

District 08 Mobility Performance

2017 First Quarter

DEPARTMENT OF TRANSPORTATION

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District 08 Mobility Performance Report

2017 First Quarter

EXECUTIVE SUMMARY

Overview

Caltrans District 8 contains two counties located in southern California: San Bernardino and Riverside Counties. Both counties are part of the Inland Empire, with Riverside County has a population of almost 2.3 million residents and San Bernardino County with 2.1 million residents. Although these are urban counties, they do contain a large amount of sparsely populated National Forest and National Recreation Area land.

The Mobility Performance quarterly analysis compares information with over a year ago and over last quarter in the following performance measures:

- Vehicle Miles of Travel (VMT))
- Vehicle Hours of Delay (VHD), Bottleneck Locations
- 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

In the first quarter of 2017, total delay equaled 1.6 million Vehicle Hours of Delay (VHD) at the 35 mph speed threshold, and 5.6 million VHD at the 60 mph threshold. The average weekday delay experienced in this quarter was approximately 23 thousand VHD at 35 mph, and 78 thousand VHD at 60 mph. The Vehicle Miles of Travel (VMT) equaled 7.2 billion miles for this quarter. The total delay at 35 mph is 771,721 for Riverside County and 849,800 for San Bernardino County. The total delay at 60 mph is 2,625,586 for Riverside County and 2,949,613 for San Bernardino County.

PROJECT STATUS

The Following District 8 projects are currently being constructed or are scheduled for construction for 2017. These current and future (planned) projects will relieve congestion in District 8:

RIVERSIDE COUNTY

RIV 215; INSTALL AND UPGRADE TMS ELEMENTS; EA 0G780

Install new Fiber Optic infrastructure on Rte 215 from PM 8.40/38.80 and upgrade newly installed wireless vehicle detection stations. Connect all the existing TMS elements to the newly installed Fiber Optic infrastructure.

Approve Construction Contract Date- 3/30/2016

RIV 91; CIP; EA 0F540

Construct 1 MF lane & 2 Toll Express lane each direction on RTE 91 from PM 0.00/11.55. Project in Construction Express Lanes scheduled to be opened in January 2017.

Approve Construction Contract Date- 5/09/2013

RIV 15; EA 1E300

Install Ramp Metering System at both NB & SB Entrance Ramps at Temescal Canyon RD to Weirick RD on RTE 15 from PM 33.10/35.80.

Approve Construction Contract Date- 6/15/2016

RIV 60; EA 1C640

Replace Wireless Communication System with Fiber Optic Infrastructure & connect it to the existing components on Rte 60 from PM 0.00/12.20.

Approve Construction Contract Date- 6/23/2017

SAN BERNARDINO COUNTY

SBD 15; I-15/215 DEVORE INTERCHANGE IMPROVEMENT; EA 0K710

I-15/I-215 Devore Interchange Improvement.

Approve Construction Contract Date- 11/26/2012 & CCA-06/12/2017

SBD 10; REPLACE RANDOM SLABS ON MAINLINE & CONNECTORS; EA 0Q760

Replace random slabs on Mainline & Connectors. Also upgrade all the detection TMS elements on Rte 10 from PM 0.00/30.90

Approve Construction Contract Date- 01/15/15

SBD 15; RECONSTRUCT EXISTING “D” STREET & STODDARD WELLS RD IC ; EA 3555V

Reconstruct existing “D”, “E” ST, & Stoddard Wells RD IC, Widen Victorville separation overhead. PM 42.50/ 46.00

Approve Construction Contract Date- 11/05/15

SBD 210; INSTALL FIBER OPTIC COMMUNICATION (FOC), CLOSED CIRCUIT TELEVISION CAMERAS (CCTV) AND CHANGEABLE MESSAGE SIGN (CMS); EA 0E551

Install Fiber Optic Communication (FOC), Closed Circuit Television (CCTV) and Changeable Message Sign (CMS) PM 21.80/ 27.30

