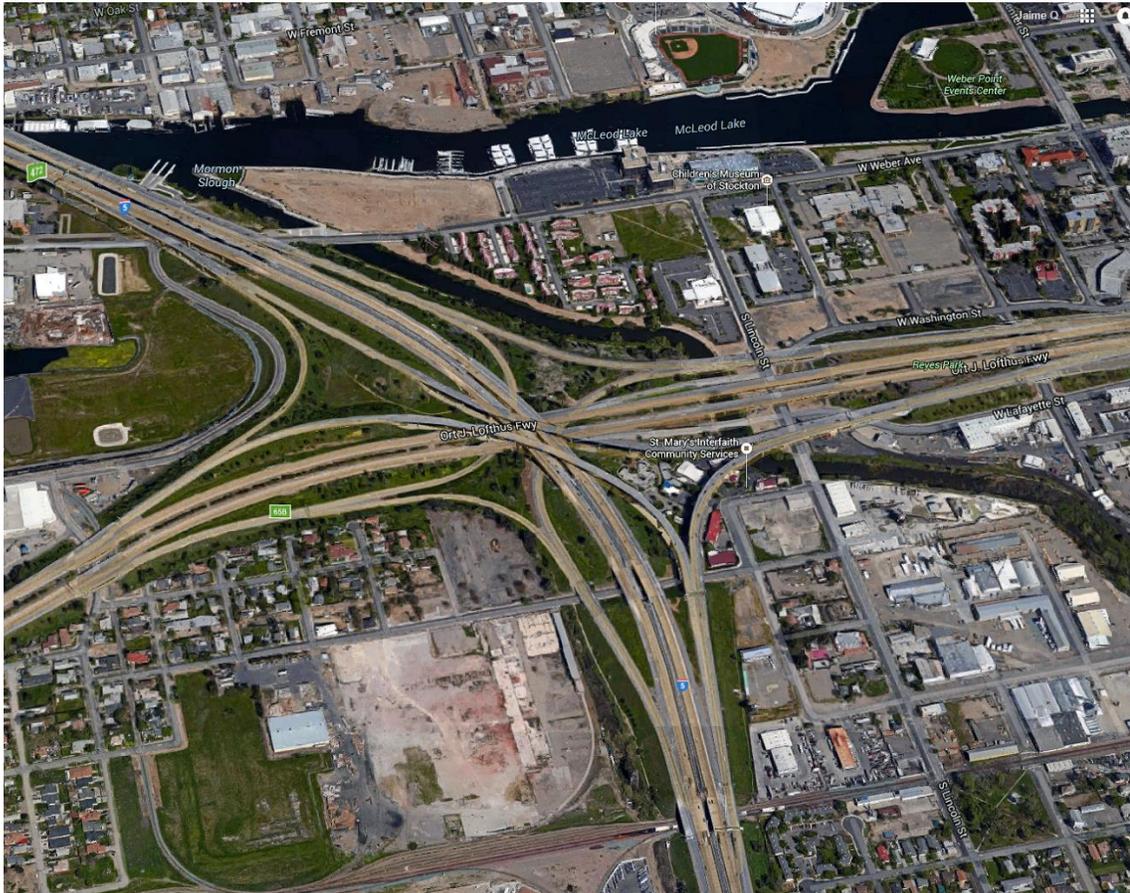


District 10

Mobility Performance Report

2012



The I-5 – SR 4 Crosstown Connector in Stockton. Image from Google Maps



California Department of Transportation
Division of Traffic of Operations
Office of Performance

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1. SUMMARY ANALYSIS

District 10 in California consists of eight counties with the District Headquarters located in the City of Stockton. The counties include Alpine*, Amador, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus, and Tuolumne. Of those eight counties only Alpine county has no vehicle detection capabilities. Five of District 10's counties are classified as rural and are predominantly located in the mountainous region; those counties include *Alpine, Amador, Calaveras, Mariposa, and Tuolumne. The remaining three counties are classified as urban and are predominantly located in the central valley; those counties include Merced, San Joaquin, and Stanislaus. District 10's 2012 population was estimated at 1,640,162 and experienced 0.7 percent growth in population over 2011. Overall, District 10's population made up 4.3 percent of the State's total population in 2012. All District 10 counties experienced a decrease in unemployment between 2011 and 2012. In 2012 the total Vehicle Miles of Travel (VMT) was 5.2 billion miles which accounted for a 472.6 million mile increase over 2011 in District 10. The increase can be attributed to the population growth and higher employment rate experienced by District 10 from 2011 to 2012.

District 10 operated and maintained 2,872 directional mainline miles in 2012. Of those directional mainline miles 1,357 had vehicle detection and were predominantly located in Merced, San Joaquin, and Stanislaus counties. At the end of 2012 the total number of detectors in District 10 was 1,385, a 5 percent increase over 2011. Detection data classified as good was 90 percent, an increase of 24.7 percent over 2011; detection data classified as bad was 10 percent, an increase of 122.6 percent over 2011. The high percentage of good detection can be attributed to the fact that the additional new detectors were working properly. The increase in bad detection can be attributed to tampering and theft of components and wiring for detectors that report to the Performance Measurement System (PeMS). District 10 is making every effort to ensure that detectors operate effectively and that detectors are installed whenever possible as part of in-house and consultant projects. District 10 has also taken steps in the past year to install the equipment so that it is tamper or theft proof. Despite these efforts, thieves are still finding ways to steal components and wiring.

**Alpine County is excluded from District 10's analysis due to lack of detection on State highways in that county.*

The total Vehicle Hours of Delay (VHD) at 60 mph for District 10 in 2012 was 5.5 million hours. The top ten congested freeways in District 10 accounted for 77 percent of the total congestion and were located in Merced, San Joaquin, and Stanislaus counties. SR 99 & I-5 run through all three counties; SR 140 runs through Merced County, and I-205, SR 120, SR 4 all run through San Joaquin County. The county with the largest VHD at 60 in District 10 is San Joaquin County, which accounts for 57 percent of the total VHD at 60. From 2011 to 2012 San Joaquin County experienced a decrease of 3.9 percent in VHD at 60 (3.1 million in 2012). The county with the second largest VHD at 60 in District 10 is Merced, which accounts for 16 percent of the total VHD at 60. From 2011 to 2012 Merced County experienced an increase of 37.8 percent in VHD at 60 (865,727 in 2012). San Joaquin County showed a 3.9 percent decrease in VHD at 60 compared to 2011. This decrease may have been attributed to bad detection caused by construction projects along SR 99 and I-5 in the county. From 2011 to 2012 the county with the largest increase in VHD at 60 was Mariposa County with an increase of 345 percent over 2011 (291,444 hours in 2012). The reasons for such a dramatic increase can be attributed to the fact that previously, vehicle detection in Mariposa County was low. Additional newly installed detection equipment significantly increased the available data over the previous year.

I-205 is an inter-regional route in San Joaquin County that connects the Central Valley to the Bay Area. The most congested day of the week for average VHD at 60 was Monday with 22,041 hours, a 1 percent increase over 2011. This minor increase can be attributed to the fact that a number of District 10 residents travel to the Bay Area on Monday to work and stay the week to avoid the long commute home. Further, the population increase in San Joaquin County was just 0.8 percent. The total bottleneck delay in 2012 was 58,280 hours in District 10, an increase of 3.4 percent over 2011. The bottleneck delay is attributed to three bottlenecks that met the criteria of 15 or more minutes of 35 MPH traffic on a recurring basis. Two instances occurred in the AM Peak Period along westbound I-205 at the Mountain House Parkway overcrossing, and the 11th Street overcrossing west of the City of Tracy. One instance occurred in the PM Peak Period along eastbound I-205 at the MacArthur Drive overcrossing east of the City of Tracy. This data is consistent with the fact that commuters from the Central Valley use I-205 to travel to the Bay Area on a daily basis.

