

# District 12 Mobility Performance Report

2021 1<sup>st</sup> Quarter

**DEPARTMENT OF TRANSPORTATION**

April 29, 2021

District 12 Traffic Operations Northwest

## DISTRICT 12 MOBILITY PERFORMANCE REPORT

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2021 1<sup>st</sup> 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 1<sup>st</sup> quarter of 2021, total delay equaled to 0.73 million vehicle hours of delay (VHD) at the 35 MPH speed threshold and 3.08 million VHD at 60 MPH threshold. Compared to the previous quarter, there was a 14 percent increase in 35 MPH VHD and 7.8 percent increase in 60 MPH VHD.

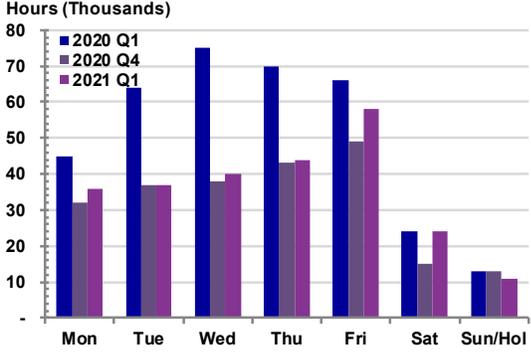
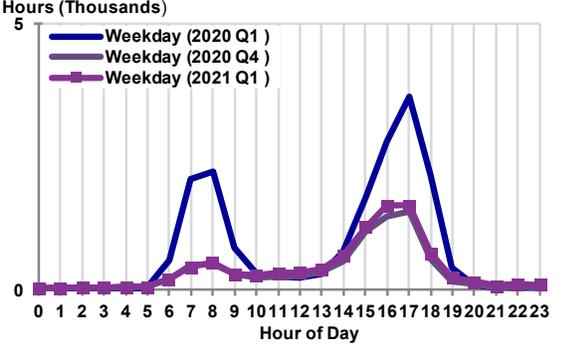
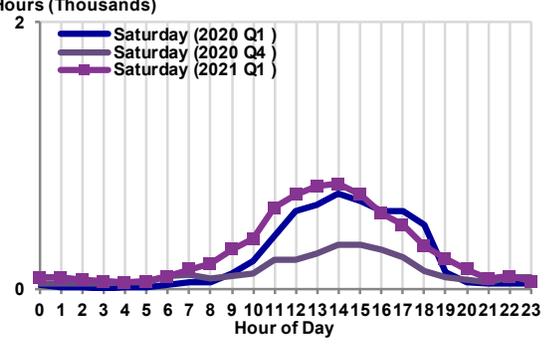
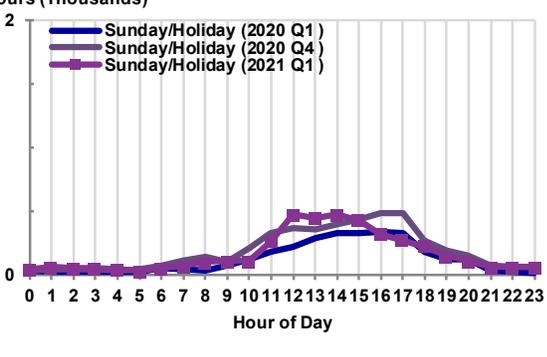
The average weekday VHD experienced in this quarter was approximately 9 thousands VHD at 35 MPH and 43 thousands VHD at 60 MPH. Compared to the previous quarter, there was 11 percent increase in 35 MPH VHD and 8.2 percent increase in 60 mph VHD.

