

District 12 Mobility Performance Report

2018 4th Quarter

DEPARTMENT OF TRANSPORTATION

January 16, 2019
District 12 TMC

DISTRICT 12 MOBILITY PERFORMANCE REPORT

2018 4th Quarter

EXECUTIVE SUMMARY

Overview

Caltrans District 12 (Orange County) is located in southern California and is neighbors with District 7 (Los Angeles), District 8 (San Bernardino), and District 11 (San Diego). As of July 2017 the total population in Orange County was 3,190,400. The jurisdictional boundaries of Orange County encompass a metropolitan area of 794 square miles, including 34 cities, and 17 state highway routes. The county has 1,059 lane miles of general purpose lanes and 226 lane miles of High-Occupancy Vehicle (HOV) lanes, which is one of California's largest HOV lane networks. Orange County is the third most populous county in California, the sixth-most populous in the United States, and more populous than twenty-one U.S. states. Its county seat is Santa Ana. It is the second most densely populated county in the state.

The Mobility Performance quarterly analysis compares information from the most recent quarter and the previous 4 quarters, involving the following performance measures:

- Vehicle Miles of Travel (VMT)
- Vehicle Hours of Delay (VHD)
- Lost Lane Miles (LLM)
- 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 uses congestion at two speed thresholds: delay from vehicles traveling below 35 MPH and delay from vehicles traveling below 60 mph. The 35 MPH limit

represents severe congestion while the 60 MPH limit represents light and heavy congestion. These thresholds/limits are set by Caltrans and are based upon engineering experience and District input.

FINDINGS

In the fourth quarter, of 2018, total delay equaled to 2 million vehicle hours of delay (VHD) at the 35mph speed threshold and 5.9 million VHD at 60mph threshold. Compared to the third quarter, there was an 8.7 percent increase in 35mph VHD and 5.3 percent increase in 60mph VHD.

The average weekday VHD experienced in this quarter was approximately 28 thousand VHD at 35mph and 84 thousand VHD at 60mph. Compared to the third quarter, there was 14.6 percent increase in 35 mph VHD and 10.3 percent in 60mph VHD.

Top 10 Bottlenecks for the 4th Quarter of 2018

Abs PM	CA PM	# Days Active	Avg Extent (Miles)	Total Delay (veh-hrs)	Total Duration (mins)
13.51	13.74	59	3.854237	160408.8	15510
14.93	15.16	56	2.773214	29629.7	11240
12.892	13.122	56	2.3375	28419.7	14195
28.453	R10.08	55	2.794545	20815.2	10400
102.251	30	46	3.371739	20335.6	11455
6.57	6.8	57	1.329825	17538.4	6315
105.851	33.6	58	2.236207	16922.1	10600
103.051	30.8	56	0.675	16890.1	10660
15.492	15.722	56	2.442857	16311.7	11230
10.67	10.9	51	1.141176	15096.8	10210

Quarterly Mobility Statistics

2018 Q4 Quarterly Mobility Statistics District 12

Measure	Graph	Percentage Change									
Vehicle Miles of Travel (VMT)	Miles (Billions) <table><thead><tr><th>Quarter</th><th>VMT (Billions)</th></tr></thead><tbody><tr><td>2017 Q4</td><td>3.6</td></tr><tr><td>2018 Q3</td><td>3.5</td></tr><tr><td>2018 Q4</td><td>3.4</td></tr></tbody></table>	Quarter	VMT (Billions)	2017 Q4	3.6	2018 Q3	3.5	2018 Q4	3.4	Over one year ago	Over last quarter
		Quarter	VMT (Billions)								
2017 Q4	3.6										
2018 Q3	3.5										
2018 Q4	3.4										
		6.7% 	1.6% 								
Total Vehicle Hours of Delay (VHD) at 35 mph	Hours (Millions) <table><thead><tr><th>Quarter</th><th>VHD (Millions)</th></tr></thead><tbody><tr><td>2017 Q4</td><td>2.7</td></tr><tr><td>2018 Q3</td><td>1.8</td></tr><tr><td>2018 Q4</td><td>2</td></tr></tbody></table>	Quarter	VHD (Millions)	2017 Q4	2.7	2018 Q3	1.8	2018 Q4	2	Over one year ago	Over last quarter
		Quarter	VHD (Millions)								
2017 Q4	2.7										
2018 Q3	1.8										
2018 Q4	2										
		-26.4% 	8.7% 								
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	Hours (Thousands) <table><thead><tr><th>Quarter</th><th>VHD (Thousands)</th></tr></thead><tbody><tr><td>2017 Q4</td><td>39</td></tr><tr><td>2018 Q3</td><td>25</td></tr><tr><td>2018 Q4</td><td>28</td></tr></tbody></table>	Quarter	VHD (Thousands)	2017 Q4	39	2018 Q3	25	2018 Q4	28	Over one year ago	Over last quarter
		Quarter	VHD (Thousands)								
2017 Q4	39										
2018 Q3	25										
2018 Q4	28										
		-27.4% 	14.6% 								
Total Vehicle Hours of Delay (VHD) at 60 mph	Hours (Millions) <table><thead><tr><th>Quarter</th><th>VHD (Millions)</th></tr></thead><tbody><tr><td>2017 Q4</td><td>6.8</td></tr><tr><td>2018 Q3</td><td>5.6</td></tr><tr><td>2018 Q4</td><td>5.9</td></tr></tbody></table>	Quarter	VHD (Millions)	2017 Q4	6.8	2018 Q3	5.6	2018 Q4	5.9	Over one year ago	Over last quarter
		Quarter	VHD (Millions)								
2017 Q4	6.8										
2018 Q3	5.6										
2018 Q4	5.9										
		-12.6% 	5.3% 								
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	Hours (Thousands) <table><thead><tr><th>Quarter</th><th>VHD (Thousands)</th></tr></thead><tbody><tr><td>2017 Q4</td><td>97</td></tr><tr><td>2018 Q3</td><td>76</td></tr><tr><td>2018 Q4</td><td>84</td></tr></tbody></table>	Quarter	VHD (Thousands)	2017 Q4	97	2018 Q3	76	2018 Q4	84	Over one year ago	Over last quarter
		Quarter	VHD (Thousands)								
2017 Q4	97										
2018 Q3	76										
2018 Q4	84										
		-13.3% 	10.3% 								