2. DESCRIPTIVE STATISTICS

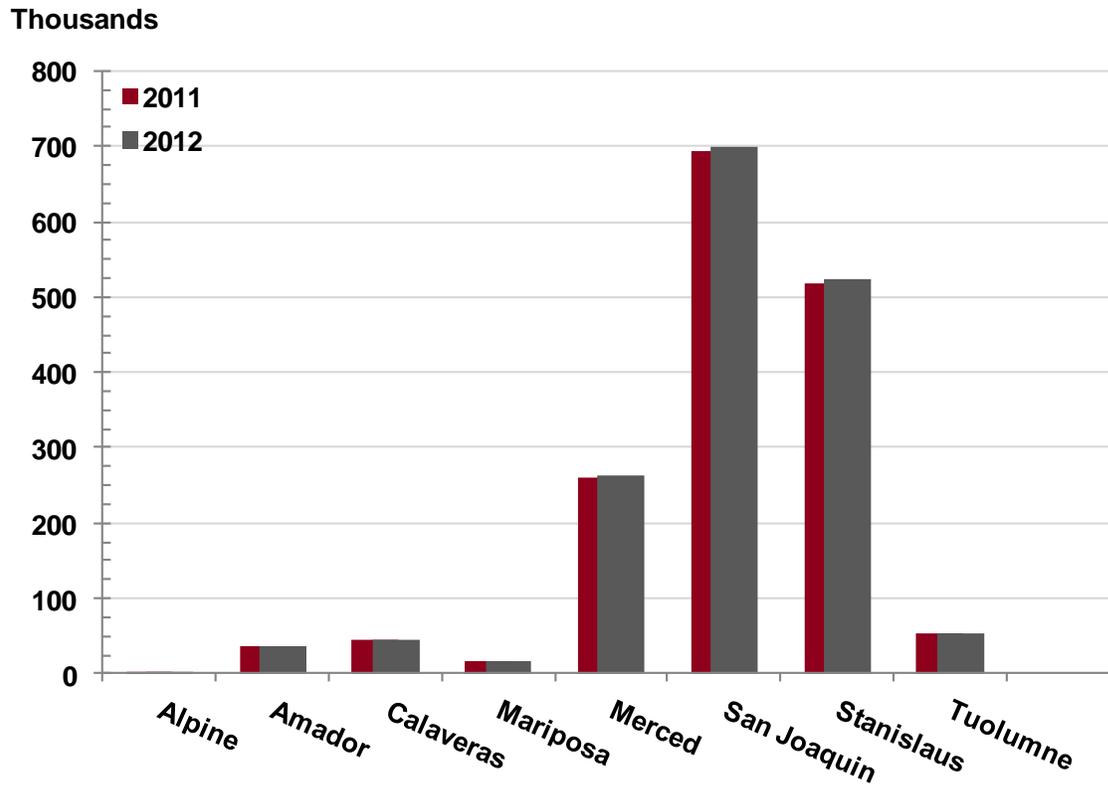
District Headquarters: Stockton
Counties: Amador, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus, Tuolumne
Counties without Detection: Alpine
Population: 1,640,162, 0.7% increase
Population as a Percentage of Statewide: 4.3%

Table 1. POPULATION ESTIMATES AND ABSOLUTE AND PERCENT CHANGE, 2011-2012

County	2011	2012	Difference (2012 - 2011)	
	Population	Population	Absolute	Percent
Alpine	1,088	1,087	-1	-0.1%
Amador	37,123	36,741	-382	-1.0%
Calaveras	45,216	44,932	-284	-0.6%
Mariposa	17,952	18,026	74	0.4%
Merced	260,029	262,478	2,449	0.9%
San Joaquin	692,997	698,414	5,417	0.8%
Stanislaus	519,339	524,124	4,785	0.9%
Tuolumne	54,524	54,360	-164	-0.3%
Total	1,628,268	1,640,162	11,894	0.7%

Alpine County does not participate in mobility performance reporting.
Source: State of California, Department of Finance, *E-1 Population Estimates for Cities, Counties, and the State—January 1, 2012 and 2013*. Sacramento, California, May 2013.

FIGURE 1
POPULATION, BY COUNTY, 2011-2012



Employment, 2012 Monthly Average: 612,068
Unemployment Rate, 2012 Monthly Average: 15.1%, 1.5% decrease over 2011

Table 2. UNEMPLOYMENT, AND PERCENT CHANGE, BY COUNTY, 2011-2012

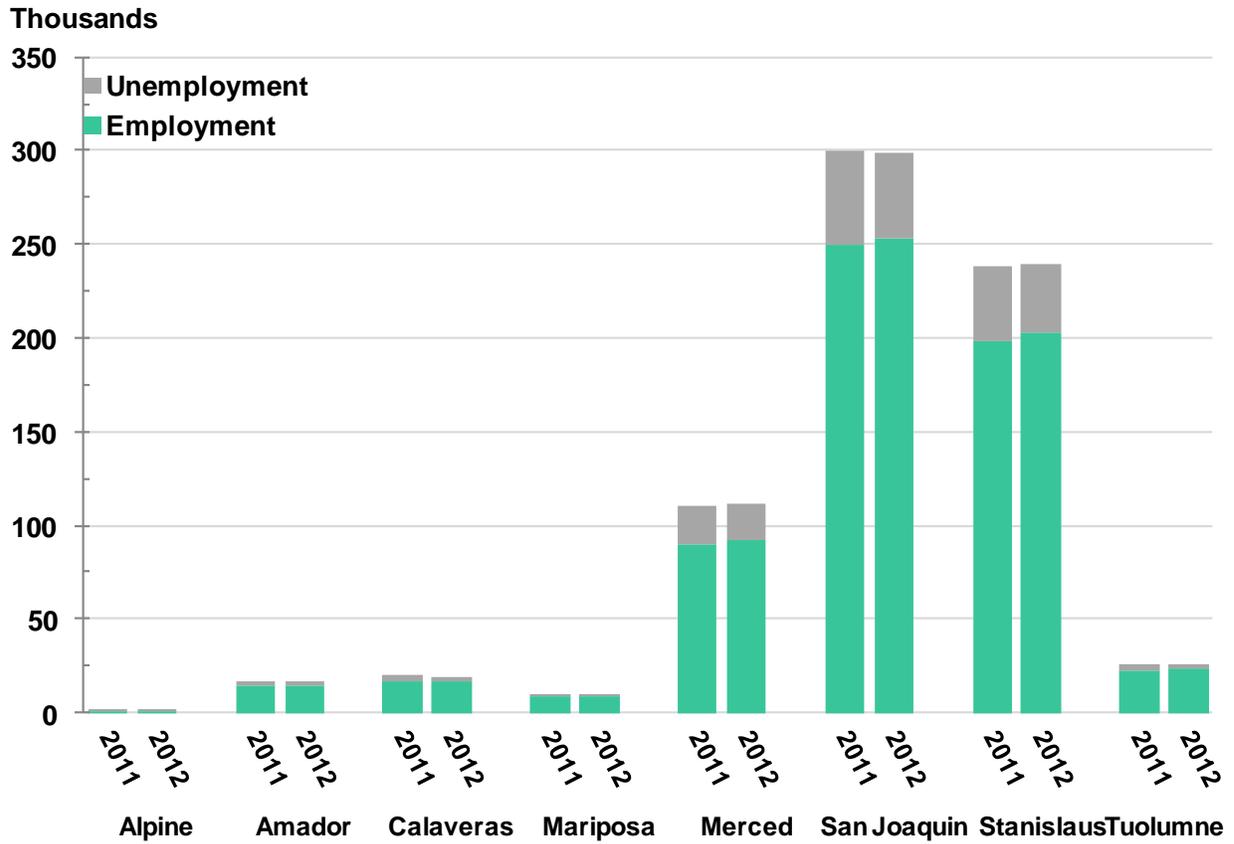
County	Unemployment Rate, 2011	Unemployment Rate, 2012	Percent Change in Rate of Unemployment (2012 - 2011)
Alpine	14.9%	13.2%	-1.7%
Amador	12.8%	11.8%	-1.0%
Calaveras	14.6%	13.0%	-1.6%
Mariposa	11.9%	11.0%	-0.9%
Merced	18.3%	17.0%	-1.3%
San Joaquin	16.8%	15.2%	-1.7%
Stanislaus	16.7%	15.2%	-1.6%
Tuolumne	13.0%	11.6%	-1.3%
District Total	16.7%	15.1%	-1.5%

Alpine County does not participate in mobility performance reporting.

