

District 03 Mobility Performance Report

2016 Fourth Quarter

DEPARTMENT OF TRANSPORTATION

January 20, 2017
Office of Freeway Operations

District 03 Mobility Performance Report

2016 Fourth Quarter

EXECUTIVE SUMMARY

Overview

Caltrans District 3 contains eleven counties that are located in northern California. Most of the congestion and delay takes place in the urbanized counties of Sacramento, Yolo and Placer.

The Mobility Performance Report quarterly analysis compares information with the past year and the previous quarter using the following performance measures:

- 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 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 Mobility Performance Report (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 engineering experience and District 3 input.

FINDINGS

In the 2016 Fourth Quarter, total delay equaled 1.2 million vehicle hours of delay (VHD) at the 35 mph speed threshold, and 3.2 million VHD at the 60 mph threshold. The average weekday delay experienced in this quarter was approximately 16,000 VHD at 35 mph, and about 46,000 VHD at 60 mph.

Top Ten Bottlenecks for 2016 Fourth Quarter

Fwy	Location	Shift	Abs PM	CA PM	# Days Active	Average Extent (Miles)	Total Delay (veh-hrs)	Total Duration (minutes)
SR51-N	Elvas UP	PM	2.4	2.4	52	2.1	39,448	6,315
SR51-N	NB Fulton Ave.	PM	6.87	6.87	55	2.3	32,538	9,645
I5-S	L St.	PM	518.824	23.531	40	2.4	30,407	5,340
SR99-S	EB Consumnes River	PM	290.643	16.198	48	2.1	27,982	8,430
SR51-S	EB Exposition Bl.	PM	3.32	3.32	60	0.8	24,645	12,610
I80-E	E of CR 105d	PM	76.688	4.501	32	3.4	24,304	4,175
SR51-S	EB El Camino	PM	4.582	4.6	60	1.1	24,209	8,605
US50-E	Stockton Blvd.	PM	6.345	R.711	51	1.5	23,392	5,795
US50-W	15th St	PM	4.507	L1.351	55	1.2	20,943	7,465
I5-S	Vallejo Way	PM	517.093	21.8	59	1.0	19,326	8,055

Note:

1. 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.
2. Caltrans District 3, has plans to construct High Occupancy Vehicle (HOV) lanes on I-5, US-50, and SR-51 near downtown Sacramento. These projects would reduce delay on nearby bottlenecks identified above. However, these HOV lane projects are funded for Plans Specifications and Estimate (PS&E) only; construction funds are not available at this time.

Quarterly Mobility Statistics

Measure	Graph	Percentage Change									
		Over one year ago	Over last quarter								
Vehicle Miles of Travel (VMT)	<p>Miles (Billions)</p> <table border="1"> <tr><th>Quarter</th><th>VMT (Billions)</th></tr> <tr><td>2015 Q4</td><td>2.4</td></tr> <tr><td>2016 Q3</td><td>2.8</td></tr> <tr><td>2016 Q4</td><td>2.6</td></tr> </table>	Quarter	VMT (Billions)	2015 Q4	2.4	2016 Q3	2.8	2016 Q4	2.6	9.6%	-4.2%
Quarter	VMT (Billions)										
2015 Q4	2.4										
2016 Q3	2.8										
2016 Q4	2.6										
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Quarter</th><th>VHD (Millions)</th></tr> <tr><td>2015 Q4</td><td>1.10</td></tr> <tr><td>2016 Q3</td><td>1.10</td></tr> <tr><td>2016 Q4</td><td>1.20</td></tr> </table>	Quarter	VHD (Millions)	2015 Q4	1.10	2016 Q3	1.10	2016 Q4	1.20	0.2%	5.5%
Quarter	VHD (Millions)										
2015 Q4	1.10										
2016 Q3	1.10										
2016 Q4	1.20										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Quarter</th><th>VHD (Thousands)</th></tr> <tr><td>2015 Q4</td><td>16.0</td></tr> <tr><td>2016 Q3</td><td>15.0</td></tr> <tr><td>2016 Q4</td><td>16.0</td></tr> </table>	Quarter	VHD (Thousands)	2015 Q4	16.0	2016 Q3	15.0	2016 Q4	16.0	4.4%	11.7%
Quarter	VHD (Thousands)										
2015 Q4	16.0										
2016 Q3	15.0										
2016 Q4	16.0										
Total Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Quarter</th><th>VHD (Millions)</th></tr> <tr><td>2015 Q4</td><td>2.9</td></tr> <tr><td>2016 Q3</td><td>3.2</td></tr> <tr><td>2016 Q4</td><td>3.2</td></tr> </table>	Quarter	VHD (Millions)	2015 Q4	2.9	2016 Q3	3.2	2016 Q4	3.2	10.6%	2.8%
Quarter	VHD (Millions)										
2015 Q4	2.9										
2016 Q3	3.2										
2016 Q4	3.2										
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Quarter</th><th>VHD (Thousands)</th></tr> <tr><td>2015 Q4</td><td>40</td></tr> <tr><td>2016 Q3</td><td>43</td></tr> <tr><td>2016 Q4</td><td>46</td></tr> </table>	Quarter	VHD (Thousands)	2015 Q4	40	2016 Q3	43	2016 Q4	46	14%	6.5%
Quarter	VHD (Thousands)										
2015 Q4	40										
2016 Q3	43										
2016 Q4	46										