Approve Construction Contract Date- 01/11/17

Top Ten Bottleneck AM Period								
Rank	County	Freeway	CA Postmile	Approximate Location	Average Extent (miles)	Total Delay (hours)	Total Duration (hours)	Period
1	Riverside	I215-N	40.93	MARTIN LUTHER KING	2.31	41115.5	201.42	AM
2	Riverside	I15-N	45.93	.25 N/O 6th ST.	2.53	26239.4	102.42	AM
3	Riverside	I215-S	44.91	Center St	3.05	21835.7	91.42	AM
4	Riverside	I15-N	52.27	PHILADELPHIA UC	0.80	15829.4	141.50	AM
5	San Bernardino	I15-S	0.97	JURUPA	1.51	14791.6	82.75	AM
6	Riverside	SR71-S	2.50	S/O PRADO DAM RD	1.43	11818.6	225.67	AM
7	Riverside	SR91-W	4.72	Smith Ave	0.83	11681.6	82.08	AM
8	Riverside	SR91-W	R3.688	SERFAS CLUB	0.81	11368.4	128.92	AM

Top Ten Bottleneck PM Period								
Rank	County	Freeway	CA Postmile	Approximate Location	Average Extent (miles)	Total Delay (hours)	Total Duration (hours)	Period
1	Riverside	I15-N	3.20	4TH ST NB ONR	1.35	49381.5	208.58	PM
2	Riverside	SR60-E	16.60	PERRIS EB ONR	1.04	42238	228.83	PM
3	San Bernardino	I15-S	0.97	JURUPA	1.67	37502.2	151.58	PM
4	Riverside	I215-S	R32.5	OLEANDER AVE	3.80	36637.7	154.42	PM
5	San Bernardino	I210-E	8.00	E/B MILLIKEN ONR	3.23	28521.2	124.17	PM
6	San Bernardino	I10-E	25.40	WATERMAN AVE	1.90	26034	110.67	PM
7	Riverside	SR60-E	14.51	PIGEON PASS	1.87	25587.9	184.67	PM
8	San Bernardino	I210-E	3.69	CAMPUS EB ON	1.23	24476.8	135.17	PM
9	Riverside	SR91-E	R3.054	SERFAS CLUB RD	1.00	23996.7	211.50	PM
10	San Bernardino	I210-E	2.00	.4 M E/O MOUNTAIN	1.07	21616.5	147.42	PM

Quarterly Mobility Statistics

Measure	Graph	Percentage Change									
Vehicle Miles of Travel (VMT)	<p>Miles (Billions)</p> <table><tr><th>Period</th><th>VMT (Billions)</th></tr><tr><td>2016 Q1</td><td>6.9</td></tr><tr><td>2016 Q4</td><td>7.2</td></tr><tr><td>2017 Q1</td><td>7.2</td></tr></table>	Period	VMT (Billions)	2016 Q1	6.9	2016 Q4	7.2	2017 Q1	7.2	Over one year ago	Over last quarter
		Period	VMT (Billions)								
2016 Q1	6.9										
2016 Q4	7.2										
2017 Q1	7.2										
		3.4% 	-7.4% 								
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Millions)</p> <table><tr><th>Period</th><th>VHD (Millions)</th></tr><tr><td>2016 Q1</td><td>1.7</td></tr><tr><td>2016 Q4</td><td>2.0</td></tr><tr><td>2017 Q1</td><td>1.6</td></tr></table>	Period	VHD (Millions)	2016 Q1	1.7	2016 Q4	2.0	2017 Q1	1.6	Over one year ago	Over last quarter
		Period	VHD (Millions)								
2016 Q1	1.7										
2016 Q4	2.0										
2017 Q1	1.6										
		-5.1% 	-18.2% 								
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Thousands)</p> <table><tr><th>Period</th><th>VHD (Thousands)</th></tr><tr><td>2016 Q1</td><td>23</td></tr><tr><td>2016 Q4</td><td>27</td></tr><tr><td>2017 Q1</td><td>23</td></tr></table>	Period	VHD (Thousands)	2016 Q1	23	2016 Q4	27	2017 Q1	23	Over one year ago	Over last quarter
		Period	VHD (Thousands)								
2016 Q1	23										
2016 Q4	27										
2017 Q1	23										
		0% 	-15.2% 								
Total Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Millions)</p> <table><tr><th>Period</th><th>VHD (Millions)</th></tr><tr><td>2016 Q1</td><td>5.5</td></tr><tr><td>2016 Q4</td><td>6.3</td></tr><tr><td>2017 Q1</td><td>5.6</td></tr></table>	Period	VHD (Millions)	2016 Q1	5.5	2016 Q4	6.3	2017 Q1	5.6	Over one year ago	Over last quarter
		Period	VHD (Millions)								
2016 Q1	5.5										
2016 Q4	6.3										
2017 Q1	5.6										
		1.3% 	-11.5% 								
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Thousands)</p> <table><tr><th>Period</th><th>VHD (Thousands)</th></tr><tr><td>2016 Q1</td><td>74</td></tr><tr><td>2016 Q4</td><td>86</td></tr><tr><td>2017 Q1</td><td>78</td></tr></table>	Period	VHD (Thousands)	2016 Q1	74	2016 Q4	86	2017 Q1	78	Over one year ago	Over last quarter
		Period	VHD (Thousands)								
2016 Q1	74										
2016 Q4	86										
2017 Q1	78										
		5.4% 	-9.2% 								