2018 Q4
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Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph	Hours (Thousands) 2017 Q4 2018 Q3 2018 Q4 Mon Tue Wed Thu Fri Sat Sun/Hol	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Wednesday -20% ↓	Saturday -9.7% ↓
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays	Hours (Thousands) Weekday (2017 Q4) Weekday (2018 Q3) Weekday (2018 Q4) 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Hour of Day	Largest Magnitude Weekday Decrease over one year ago	Largest Magnitude Weekday Decrease over last quarter
		5 PM -21.8% ↓	1 PM -13.4% ↓
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays	Hours (Thousands) Saturday (2017 Q4) Saturday (2018 Q3) 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Hour of Day	Largest Magnitude Saturday Decrease over one year ago	Largest Magnitude Saturday Decrease over last quarter
		5 PM -20.9% ↓	11 AM -31.5% ↓
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/Holidays	Hours (Thousands) Sunday/Holiday (2017 Q4) Sunday/Holiday (2018 Q3) 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 Hour of Day	Largest Magnitude Sun./Holiday Decrease over one year ago	Largest Magnitude Sun./Holiday Decrease over last quarter
		4 PM -52.6% ↓	11 AM -45.5% ↓
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		10 AM 8.7% ↑	5 PM 104% ↑

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Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph	Hours (Millions) 2017 Q4 2018 Q3 2018 Q4 Orange	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Orange -26.4% ↓	-
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		-	Orange 8.7% ↑
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph	Miles 2017 Q4 2018 Q3 2018 Q4 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)	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		PM Peak -13.4% ↓	Off-Peak Day -11.9% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		-	PM Peak 12.6% ↑
Average Number of Good and Bad Detectors	Number of Detectors Average of Good Average of Bad 2017 Q4 2018 Q3 2018 Q4	Change in Good over one year ago	Change in Good over last quarter
		5% ↑	7% ↑
		Change in Bad over one year ago	Change in Bad over last quarter
		-14% ↓	-22% ↓

2018 Q4
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Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2018 Q4-2017 Q4		Difference 2018 Q4-2018 Q3		Rank		
		2017 Q4	2018 Q3	2018 Q4	Absolute	Percentage	Absolute	Percentage	2017 Q4	2018 Q3	2018 Q4
I405	Orange	731,993	596,244	611,078	-120,915	-16.5%	14,834	2.5%	1	1	1
I5	Orange	543,515	497,969	533,581	-9,934	-1.8%	35,613	7.2%	2	2	2
SR91	Orange	374,128	253,372	281,296	-92,832	-24.8%	27,923	11.0%	4	3	3
SR55	Orange	381,052	157,785	155,772	-225,281	-59.1%	-2,013	-1.3%	3	4	4
SR22	Orange	169,251	107,555	124,404	-44,847	-26.5%	16,849	15.7%	6	5	5
SR57	Orange	303,981	49,302	107,777	-196,205	-64.5%	58,475	118.6%	5	7	6
SR73	Orange	85,869	77,723	89,943	4,074	4.7%	12,220	15.7%	7	6	7
SR241	Orange	52,639	36,706	31,104	-21,535	-40.9%	-5,602	-15.3%	8	8	8
I605	Orange	30,944	17,349	20,980	-9,964	-32.2%	3,632	20.9%	9	10	9
SR133	Orange	7,798	17,598	16,935	9,137	117.2%	-663	-3.8%	10	9	10
SR74	Orange	0	1,498	890	890		-609	-40.6%		12	11
SR142	Orange	0	3,186	705	705		-2,481	-77.9%		11	12
SR261	Orange	1,509	290	37	-1,472	-97.5%	-253	-87.1%	11	13	13
SR1	Orange	51	0	32	-19	-37.7%	32		12		14
SR39	Orange	0	0	0	0	-100.0%	0		13		