### Top 10 Bottlenecks for the 1<sup>st</sup> Quarter of 2021

Co	Shift	Fwy	Dir	Abs PM	CA PM	Latitude	Longitude	# Days Active	Avg Extent (Miles)	Total Delay (veh-hrs)	Total Duration (mins)
ORA	PM	I405	N	13.51	13.74	33.70	-117.95	38	2.52	27,156.80	4,580.00
ORA	PM	I5	N	100.35	28.1	33.72	-117.80	41	3.88	19,176.90	7,430.00
ORA	PM	I5	S	91.53	19.33	33.62	-117.71	36	1.06	12,965.20	4,585.00
ORA	PM	SR91	E	32.99	R14.62	33.87	-117.74	36	1.79	12,884.70	5,110.00
ORA	PM	I405	N	11.37	11.6	33.69	-117.92	42	0.40	11,958.60	6,405.00
ORA	PM	SR91	E	28.45	R10.08	33.85	-117.81	37	2.55	11,742.60	4,700.00
ORA	AM	SR91	W	36.85	R18.435	33.87	-117.68	42	0.80	10,008.70	8,000.00
ORA	PM	I405	N	16.53	16.76	33.73	-117.99	42	0.70	9,557.20	7,915.00
ORA	AM	I5	S	105.19	33	33.77	-117.87	42	0.60	8,918.40	4,950.00
ORA	PM	SR91	E	34.14	R15.793	33.87	-117.72	36	2.54	8,401.30	3,300.00

## 2021 Q1 Quarterly Mobility Statistics

Measure	Graph	Percentage Change									
Vehicle Miles of Travel (VMT)	<p>Miles (Billions)</p> <table border="1"> <tr><th>Period</th><th>Value (Billions)</th></tr> <tr><td>2020 Q1</td><td>2.97</td></tr> <tr><td>2020 Q4</td><td>2.84</td></tr> <tr><td>2021 Q1</td><td>2.82</td></tr> </table>	Period	Value (Billions)	2020 Q1	2.97	2020 Q4	2.84	2021 Q1	2.82	Over one year ago	Over last quarter
		Period	Value (Billions)								
2020 Q1	2.97										
2020 Q4	2.84										
2021 Q1	2.82										
		-4.9% ↓	-0.5% ↓								
Total Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Period</th><th>Value (Millions)</th></tr> <tr><td>2020 Q1</td><td>1.3</td></tr> <tr><td>2020 Q4</td><td>0.6</td></tr> <tr><td>2021 Q1</td><td>0.7</td></tr> </table>	Period	Value (Millions)	2020 Q1	1.3	2020 Q4	0.6	2021 Q1	0.7	Over one year ago	Over last quarter
		Period	Value (Millions)								
2020 Q1	1.3										
2020 Q4	0.6										
2021 Q1	0.7										
		-42.1% ↓	14.1% ↑								
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Period</th><th>Value (Thousands)</th></tr> <tr><td>2020 Q1</td><td>18</td></tr> <tr><td>2020 Q4</td><td>8</td></tr> <tr><td>2021 Q1</td><td>9</td></tr> </table>	Period	Value (Thousands)	2020 Q1	18	2020 Q4	8	2021 Q1	9	Over one year ago	Over last quarter
		Period	Value (Thousands)								
2020 Q1	18										
2020 Q4	8										
2021 Q1	9										
		-48.5% ↓	11% ↑								
Total Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Millions)</p> <table border="1"> <tr><th>Period</th><th>Value (Millions)</th></tr> <tr><td>2020 Q1</td><td>4.5</td></tr> <tr><td>2020 Q4</td><td>2.9</td></tr> <tr><td>2021 Q1</td><td>3.1</td></tr> </table>	Period	Value (Millions)	2020 Q1	4.5	2020 Q4	2.9	2021 Q1	3.1	Over one year ago	Over last quarter
		Period	Value (Millions)								
2020 Q1	4.5										
2020 Q4	2.9										
2021 Q1	3.1										
		-31.9% ↓	7.8% ↑								
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<p>Hours (Thousands)</p> <table border="1"> <tr><th>Period</th><th>Value (Thousands)</th></tr> <tr><td>2020 Q1</td><td>65</td></tr> <tr><td>2020 Q4</td><td>40</td></tr> <tr><td>2021 Q1</td><td>43</td></tr> </table>	Period	Value (Thousands)	2020 Q1	65	2020 Q4	40	2021 Q1	43	Over one year ago	Over last quarter
		Period	Value (Thousands)								
2020 Q1	65										
2020 Q4	40										
2021 Q1	43										
		-33.5% ↓	8.2% ↑								