Data not seasonally adjusted.

Source: State of California, Employment Development Department (EDD), Labor Market Information Division; data downloaded September 9, 2013.

FIGURE 2
EMPLOYMENT AND UNEMPLOYMENT, BY COUNTY, 2011-2012



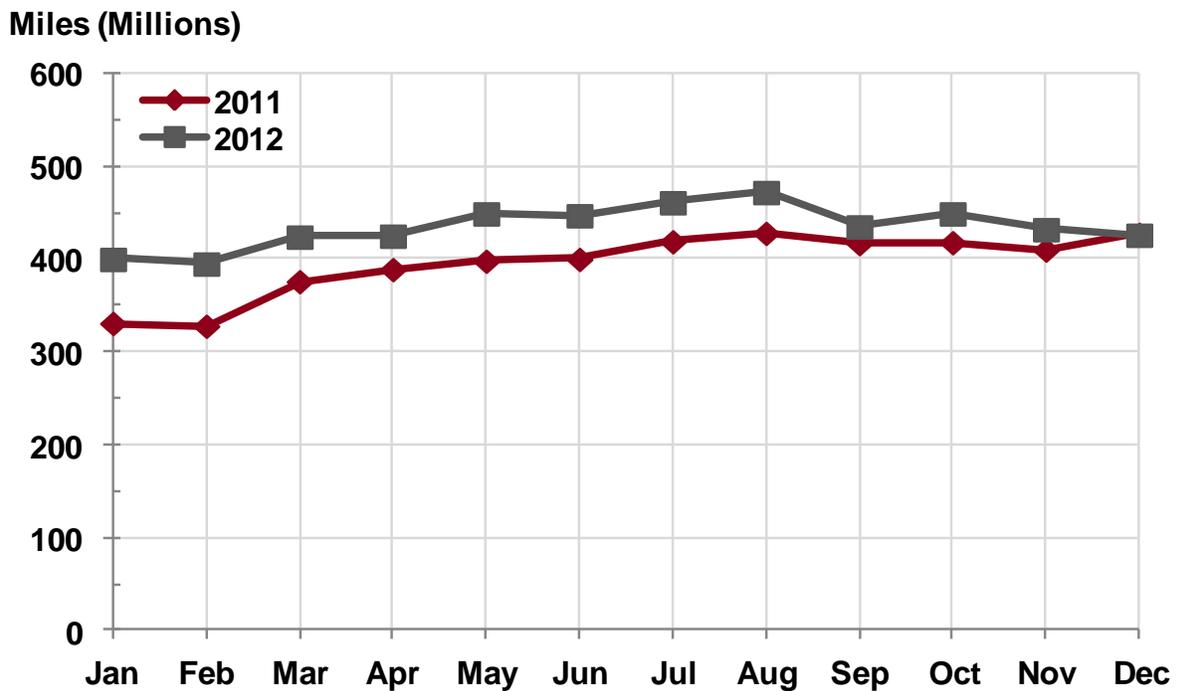
3. TRAVEL DEMAND

Vehicle Miles of Travel, 2012: 5.2 billion miles
Absolute and Percentage Change over 2011: 472.6 million VMT increase, 10% increase over 2011
Peak Travel Month, Percentage Change over 2011: August, 471.7 million miles, 10.3% increase over 2011

Monthly Trend

FIGURE 3 (A)

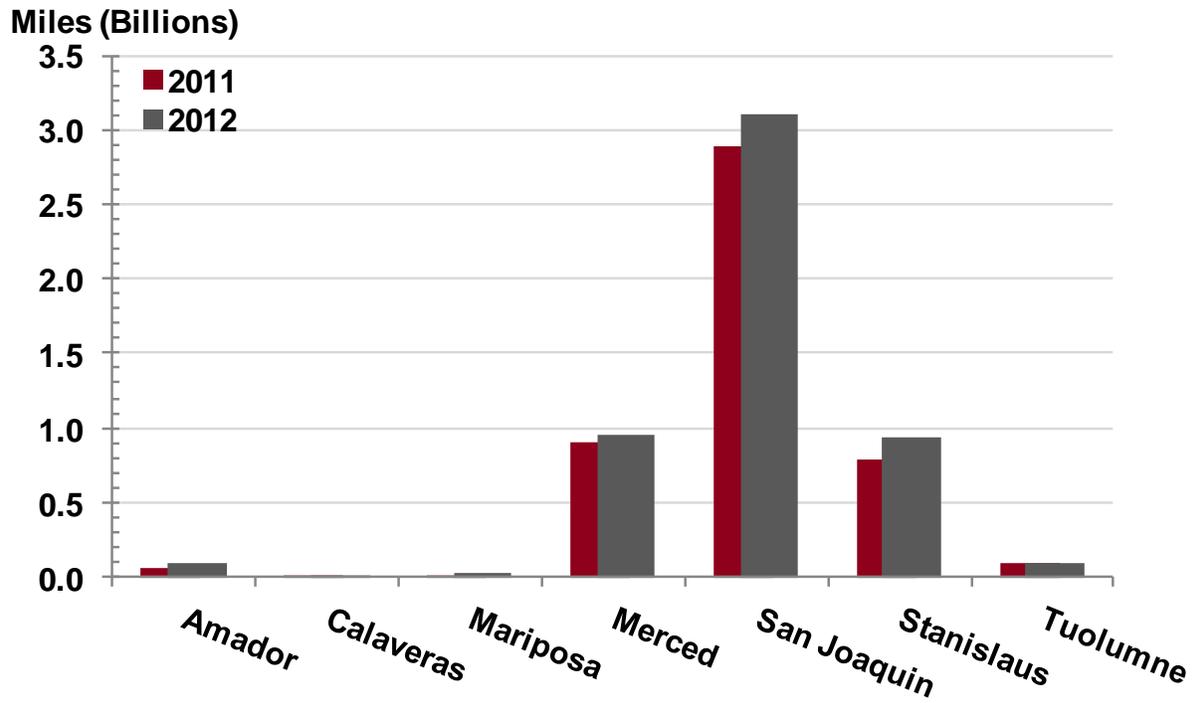
TOTAL VEHICLE MILES OF TRAVEL, BY MONTH, 2011-2012



County Trend

FIGURE 3 (B)

TOTAL VEHICLE MILES OF TRAVEL, BY COUNTY, 2011-2012



4. TRAFFIC CONGESTION

4.1. Total and Average Vehicle Hours of Delay at 35 and 60 Miles per Hour

4.1.1 Delay at 35 Miles per Hour

Vehicle Hours of Delay, 35 mph: 1.5 million hours,
 13.3% increase over 2011
Average Non-Holiday Weekday Delay, 35 mph: 4,867 hours, 8.9% increase over 2011
Percentage of Statewide VHD at 35 mph: 1.6%, 0.1% increase over 2011

