0.0	0.0	0.0	0.0	0.0
SR65-S	69	95.7	4.3	0.0	0.0	2.9	1.4	0.0	0.0	0.0	0.0	0.0	0.0
SR70-E	16	75.0	25.0	0.0	0.0	12.5	0.0	0.0	12.5	0.0	0.0	0.0	0.0
SR70-W	13	76.9	23.1	0.0	0.0	0.0	0.0	0.0	23.1	0.0	0.0	0.0	0.0
I80-E	484	79.5	20.5	0.0	0.0	14.3	0.0	0.0	5.8	0.2	0.2	0.0	0.0
I80-W	448	79.5	20.5	0.0	0.0	11.2	0.0	0.0	9.2	0.0	0.2	0.0	0.0
SR89-N	5	80.0	20.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0
SR89-S	5	60.0	40.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
SR99-N	273	95.2	4.8	2.9	0.0	0.7	0.0	0.4	2.9	0.4	0.4	0.0	0.0
SR99-S	278	89.2	10.8	4.3	0.0	0.7	0.7	0.0	7.9	1.4	0.0	0.0	0.0
SR113-N	13	61.5	38.5	0.0	0.0	38.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR113-S	15	60.0	40.0	0.0	0.0	33.3	0.0	0.0	6.7	0.0	0.0	0.0	0.0
SR160-N	6	100.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR160-S	7	100.0	0.0	42.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR162-E	4	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR162-W	4	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR193-E	2	50.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0
SR193-W	1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR267-E	2	0.0	100.0	50.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0
SR267-W	2	0.0	100.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0
SR275-W	3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I505-N	8	50.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0
I505-S	3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals	**3,287**	**74.2**	**25.8**	**7.7**	**1.4**	**12.7**	**0.5**	**0.1**	**9.4**	**1.7**	**0.2**	**0.0**	**0.0**

Overall, congestion and delay have increased significantly, and travel demand (VMT) was also up for 7.6% when compared to the previous quarter.

Congestion by Route											
		Vehicle Hours of Delay at 35 mph			Difference 2023 Q2-2022 Q2		Difference 2023 Q2-2023 Q1		Rank		
Route	County	2022 Q2	2023 Q1	2023 Q2	Absolute	Percentage	Absolute	Percentage	2022 Q2	2023 Q1	2023 Q2
I5	Sacramento	67,319	58,889	257,307	189,988	282.2%	198,418	336.9%	4	8	1
I80	Yolo	118,900	122,390	192,490	73,590	61.9%	70,100	57.3%	1	2	2
SR51	Sacramento	116,397	150,298	168,704	52,307	44.9%	18,406	12.2%	2	1	3
SR99	Sacramento	108,532	83,901	94,164	-14,368	-13.2%	10,263	12.2%	3	3	4
US50	El Dorado	22,301	71,006	86,335	64,034	287.1%	15,329	21.6%	10	4	5
SR70	Yuba	23,710	51,749	71,382	47,673	201.1%	19,634	37.9%	8	9	6
SR65	Placer	57,738	61,252	64,491	6,752	11.7%	3,238	5.3%	5	6	7
I80	Placer	20,712	64,163	51,106	30,394	146.7%	-13,057	-20.3%	11	5	8
US50	Yolo	19,780	13,132	42,173	22,393	113.2%	29,041	221.2%	12	13	9
I80	Sacramento	22,429	33,574	32,540	10,111	45.1%	-1,034	-3.1%	9	10	10
US50	Sacramento	53,854	59,316	31,751	-22,103	-41.0%	-27,565	-46.5%	6	7	11
I80	Nevada	25,312	27,769	5,070	-20,242	-80.0%	-22,699	-81.7%	7	11	12
I5	Yolo	4,127	11,259	3,726	-401	-9.7%	-7,533	-66.9%	13	14	13
SR162	Glenn	1	2,558	3,520	3,519	251321.4%	962	37.6%	32	16	14
SR99	Butte	848	1,841	2,780	1,932	227.7%	939	51.0%	16	18	15
SR20	Nevada	24	120	2,223	2,199	9318.2%	2,102	1746.1%	29	26	16
SR160	Sacramento	35	200	1,782	1,747	5035.4%	1,582	789.2%	27	25	17
SR28	Placer	440	2,459	1,368	928	210.9%	-1,090	-44.3%	19	17	18
SR12	Sacramento	3,046	402	878	-2,168	-71.2%	476	118.4%	14	22	19
SR99	Sutter	1,033	1,182	447	-586	-56.7%	-735	-62.2%	15	19	20
SR49	Nevada	2	2,651	373	371	18535.0%	-2,278	-85.9%	30	15	21
SR89	El Dorado	818	721	284	-534	-65.3%	-437	-60.7%	18	20	22
I5	Glenn	422	440	217	-205	-48.6%	-223	-50.8%	20	21	23
SR89	Placer	834	17,508	168	-666	-79.8%	-17,339	-99.0%	17	12	24
SR113	Yolo	72	36	136	65	90.3%	100	278.1%	22	27	25
SR20	Colusa	37	230	60	23	64.1%	-170	-73.9%	26	23	26
SR267	Placer	57	216	56	-1	-1.2%	-161	-74.2%	23	24	27
SR20	Sutter	54	1	47	-7	-13.7%	46	4580.0%	24	31	28
I5	Colusa	0	32	10	10		-22	-70.0%		28	29
SR70	Sutter	39	16	8	-30	-78.7%	-8	-50.0%	25	29	30
SR45	Colusa	2	5	7	5	260.0%	3	60.0%	30	30	31
SR20	Yuba	85	0	4	-81	-95.6%	4	1750.0%	21	34	32
SR162	Butte	1	0	2	1	84.6%	2	1100.0%	33	34	33
SR45	Glenn	0	0	1	1	250.0%	1	600.0%	35	36	34
SR113	Sutter	1	1	1	-1	-45.5%	0	-14.3%	34	32	35
SR275	Yolo	0	0	0	0		0				36
I505	Yolo	27	0	0	-27	-99.6%	0	-66.7%	28	33	37
I505	Yuba	0	0	0	0		0				
TOTALS		**668,988**	**839,316**	**1,115,610**	**446,622**	**66.8%**	**276,294**	**32.9%**			

As indicated by the table above, the Total Delay for all monitored routes has increased to *1,115,610* hours, an increase of *32.9%* when compared with previous quarter.

Based on the total delay by route, I-5 in Sacramento County was the worst performing freeway in District 3. However, based on observations, traffic demand didn't change much on the subject highway during this quarter. It is determined that increase in delay was due to recovering of detector health on SAC-5. Detector health for Good Detectors is increased to 50% when is

comparing with the previous quarter of 40% on the subject highway. Meaning more measurement introduce more reported delay.

Most of the congested routes in Sacramento region are serving traffic to Downtown Sacramento, which is due to its travel demand associated with Sacramento Regional high population, employment, and educational centers. As identified on pages 2 and 3 of this report, Caltrans is continuing the process of implementing HOV lanes and 24/7 ramp meter operations for Sacramento's freeway system. HOV lane projects on SR-51, I-5, I-80, and US-50 are planned or under construction to mitigate congestion on these routes. Further congestion mitigation can be achieved by ***Work at Home*** and increasing mode shift away from single occupancy vehicles to higher occupancy vehicles such as carpooling, vanpooling, and higher utilization of mass transit options. District 3 will continue to explore the best possible ways to reduce delay in the impacted freeways and highways.