Measure	Graph	Percentage Change	
<p>Average Vehicle Hours of Delay by Day of Week at 60 mph</p>	<p>Hours (Thousands)</p>	<p>Largest Magnitude Decrease over one year ago</p>	<p>Largest Magnitude Decrease over last quarter</p>
		<p>Saturday -11.3% </p>	<p>Monday -6.9% </p>
		<p>Largest Magnitude Increase over one year ago</p>	<p>Largest Magnitude Increase over last quarter</p>
		<p>Thursday 24.2% </p>	<p>Thursday 17.5% </p>
<p>Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays</p>	<p>Hours (Thousands)</p>	<p>Largest Magnitude Weekday Decrease over one year ago</p>	<p>Largest Magnitude Weekday Decrease over last quarter</p>
		<p>8 AM -9.6% </p>	<p>9 AM -29.3% </p>
		<p>Largest Magnitude Weekday Increase over one year ago</p>	<p>Largest Magnitude Weekday Increase over last quarter</p>
		<p>4 PM 20.9% </p>	<p>5 PM 16.7% </p>
<p>Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays</p>	<p>Hours (Thousands)</p>	<p>Largest Magnitude Saturday Decrease over one year ago</p>	<p>Largest Magnitude Saturday Decrease over last quarter</p>
		<p>2 PM -29.3% </p>	<p>11 AM -63% </p>
		<p>Largest Magnitude Saturday Increase over one year ago</p>	<p>Largest Magnitude Saturday Increase over last quarter</p>
		<p>6 PM 10.2% </p>	<p>6 PM 44.7% </p>
<p>Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/Holidays</p>	<p>Hours (Thousands)</p>	<p>Largest Magnitude Sun./Holiday Decrease over one year ago</p>	<p>Largest Magnitude Sun./Holiday Decrease over last quarter</p>
		<p>7 PM -48.7% </p>	<p>8 PM -34.5% </p>
		<p>Largest Magnitude Sun./Holiday Increase over one year ago</p>	<p>Largest Magnitude Sun./Holiday Increase over last quarter</p>
		<p>1 PM 72.9% </p>	<p>5 PM 86.2% </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												
		Yolo -46.9%	Yolo -48%												
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter												
		Yuba 466.1%	Sacramento 14.6%												
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 -33.8%	Off-Peak Night -89.7%												
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter												
		PM Peak 12.5%	PM Peak 15.7%												
Average Number of Good and Bad Detectors	<table border="1" style="display: none;"> <thead> <tr> <th>Quarter</th> <th>Average of Good</th> <th>Average of Bad</th> </tr> </thead> <tbody> <tr> <td>2015 Q4</td> <td>1,904</td> <td>863</td> </tr> <tr> <td>2016 Q3</td> <td>1,648</td> <td>1,147</td> </tr> <tr> <td>2016 Q4</td> <td>1,602</td> <td>1,184</td> </tr> </tbody> </table>	Quarter	Average of Good	Average of Bad	2015 Q4	1,904	863	2016 Q3	1,648	1,147	2016 Q4	1,602	1,184	Change in Good over one year ago	Change in Good over last quarter
		Quarter	Average of Good	Average of Bad											
		2015 Q4	1,904	863											
		2016 Q3	1,648	1,147											
2016 Q4	1,602	1,184													
-16%	-3%														
Change in Bad over one year ago	Change in Bad over last quarter														
37%	3%														