FIGURE 4

TOTAL VEHICLE HOURS OF DELAY AT 35 MILES PER HOUR, BY MONTH, 2011-2012

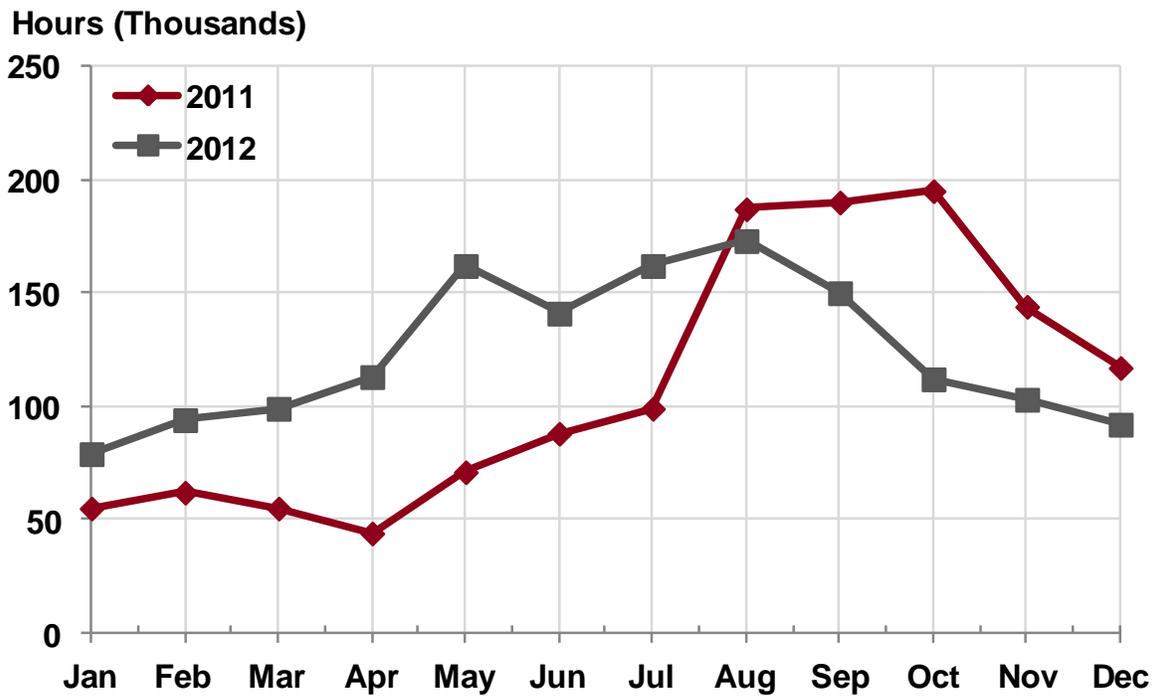
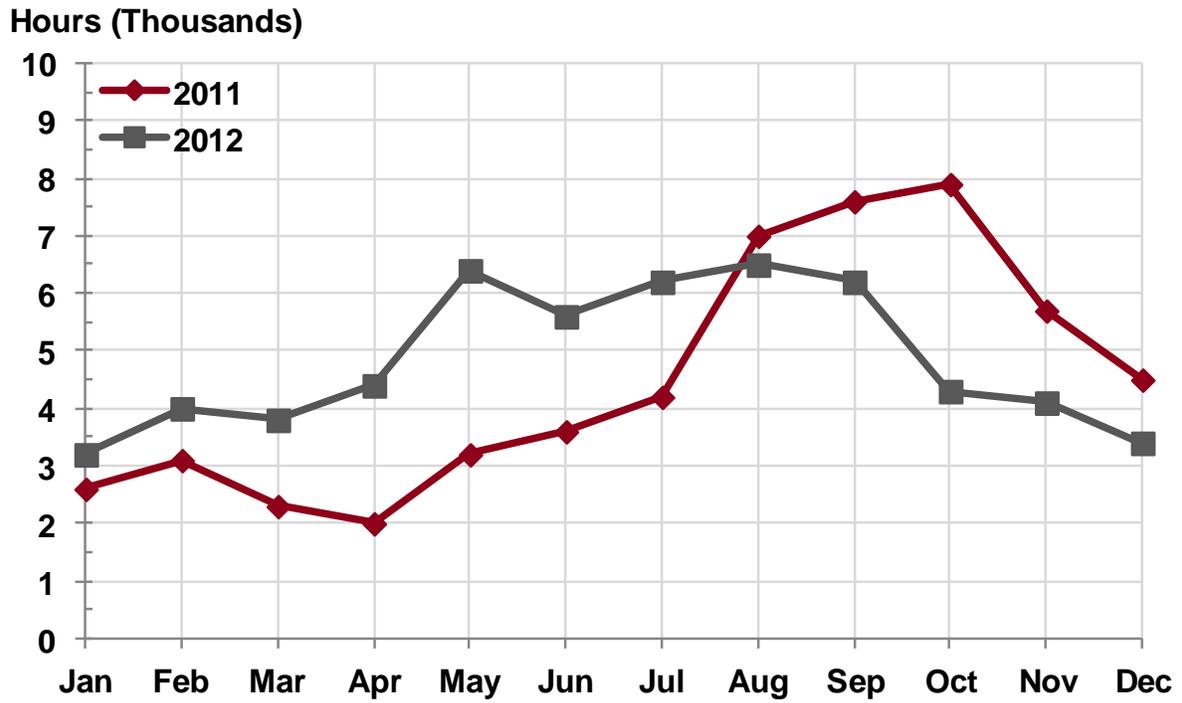


FIGURE 5
AVERAGE NON-HOLIDAY WEEKDAY VEHICLE HOURS OF DELAY AT 35 MILES PER HOUR, BY
MONTH, 2011-2012



4.1.2 Delay at 60 Miles per Hour

Vehicle Hours of Delay, 60 mph: 5.5 million hours,
 12.2% increase over 2011
Average Non-Holiday Weekday Delay, 60 mph: 18,203 hours, 8% increase over 2011
Percentage of Statewide VHD at 60 mph: 2.5%, 0.1% increase over 2011

FIGURE 6

TOTAL VEHICLE HOURS OF DELAY AT 60 MILES PER HOUR, BY MONTH, 2011-2012

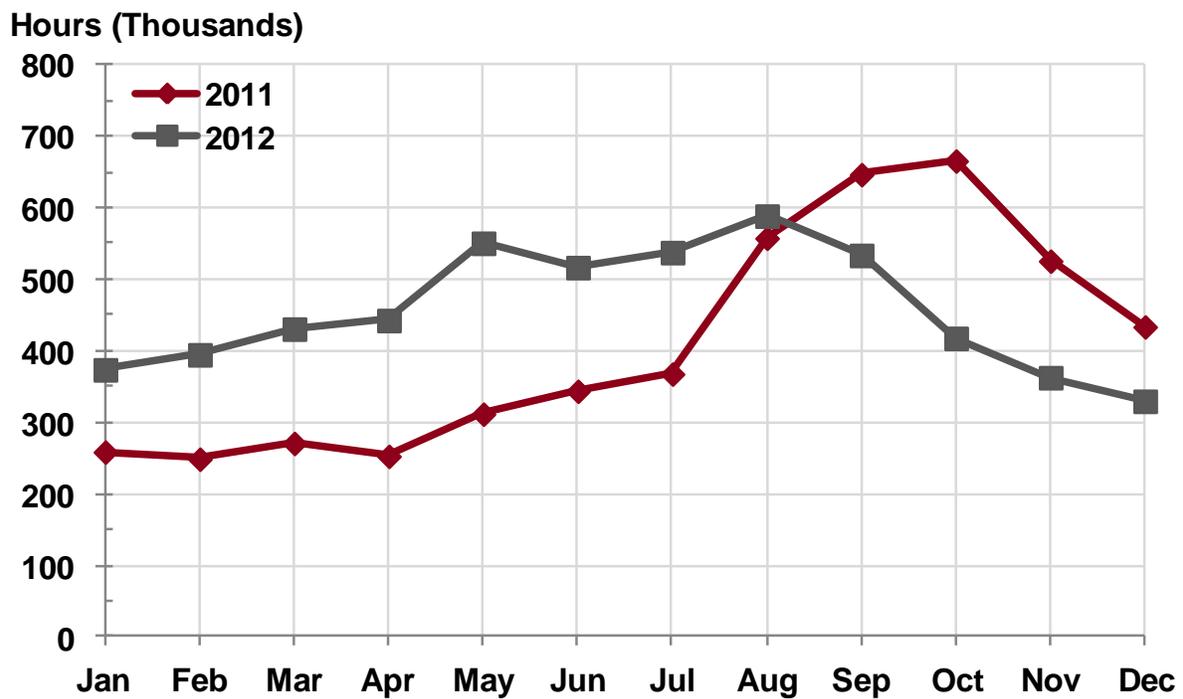
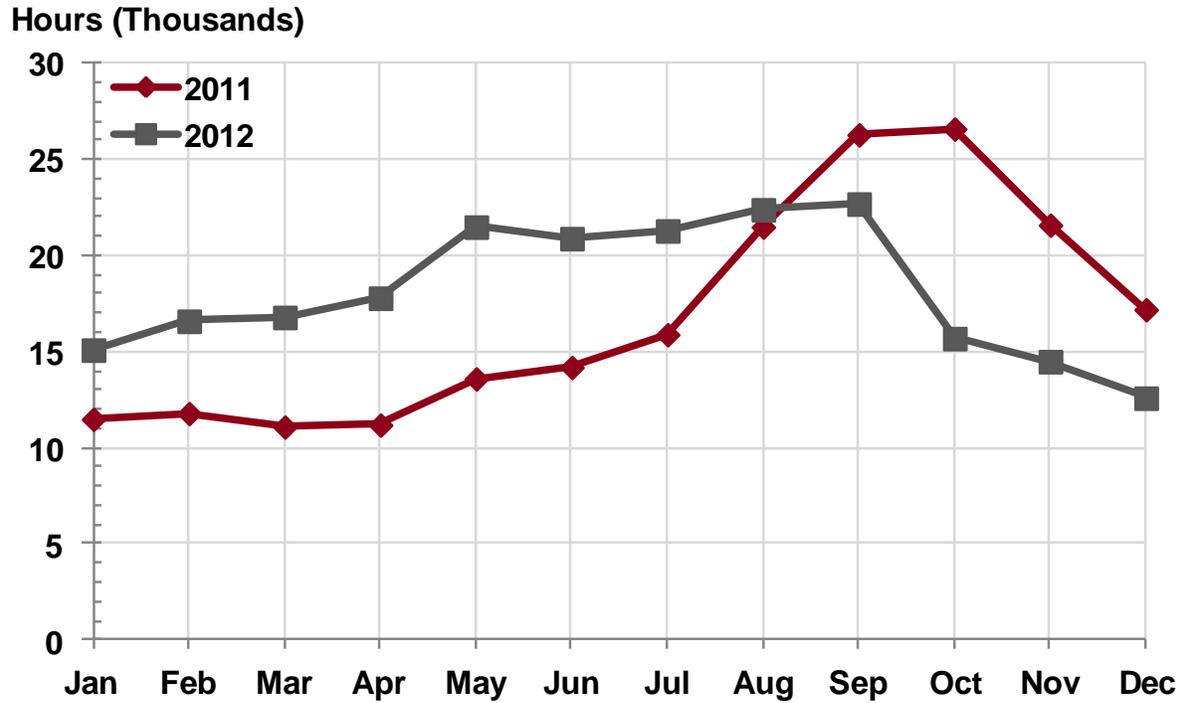