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
		Saturday -15.9%	Monday -18.7%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Wednesday 11.9%	-
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago	Largest Magnitude Weekday Decrease over last quarter
		6 AM -23.9%	5 PM -17.9%
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		5 PM 10.6%	10 PM 33.8%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago	Largest Magnitude Saturday Decrease over last quarter
		4 PM -40.5%	5 PM -47.6%
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		10 AM 23.7%	10 AM 57.6%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/Holidays		Largest Magnitude Sun/Holiday Decrease over one year ago	Largest Magnitude Sun/Holiday Decrease over last quarter
		7 PM -64.2%	5 PM -52%
		Largest Magnitude Sun/Holiday Increase over one year ago	Largest Magnitude Sun/Holiday Increase over last quarter
		4 PM 21%	12 AM 65.3%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph	<p>Hours (Millions)</p> <p>■ 2016 Q1 ■ 2016 Q4 ■ 2017 Q1</p> <p>Riverside San Bernardino</p>	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Riverside -15.6%	San Bernardino -18.2%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		San Bernardino 7%	-
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph	<p>Miles</p> <p>■ 2016 Q1 ■ 2016 Q4 ■ 2017 Q1</p> <p>AM Peak (6 AM to 10 AM) Off-Peak Day (10 AM to 3 PM) PM Peak (3 PM to 7 PM) Off-Peak Night (7 PM to 6 AM)</p>	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Off-Peak Night -23.8%	PM Peak -18%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		PM Peak 8.3%	-
Average Number of Good and Bad Detectors	<p>Number of Detectors</p> <p>■ Average of Good ■ Average of Bad</p> <p>2016 Q1 2016 Q4 2017 Q1</p>	Change in Good over one year ago	Change in Good over last quarter
		-7%	-4%
		Change in Bad over one year ago	Change in Bad over last quarter
		9%	6%

Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2017 Q1-2016 Q1		Difference 2017 Q1-2016 Q4		Rank		
		2016 Q1	2016 Q4	2017 Q1	Absolute	Percentage	Absolute	Percentage	2016 Q1	2016 Q4	2017 Q1
I215	Riverside	192728.7	272371.6	278233.5	85504.8	44%	5,862	2%	5	4	1
I10	San Bernardino	218529.7	291819.5	258424.1	39894.4	18%	(33,395)	-11%	3	3	2
I15	San Bernardino	292131	326717	251875.4	-40456.6	-14%	(75,042)	-23%	2	1	3
SR91	Riverside	413064.1	294210.7	207311.8	-205752.3	-50%	(80,899)	-30%	1	2	4
I15	Riverside	211680.1	213823.8	155425	-56255.1	-27%	(58,399)	-27%	4	5	5
I210	San Bernardino	124074.2	174932.4	144766.3	20692.1	17%	(30,166)	-17%	6	6	6
SR60	Riverside	63852.6	104978.9	106985	43132.4	68%	2,006	2%	8	8	7
SR60	San Bernardino	85022.1	133065.1	92677.3	7655.2	9%	(40,388)	-30%	7	7	8
I215	San Bernardino	40221.4	73762.4	64238	24016.6	60%	(9,524)	-13%	9	9	9
SR71	San Bernardino	34355	38026	38017.3	3662.3	11%	(9)	0%	10	10	10
SR71	Riverside	27475.5	32375.8	12020.3	-15455.2	-56%	(20,356)	-63%	11	11	11
I10	Riverside	6004.9	25937.2	11747	5742.1	96%	(14,190)	-55%	12	12	12
SR259	San Bernardino	74.1	13.5	1.4	-72.7	-98%	(12)	-90%	13	13	13
TOTALS		1,709,213	1,982,034	1,621,522	-87,691	-5.1%	-360,512	-18.2%			