District 10 Mobility Performance Report

2016 Fourth Quarter

DEPARTMENT OF TRANSPORTATION

January 20, 2017

: Jaime Q. Quesada

EXECUTIVE SUMMARY

Overview

Caltrans District 10 contains eight counties located within the Central Valley (San Joaquin / Stanislaus / Merced) and the Sierra Nevada (Amador / Calaveras / Tuolumne / Mariposa / Alpine). Over the years detection in Alpine and Calaveras Counties has been sparse, so the District 10 Mobility Performance Report (MPR) no longer includes these two counties in the quarterly or annual analysis.

The MPR quarterly analysis compares information in the current quarter to that of the previous quarter and the quarter one year prior. The following are the performance measures reported in the MPR:

- Vehicle Miles Traveled (VMT)
- Vehicle Hours of Delay (VHD)
- Lost Lane Miles (LLM)
- Detector Health (DH)

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

In the fourth quarter, total delay equaled 133 thousand vehicle hours of delay (VHD) at the 35 mph speed threshold (64.1% increase over one year ago; 36.2% decrease over last quarter), and 445 thousand VHD at the 60 mph threshold (22.1% increase over one year ago; 32.0% decrease over last quarter). The average weekday delay experienced in this quarter was approximately 1,733 VHD at 35 mph (42.4% increase over one year ago; 35.3% decrease over last quarter), and 6,171 VHD at 60 mph (17.3% increase over one year ago; 30.3% decrease over last quarter). The increases in VHD over one year ago can be attributed to the fact that multiple count stations were out of commission because of construction projects in the District along I5 and SR 99. Now that those projects have been completed the PeMS system is taking the count station data in to account. The decreases in VHT over last quarter can be attributed to the fact that widening projects along I5 and SR 99 were completed in mid to late 2016. The additional capacity along both major routes has relieved congestion in Stanislaus and San Joaquin Counties.

Top Ten Bottlenecks for 2016 Quarter 4

FWY	COUNTY	LOCATION	SHIFT	ABS. PM	CA PM	# DAYS ACTVE	AVG. EXTENT (MILES)	TOTAL DELAY (VEH-HRS)	TOTAL DURATION (MINS)
I205-W	SJ	E OF HANSEN RD	AM	3.310	2.380	47	4.9	89,388	6,370
I580-E	SJ	E of PG&E Power Line	PM	12.306	11.710	9	6.2	5,456	830
SR99-S	SJ	N/O Jack Tone Rd	PM	238.974	3.189	49	0.4	4,403	6,995
SR99-S	SJ	S/O Austin Rd OC	PM	240.425	4.640	50	0.2	3,439	6,970
SR99-S	STA	Maze Blvd	PM	227.325	16.290	6	3.3	2,469	750
SR99-S	STA	N/O SR 219/Broadway Ave	PM	234.058	R23.023	8	3.1	1,850	450
I5-N	SJ	N/O French Camp Rd	PM	468.140	R22.648	44	0.2	1,631	4,895
SR99-S	SJ	S/O Rte 120	PM	241.202	5.417	16	0.6	1,206	1,645
SR99-S	SJ	Jct Rte 120	PM	241.589	5.804	12	0.5	1,185	990
SR99-N	STA	N/O SR 219/Broadway Ave	PM	234.083	R23.023	17	0.8	946	820

The following District 10 projects are currently being constructed or are scheduled for construction effective January 2017. These current and future (planned) projects will relieve congestion in District 10:

MERCED COUNTY

MER 99 MISSION AVENUE INTERCHANGE / FREEWAY; EA 10-36311
Convert from 4 lane expressway to 6 lane freeway on an 8 lane right of way
Approve Construction Contract Date – 04/07/2008
End Project – 04/02/2018

MER 99 LIVINGSTON FREEWAY STAGE 2; EA 10-3169E
Convert from 4 lane expressway to 6 lane freeway on an 8 lane right of way
Approve Construction Contract Date – 03/28/2008
End Project – 06/30/2017

MER 99 NB LIVINGSTON MEDIAN WIDENING; EA 10-0Q121
Lane widening from 2 to 3 lanes
Approve Construction Contract Date – 08/01/2021
End Project – 10/02/2023

MER 99 SB LIVINGSTON MEDIAN WIDENING; EA 10-0Q122
Lane widening from 2 to 3 lanes
Approve Construction Contract Date – 01/19/2019
End Project – 10/01/2021

MER 152 – LOS BANOS BYPASS SEGMENT I; EA 10-41911
Convert 4 lane expressway to 6 lane freeway
Approve Construction Contract Date – 05/15/2018
End Project – 10/01/2020

SAN JOAQUIN COUNTY

SJ 4 RAMP METERING IMPROVEMENTS; EA 10-1F180
Install ramp meters along SR 4 between the I-5 and SR 99 Connectors
Currently in PRS/PDS; PA&ED Scheduled for mid-2016
End Project – Estimated to be mid 2020