FIGURE 7
AVERAGE NON-HOLIDAY WEEKDAY VEHICLE HOURS OF DELAY AT 60 MILES PER HOUR,
BY MONTH, 2011-2012



4.2. Average Vehicle Hours of Delay by Day of Week

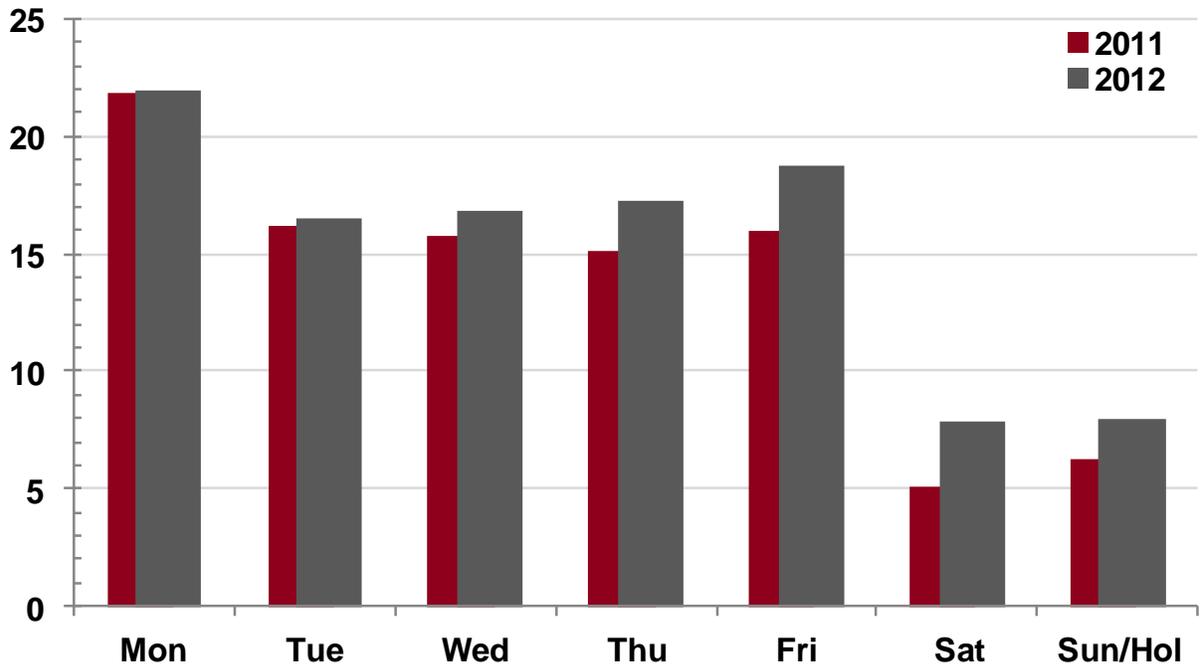
Most Congested Day of the Week, 60 mph: Monday, 22,041 hours,
 1% increase over 2011
Highest Absolute Change in Delay, 60 mph: Saturday, 2,749 VHD increase,
 54% increase over 2011
Highest Percentage Change in Delay: Saturday, 2,749 VHD increase,
 54% increase over 2011

Delay at 60 miles per hour

FIGURE 8

AVERAGE VEHICLE HOURS OF DELAY AT 60 MILES PER HOUR, BY DAY OF WEEK, 2011-2012

Hours (Thousands)