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
		Wednesday -46.3% 	Sun/Hol -15.8% 
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		-	Friday 18.7% 
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
		5 PM -56.1% 	7 AM -7.6% 
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		12 PM 49.8% 	4 PM 13.2% 
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
		6 PM -34.2% 	11 PM -34.9% 
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		11 AM 51.6% 	1 PM 185% 
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
		5 PM -17.2% 	5 PM -43.1% 
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		12 PM 107.1% 	12 PM 26.5% 

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph	<p>Hours (Millions)</p> <p>■ 2020 Q1 ■ 2020 Q4 ■ 2021 Q1</p> <p>Orange</p>	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Orange -42.1% ↓	-
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		-	Orange 14.1% ↑
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph	<p>Miles</p> <p>■ 2020 Q1 ■ 2020 Q4 ■ 2021 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
		PM Peak -47.7% ↓	PM Peak -0.2% ↓
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Off-Peak Night 85% ↑	Off-Peak Day 17.1% ↑
Average Number of Good and Bad Detectors	<p>Number of Detectors</p> <p>■ Average of Good ■ Average of Bad</p> <p>2020 Q1 2020 Q4 2021 Q1</p>	Change in Good over one year ago	Change in Good over last quarter
		-49% ↓	-25% ↓
		Change in Bad over one year ago	Change in Bad over last quarter
		-22% ↓	-14% ↓

**Congestion by Route**

Route	County	Vehicle Hours of Delay at 35 mph			Difference 2021 Q1-2020 Q1		Difference 2021 Q1-2020 Q4		Rank		
		2020 Q1	2020 Q4	2021 Q1	Absolute	Percentage	Absolute	Percentage	2020 Q1	2020 Q4	2021 Q1
		I5	Orange	337,866	173,883	229,130	-108,735	-32.2%	55,247	31.8%	1
SR91	Orange	222,665	188,132	219,653	-3,012	-1.4%	31,521	16.8%	3	1	2
I405	Orange	282,330	93,118	98,267	-184,063	-65.2%	5,149	5.5%	2	3	3
SR57	Orange	98,455	53,220	71,223	-27,233	-27.7%	18,002	33.8%	5	5	4
SR55	Orange	138,704	57,826	38,849	-99,855	-72.0%	-18,977	-32.8%	4	4	5
SR22	Orange	72,478	40,148	33,698	-38,780	-53.5%	-6,450	-16.1%	6	6	6
SR73	Orange	54,077	20,844	20,302	-33,775	-62.5%	-542	-2.6%	7	7	7
SR241	Orange	27,753	5,696	7,213	-20,540	-74.0%	1,517	26.6%	8	8	8
I605	Orange	6,001	1,648	3,057	-2,943	-49.1%	1,409	85.5%	9	9	9
SR133	Orange	4,659	957	3,031	-1,628	-34.9%	2,074	216.7%	11	10	10
SR142	Orange	3,623	832	989	-2,634	-72.7%	156	18.8%	12	11	11
SR74	Orange	5,523	25	629	-4,895	-88.6%	604	2454.9%	10	12	12
SR261	Orange	786	9	63	-723	-92.0%	55	644.7%	13	13	13
SR1	Orange	0	0	0	0		0				
<b>TOTALS</b>		<b>1,254,920</b>	<b>636,337</b>	<b>726,103</b>	<b>-528,817</b>	<b>-42.1%</b>	<b>89,766</b>	<b>14.1%</b>			