SJ 99 – SOUTH STOCKTON WIDENING; EA 10-3A100
Widen existing freeway from 4 to 6 lanes
Approve Construction Contract Date – 12/3/2012
End Project – 12/5/2017

SJ 120 RAMP METERING IMPROVEMENTS; EA 10-1F040
Install ramp meters along SR 4 between the I-5 and SR 99 Connectors
Currently in PRS/PDS; PA&ED Scheduled for mid-2016
End Project – Estimated to be mid 2020

I-205 SMART CORRIDOR PHASE 2; EA 10-1C330
Install ramp meters and ITS elements along I205 from MacArthur to Grant Line Road

Currently in PA&ED
End Project – 11/01/2021

STANISLAUS COUNTY

STA 99 – PELANDALE INTERCHANGE; EA 10-47210
Modify Existing Interchange
Approve Construction Contract Date – 4/15/2014
End Project – 12/1/2017

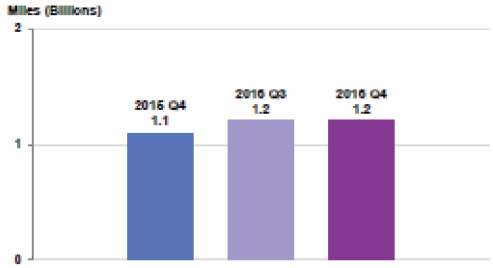
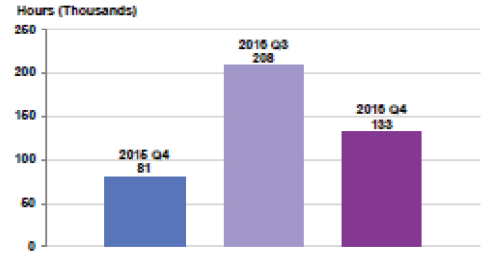
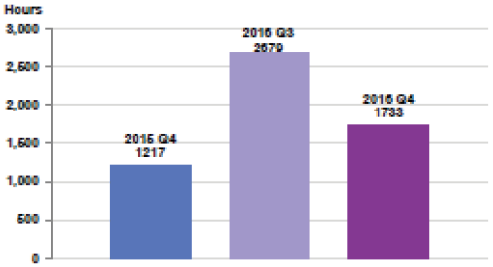
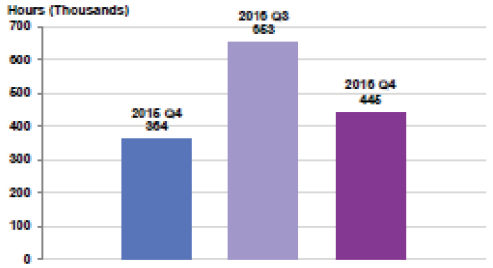
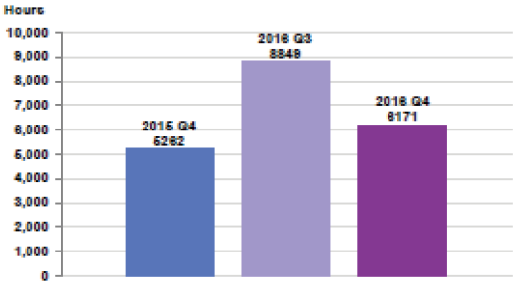
STA 99 – KIERNAN INTERCHANGE; EA 10-0L330
Reconstruct Interchange
Approve Construction Contract Date – 2/1/2013
End Project – 11/30/2017