4.3. Average Vehicle Hours of Delay by Hour of Day

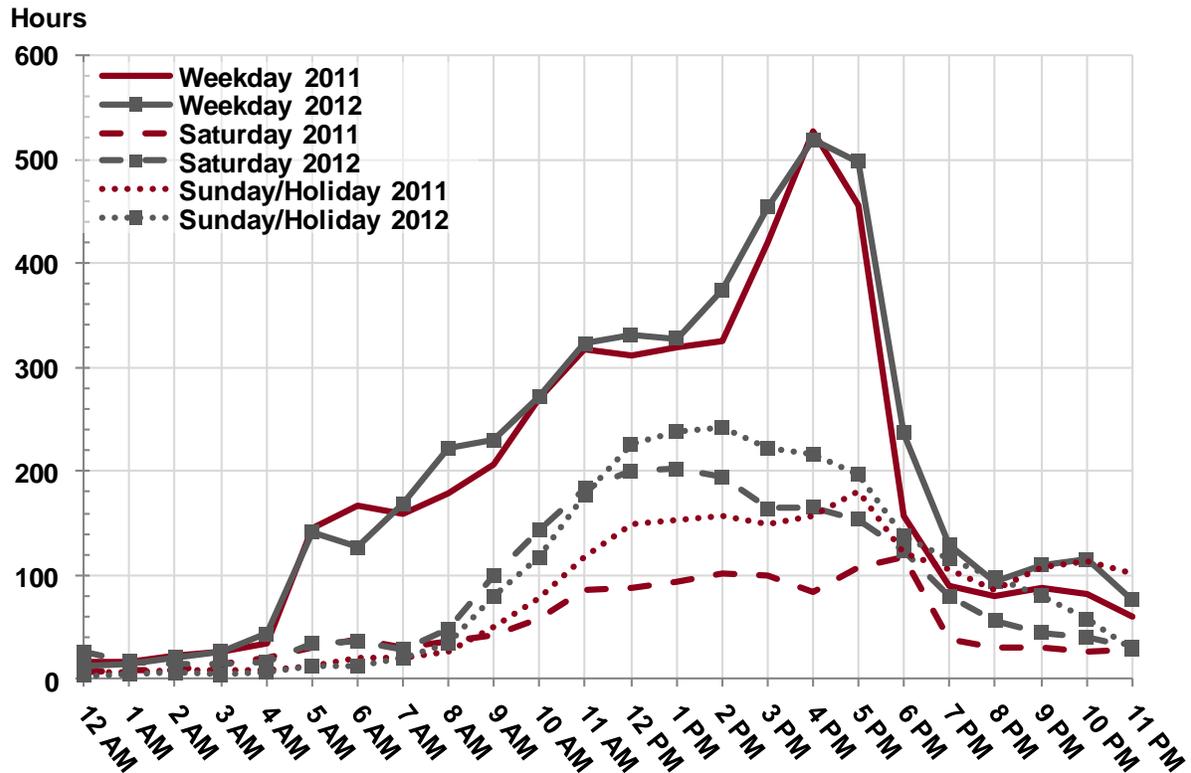
4.3.1 Delay at 35 Miles per Hour

- Weekday PM Peak Hour, 35 mph:** 4 PM, 518 hours, 2% decrease over 2011
- Weekday AM Peak Hour, 35 mph:** 9 AM, 230 hours, 11% increase over 2011
- Saturday Peak Hour, 35 mph:** 1 PM, 202 hours, 114% increase over 2011
- Sunday/Holiday Peak Hour, 35mph:** 2 PM, 242 hours, 54% increase over 2011

Delay at 35 miles per hour

FIGURE 9

AVERAGE VEHICLE HOURS OF DELAY AT 35 MILES PER HOUR, BY HOUR OF DAY, 2011-2012



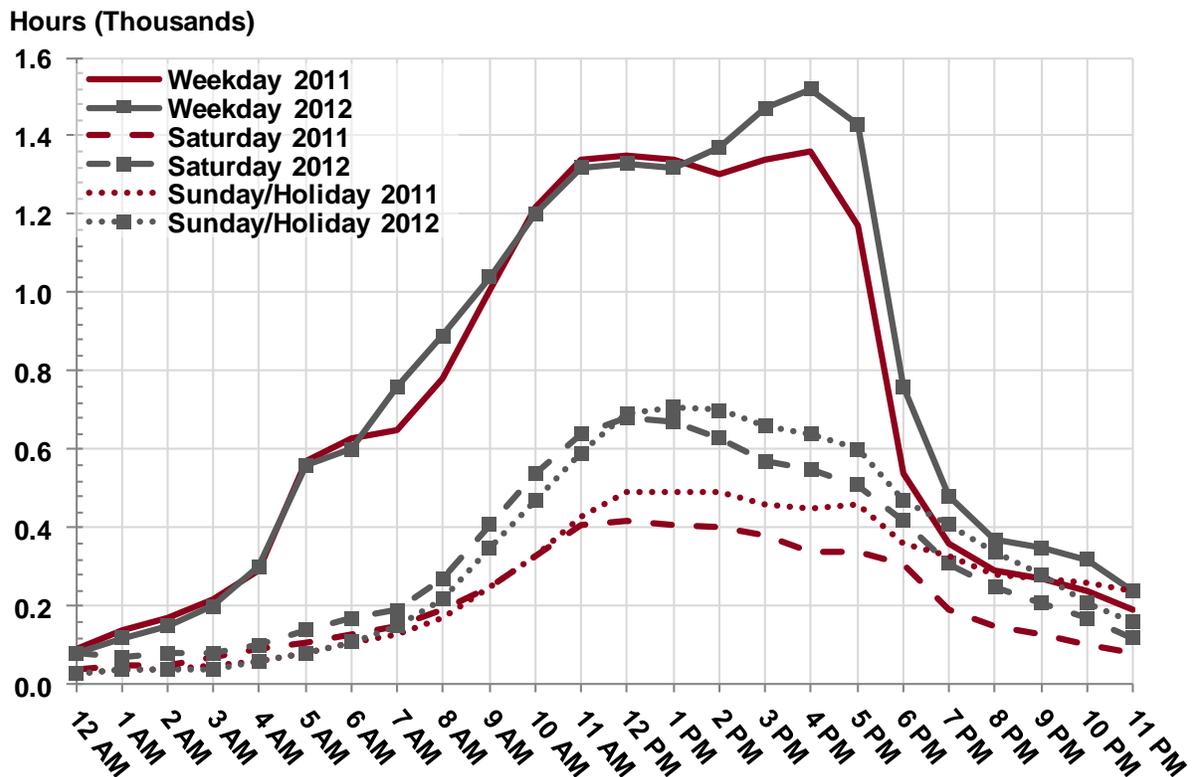
4.3.2 Delay at 60 Miles per Hour

Weekday PM Peak Hour, 60 mph: 4 PM, 1,520 hours, 12% increase over 2011
Weekday AM Peak Hour, 60 mph: 9 AM, 1,042 hours, 3% increase over 2011
Saturday Peak Hour, 60 mph: 12 PM, 681 hours, 63% increase over 2011
Sunday/Holiday Peak Hour, 60 mph: 1 PM, 708 hours, 43% increase over 2011

Delay at 60 miles per hour

Figure 10

AVERAGE VEHICLE HOURS OF DELAY AT 60 MILES PER HOUR, BY HOUR OF DAY, 2011-2012



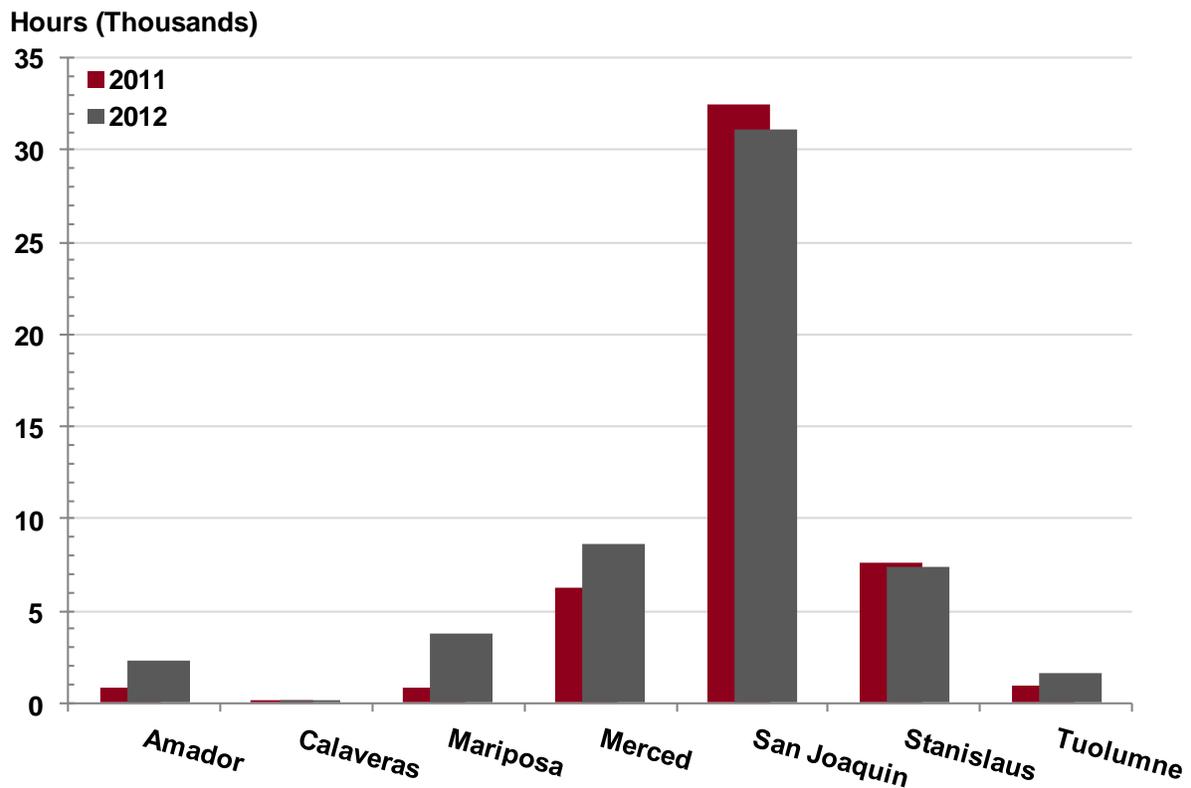
4.4. Total Vehicle Hours of Delay by County