Note: As is identified by the detector health graph above, the District's detector health is generally deteriorating. Caltrans has a Traffic Monitoring Station project (EA: 3F840) under construction to help improve detector health. Two other projects that are at the programming phase, will cover locations that were missed by previous projects

Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2016 Q4-2015 Q4		Difference 2016 Q4-2016 Q3		Rank		
		2015 Q4	2016 Q3	2016 Q4	Absolute	Percentage	Absolute	Percentage	2015 Q4	2016 Q3	2016 Q4
SR51	Sacramento	293,784	256,452	314,222	20,438	7.0%	57,770	22.5%	1	1	1
SR99	Sacramento	209,663	164,477	184,219	-25,444	-12.1%	19,742	12.0%	2	3	2
US50	Sacramento	181,918	170,830	174,240	-7,678	-4.2%	3,410	2.0%	3	2	3
I5	Sacramento	103,592	120,751	161,580	57,988	56.0%	40,829	33.8%	4	5	4
SR70	Yuba	11,767	47,039	66,610	54,843	466.1%	19,571	41.6%	14	8	5
I80	Yolo	70,845	135,549	60,346	-10,499	-14.8%	-75,203	-55.5%	5	4	6
I80	Placer	40,797	47,617	45,241	4,444	10.9%	-2,376	-5.0%	8	7	7
I80	Sacramento	55,361	40,343	42,610	-12,752	-23.0%	2,266	5.6%	7	9	8
US50	Yolo	23,033	50,429	37,206	14,173	61.5%	-13,223	-26.2%	11	6	9
SR65	Placer	16,581	16,130	25,869	9,288	56.0%	9,739	60.4%	12	11	10
SR160	Sacramento	30,440	31,911	22,821	-7,619	-25.0%	-9,090	-28.5%	10	10	11
I80	Nevada	14,830	377	9,492	-5,339	-36.0%	9,115	2418.4%	13	17	12
SR99	Butte	1,139	2,640	2,259	1,119	98.2%	-381	-14.4%	15	12	13
US50	El Dorado	1,128	616	2,212	1,084	96.1%	1,596	259.2%	16	15	14
I5	Yolo	32,279	2,216	1,409	-30,870	-95.6%	-807	-36.4%	9	14	15
SR99	Sutter	220	614	353	132	60.0%	-262	-42.6%	17	16	16
SR113	Yolo	60,703	2,471	219	-60,484	-99.6%	-2,252	-91.1%	6	13	17
SR275	Yolo	0	0	2	2		2				18
I80	Sierra	0	0	0	0		0				
SR12	Sacramento	0	0	0	0		0				
TOTALS		1,148,080	1,090,461	1,150,908	2,828	0.2%	60,447	5.5%			

I-80 in Nevada County had the highest rate of increased in delay at 2,418%, when compared with the previous quarter. The increase in delay was identified by the recovery of the detection system, which was brought back into operation after it was out of service for months. A similar increase in delay was identified on SR-70. The recovered detection system had recorded a significant increase delay when compared with previous quarters.

As identified by the congestion table above, there was a 0.2% increase in overall delay in comparison to the same quarter of the previous year. In addition, and the VMT was 9.6% higher. The increase in delay could be caused by higher traffic demand due to increased VMT.

Based upon the total delay by route, SR-51 is continually the worst performing freeway in District 3. The District is exploring the best possible ways to reduce the delay in the affected areas. The

SAC-80 HOV lane project, the only major construction project in the region, was completed at the end of year 2016. For the coming year, the performance of nearby freeways could be improved, with having less detour traffic with the completion of this project. However, these benefits could be off-set by the opening of the Golden One Arena, since both I-5 and SR-51 have experienced a significant increase in delay for this quarter. Evidence to support this conclusion includes the fact that southbound I-5 at L Street has become one of the top ten bottleneck locations for the first time.