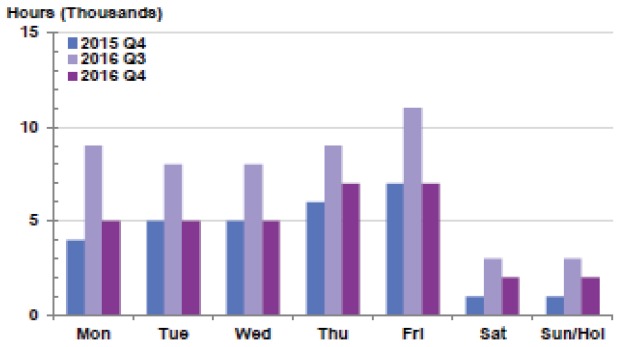
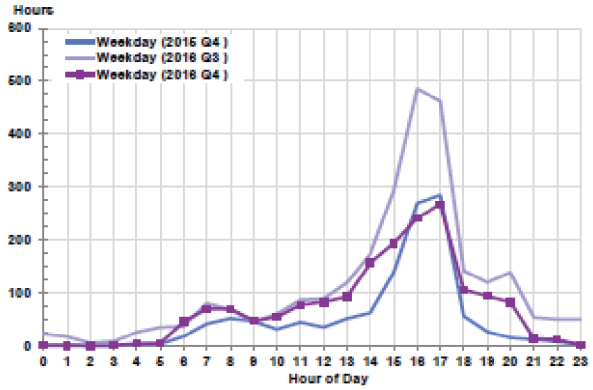
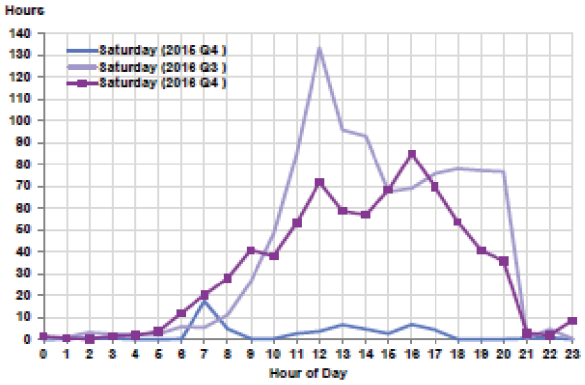
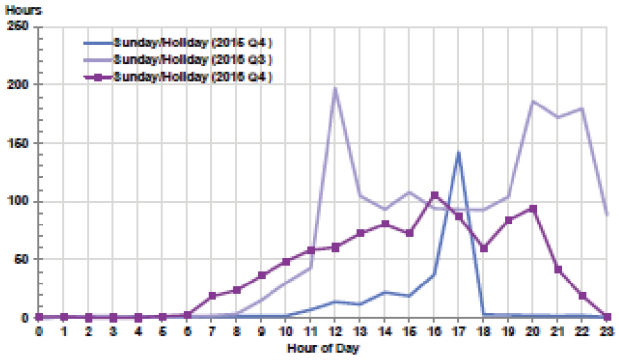
STA 99 / SJ 99 RAMP METERING & MAINLINE IMPROVEMENTS; EA 10-1C300
Improve Mainline and Ramp Operations; Standardize Structure Clearance; Add Auxiliary Lane
Currently in PA&ED
End Project – Estimated to be mid 2020

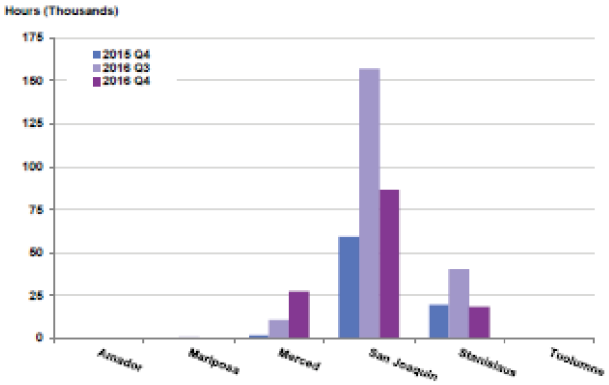
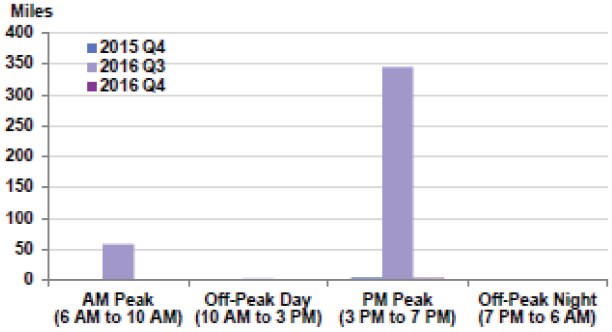
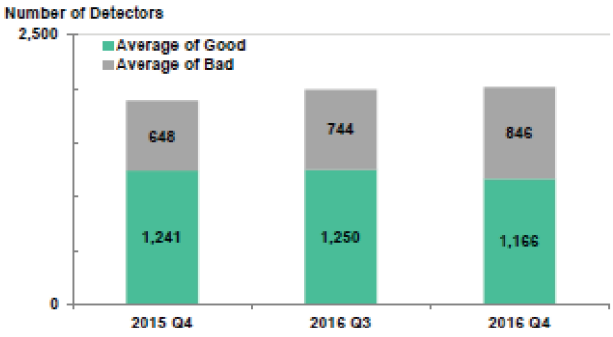
The above capacity increasing, ramp metering, interchange improvement, and interchange construction projects are located on the routes, in the cities, and in the counties that experience the most congestion in District 10. It is expected that the projects will help increase the Vehicle Miles Traveled while reducing congestion and delay as the population and demand in District 10 grows over the next 10 years.

The next section of this report summarizes the District 10 2016 Q4 Quarterly Mobility Statistics.