County with Largest Delay, 60 mph:	San Joaquin, 3.1 million hours, 3.9% decrease over 2011 VHD, 57% of District total VHD
County with 2nd Largest Delay, 60 mph:	Merced, 865,727 hours, 37.8% increase over 2011 VHD, 16% of District total VHD
County with Largest Increase in Delay, 60 mph:	Mariposa, 291,444 hours, 344.7% increase over 2011
County with Largest Decrease in Delay, 60 mph:	San Joaquin, -127,274 hours, 3.9% decrease over 2011

Delay at 60 miles per hour

FIGURE 11

TOTAL ANNUAL VEHICLE HOURS OF DELAY AT 60 MILES PER HOUR, BY COUNTY, 2011-2012



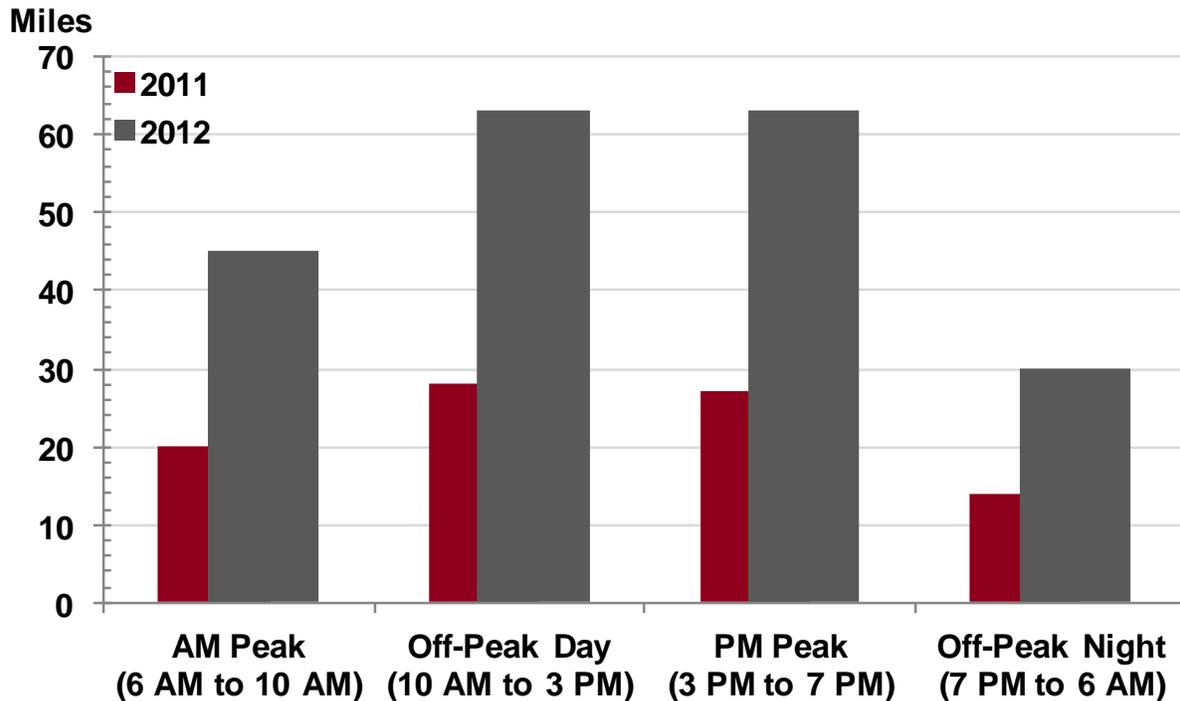
4.5. Lost Productivity

AM Peak: 45 miles, 130.3% increase over 2011
Off-Peak Day: 63 miles, 122.4% increase over 2011
PM Peak: 63 miles, 131.3% increase over 2011
Off-Peak Night: 30 miles, 114.0% increase over 2011

Lost Lane Miles at 35 miles per hour

FIGURE 12

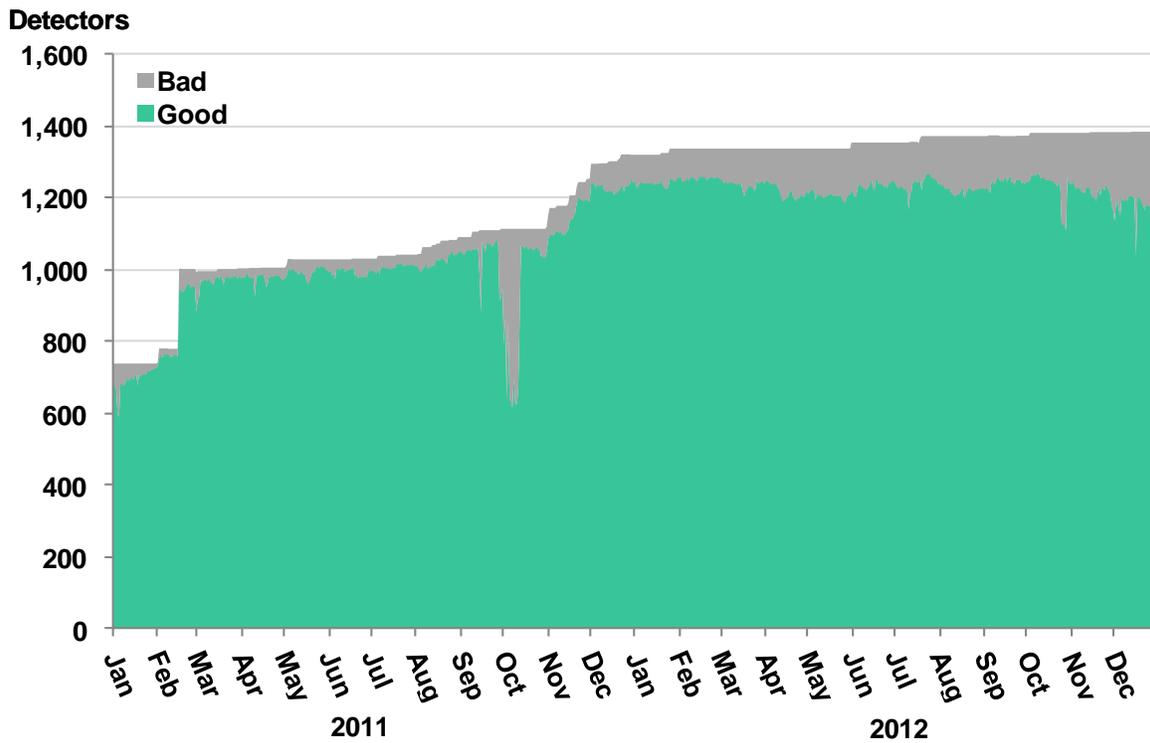
AVERAGE NON-HOLIDAY WEEKDAY EQUIVALENT LOST LANE MILES



5. DETECTOR HEALTH AND DATA QUALITY

Directional Mainline Miles: 2,653 miles
Directional Mainline Miles with Detection: 764 miles
Number of Detectors at End of 2012: 1,385, 5% increase over 2011
Average Percentage of Good and Bad Detection: 90% good, 24.7% increase over 2011;
 10% bad, 122.6% increase over 2011
**Number of Days Reporting less Than
 50% Working Detection:** 0

Figure 13
DETECTOR HEALTH BY DAY, 2011-2012



6. FREEWAY CONGESTION AND BOTTLENECK LOCATIONS

6.1. Congestion by Freeway

Congestion Contributed by Top Congested Freeways: 4,227,057 hours,
77% of total VHD in 2012

Table 3. TOP CONGESTED FREEWAYS, 2011-2012

Route	County	Vehicle Hours of Delay at 60 mph		Difference (2012 - 2011)		Rank	
		2011	2012	Absolute	Percent	2011	2012
SR-99	San Joaquin	1,332,827	990,453	-342,374	-26%	1	1
SR-99	Stanislaus	617,949	556,890	-61,059	-10%	2	2
I-5	San Joaquin	506,570	525,340	18,770	4%	3	3
SR-4	San Joaquin	310,486	407,196	96,710	31%	6	4
I-205	San Joaquin	381,296	393,190	11,894	3%	5	5
SR-140	Merced	142,241	311,840	169,599	119%	10	6
SR-120	San Joaquin	395,991	305,709	-90,282	-23%	4	7
SR-12	San Joaquin	193,893	255,558	61,665	32%	8	8
SR-99	Merced	262,609	249,668	-12,941	-5%	7	9
SR-152	Merced	143,636	231,214	87,578	61%	9	10
TOTALS		4,287,498	4,227,057	-60,441	-1.4%		

The following District 10 projects are currently being constructed or are scheduled for construction effective December 2015. These current and future (planned) projects will relieve congestion in District 10:

MERCED COUNTY

MER 99 Plainsburg Road Freeway; EA 10-41580

Convert from a four lane expressway to six lane freeway on an eight lane right of way
Approve construction contract date – 07/27/2012 End project – 12/30/2016

MER 99 Mission Avenue Interchange / Freeway; EA 10-36311

Convert from four lane expressway to six lane freeway on an eight lane right of way
Approve construction contract date – 04/07/2008 End project – 03/15/2016

MER 99 Atwater Freeway; EA 10-41481

Convert from four lane expressway to six lane freeway on an eight lane right of way
Approve construction contract date – 11/28/2005 End project – 06/30/2017

MER 99 Livingston Freeway Stage 2; EA 10-3169E

Convert from four lane expressway to six lane freeway on an eight 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 two to three 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 two to three lanes
Approve construction contract date – 01/19/2019 End project – 10/01/2021

MER 152 – Los Banos Bypass Segment I; EA 10-41911

Convert four lane expressway to six 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

I-5 North Stockton Widening and HOV Lanes; EA 10-0G470

Widen bridges and freeway lanes, HOV lane
Approve construction contract date – 6/15/2011 End project – 8/29/2016

SJ 99 – Manteca Widening Mainline Phase 1; EA 10-0E611

Widen existing freeway with HMA

Approve construction contract date – 4/19/2012 End project – 12/16/2015

SJ 99 – South Stockton Widening; EA 10-3A100

Widen existing freeway from four to six 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

STANISLAUS COUNTY

STA 99 – Pelandale Interchange; EA 10-47210

Modify existing interchange

Approve construction contract date – 4/15/2014 End project – 12/1/2018

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 PSR/PDS; PA&ED scheduled for mid-2016 End project – Estimated to be mid 2020

6.2. Bottleneck Locations

Total Delay, All AM Bottlenecks: 49,906 hours
Top Bottleneck Delay, AM: 49,906 hours
Percentage Top Bottleneck Delay of Total Bottleneck Delay, AM: 100%

Table 4 (A). TOP BOTTLENECKS, AM PEAK PERIOD

Rank	County	City	Freeway	CA Postmile	Approximate Location	Average Extent (miles)	Total Delay (hours)	Average Daily Delay (hours)	Average Duration (hours)	Percent of Days Active
1	San Joaquin	Tracy	I205-W	0.761	West of Mountain House Parkway Overcrossing	2.29	36,156	233	1.2	62%
2	San Joaquin	Tracy	I205-W	R3.332	West of 11th Street Overcrossing	2.35	13,750	120	0.7	46%

Total Delay, All PM Bottlenecks: 8,374 hours
Top Bottleneck Delay, PM: 8,374 hours
Percentage Top Bottleneck Delay of Total Bottleneck Delay, PM: 100%

Table 4 (B). TOP BOTTLENECKS, PM PEAK PERIOD

Rank	County	City	Freeway	CA Postmile	Approximate Location	Average Extent (miles)	Total Delay (hours)	Average Daily Delay (hours)	Average Duration (hours)	Percent of Days Active
1	San Joaquin	Tracy	I205-E	R8.51	MacArthur Drive	1.04	8,374	125	1.4	27%

FIGURE 14 (A)
BOTTLENECKS AND CONGESTED SEGMENTS, AM PEAK PERIOD

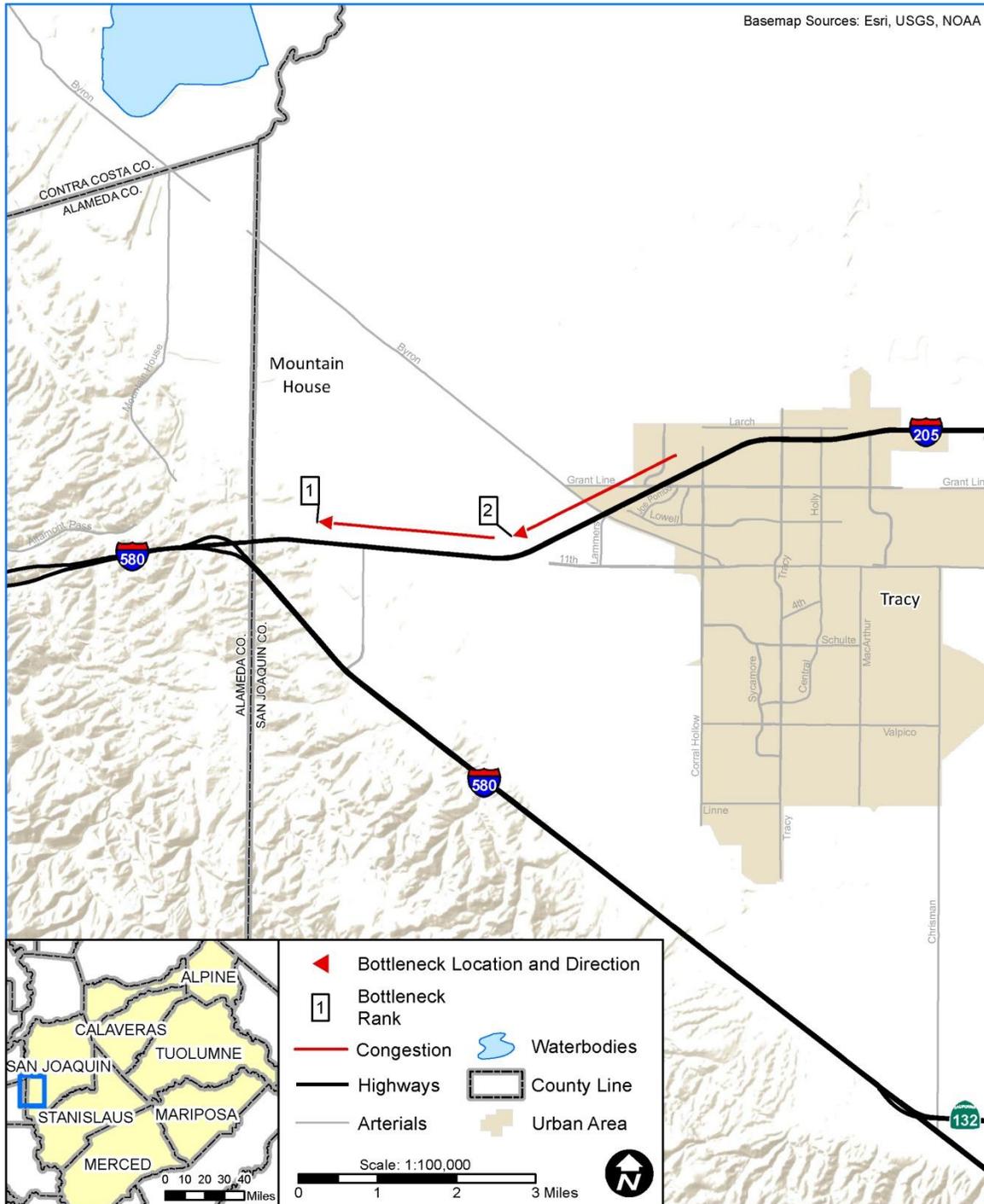


FIGURE 14 (B)
BOTTLENECKS AND CONGESTED SEGMENTS, PM PEAK PERIOD