2016 Q4 Quarterly Mobility Statistics – District 10

Measure	Graph	Percentage Change	
		Over one year ago	Over last quarter
Vehicle Miles of Travel (VMT)		10.1%	-1.3%
Total Vehicle Hours of Delay (VHD) at 35 mph		64.1%	-36.2%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		42.4%	-35.3%
Total Vehicle Hours of Delay (VHD) at 60 mph		22.1%	-32%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		17.3%	-30.3%

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 Monday -42.2%
		Largest Magnitude Increase over one year ago Thursday 28.4%	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 4 PM -10.4%	Largest Magnitude Weekday Decrease over last quarter 4 PM -50.3%
		Largest Magnitude Weekday Increase over one year ago 2 PM 149.1%	Largest Magnitude Weekday Increase over last quarter 6 AM 24.3%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 2 AM -40.1%	Largest Magnitude Saturday Decrease over last quarter 12 PM -46.1%
		Largest Magnitude Saturday Increase over one year ago 4 PM 1144.9%	Largest Magnitude Saturday Increase over last quarter 8 AM 150.3%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 5 PM -38.7%	Largest Magnitude Sun./Holiday Decrease over last quarter 10 PM -89.4%
		Largest Magnitude Sun./Holiday Increase over one year ago 8 PM 4317.3%	Largest Magnitude Sun./Holiday Increase over last quarter 9 AM 138.8%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago Stanislaus -5%	Largest Magnitude Decrease over last quarter San Joaquin -44.8%
		Largest Magnitude Increase over one year ago San Joaquin 45.9%	Largest Magnitude Increase over last quarter Merced 159.8%
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph		Largest Magnitude Decrease over one year ago PM Peak -11.2%	Largest Magnitude Decrease over last quarter PM Peak -99.1%
		Largest Magnitude Increase over one year ago AM Peak 47.4%	Largest Magnitude Increase over last quarter –
Average Number of Good and Bad Detectors		Change in Good over one year ago -6%	Change in Good over last quarter -7%
		Change in Bad over one year ago 31%	Change in Bad over last quarter 14%

Congestion by Route											
		Vehicle Hours of Delay at 35 mph			Difference 2016 Q4-2015 Q4		Difference 2016 Q4-2016 Q3		Rank		
Route	County	2015 Q4	2016 Q3	2016 Q4	Absolute	Percentage	Absolute	Percentage	2015 Q4	2016 Q3	2016 Q4
I205	San Joaquin	167,256	271,280	274,610	107,354	64.2%	3,330	1.2%	1	1	1
SR99	San Joaquin	42,903	121,405	64,509	21,605	50.4%	-56,896	-46.9%	2	2	2
I580	San Joaquin	23,085	10,261	57,976	34,891	151.1%	47,716	465.0%	3	6	3
SR99	Merced	1,668	9,902	25,734	24,066	1442.5%	15,832	159.9%	8	7	4
SR99	Stanislaus	16,618	22,448	14,101	-2,517	-15.1%	-8,347	-37.2%	4	3	5
SR4	San Joaquin	10,738	19,139	10,360	-378	-3.5%	-8,779	-45.9%	5	4	6
SR219	Stanislaus	0	1,865	3,857	3,857		1,992	106.9%		9	7
I5	San Joaquin	3,587	3,517	3,315	-271	-7.6%	-202	-5.7%	6	8	8
SR152	Merced	113	522	1,636	1,523	1351.3%	1,114	213.3%	9	11	9
I5	Stanislaus	3,033	15,806	717	-2,316	-76.4%	-15,089	-95.5%	7	5	10
SR49	Mariposa	81	528	67	-14	-17.5%	-461	-87.3%	10	10	11
SR12	San Joaquin	0	0	1	1		1				12
SR132	San Joaquin	1	422	0	-1	-87.5%	-422	-100.0%	12	12	13
I5	Merced	3	113	0	-3	-100.0%	-113	-100.0%	11	13	
SR104	Amador	0	0	0	0		0				
SR108	Tuolumne	0	0	0	0		0				
SR120	San Joaquin	0	0	0	0		0				
SR120	Tuolumne	0	0	0	0		0				
TOTALS		**269,085**	**477,206**	**456,883**	**187,798**	**69.8%**	**-20,323**	**-4.3%**			

SR 219 Stanislaus: No delay detected in 2015 Q4

SR 12 San Joaquin: No delay detected in 2015 Q4 and 2016 Q3

SR 132 San Joaquin: No delay detected in 2016 Q4

I5 Merced: No delay detected in 2016 Q4

SR 104 Amador: No delay detected in 2015 Q4, 2016 Q3, and 2016 Q4

SR 108 Tuolumne: No delay detected in 2015 Q4, 2016 Q3, and 2016 Q4

SR 120 San Joaquin: No delay detected in 2015 Q4, 2016 Q3, and 2016 Q4

SR 120 Tuolumne: No delay detected in 2015 Q4, 2016 Q3, and 2016 Q4