

District 04 Mobility Performance Report

2016 Second Quarter

DEPARTMENT OF TRANSPORTATION

July 20, 2016
District 4-Office of Highway Operations

District 04 Mobility Performance Report

2016 Second Quarter

EXECUTIVE SUMMARY

Overview

Caltrans District 4 is comprised of nine counties that border the San Francisco Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties. Although these are urban counties, they do contain a large amount of sparsely populated 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)
- 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 second quarter, total delay equaled 9.4 million vehicle hours of delay (VHD) at the 35 mph speed threshold, and 18.6 million VHD at the 60 mph threshold. Compared to the same quarter the year before, there was a 34.5% increase in 35 mph total quarterly delay and 26.9% increase in 60 mph total quarterly delay. This increase may be due to the recovering economy and also a 23% increase in good working detector that were able to capture more congestion.

The average weekday delay experienced in this quarter was approximately 122 thousand VHD at 35 mph, and 247 thousand VHD at 60 mph. Thursday was the most congested day of the week.

Alameda County with 3.3 million vehicle hours of total delay at 35 mph during the second quarter was the most congested county in the District. Santa Clara County with 2.1 million vehicle hours of total delay at 35 mph was second most congested county in the District.

Quarterly Mobility Statistics

| Measure | Graph | Percentage Change | | | | | | | | | |
|---|--|-------------------|-------------------|---------|------|---------|------|---------|------|-------|-------|
| | | Over one year ago | Over last quarter | | | | | | | | |
| Vehicle Miles of Travel (VMT) | <p>Miles (Billions)</p> <table border="1"> <tr><th>Quarter</th><th>Value</th></tr> <tr><td>2015 Q2</td><td>7.8</td></tr> <tr><td>2016 Q1</td><td>7.5</td></tr> <tr><td>2016 Q2</td><td>7.9</td></tr> </table> | Quarter | Value | 2015 Q2 | 7.8 | 2016 Q1 | 7.5 | 2016 Q2 | 7.9 | 1.2% | 5% |
| Quarter | Value | | | | | | | | | | |
| 2015 Q2 | 7.8 | | | | | | | | | | |
| 2016 Q1 | 7.5 | | | | | | | | | | |
| 2016 Q2 | 7.9 | | | | | | | | | | |
| Total Vehicle Hours of Delay (VHD) at 35 mph | <p>Hours (Millions)</p> <table border="1"> <tr><th>Quarter</th><th>Value</th></tr> <tr><td>2015 Q2</td><td>7</td></tr> <tr><td>2016 Q1</td><td>6.9</td></tr> <tr><td>2016 Q2</td><td>9.4</td></tr> </table> | Quarter | Value | 2015 Q2 | 7 | 2016 Q1 | 6.9 | 2016 Q2 | 9.4 | 34.5% | 36.5% |
| Quarter | Value | | | | | | | | | | |
| 2015 Q2 | 7 | | | | | | | | | | |
| 2016 Q1 | 6.9 | | | | | | | | | | |
| 2016 Q2 | 9.4 | | | | | | | | | | |
| Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph | <p>Hours (Thousands)</p> <table border="1"> <tr><th>Quarter</th><th>Value</th></tr> <tr><td>2015 Q2</td><td>94</td></tr> <tr><td>2016 Q1</td><td>99</td></tr> <tr><td>2016 Q2</td><td>122</td></tr> </table> | Quarter | Value | 2015 Q2 | 94 | 2016 Q1 | 99 | 2016 Q2 | 122 | 30% | 23.9% |
| Quarter | Value | | | | | | | | | | |
| 2015 Q2 | 94 | | | | | | | | | | |
| 2016 Q1 | 99 | | | | | | | | | | |
| 2016 Q2 | 122 | | | | | | | | | | |
| Total Vehicle Hours of Delay (VHD) at 60 mph | <p>Hours (Millions)</p> <table border="1"> <tr><th>Quarter</th><th>Value</th></tr> <tr><td>2015 Q2</td><td>14.6</td></tr> <tr><td>2016 Q1</td><td>14.3</td></tr> <tr><td>2016 Q2</td><td>18.6</td></tr> </table> | Quarter | Value | 2015 Q2 | 14.6 | 2016 Q1 | 14.3 | 2016 Q2 | 18.6 | 26.9% | 30% |
| Quarter | Value | | | | | | | | | | |
| 2015 Q2 | 14.6 | | | | | | | | | | |
| 2016 Q1 | 14.3 | | | | | | | | | | |
| 2016 Q2 | 18.6 | | | | | | | | | | |
| Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph | <p>Hours (Thousands)</p> <table border="1"> <tr><th>Quarter</th><th>Value</th></tr> <tr><td>2015 Q2</td><td>199</td></tr> <tr><td>2016 Q1</td><td>206</td></tr> <tr><td>2016 Q2</td><td>247</td></tr> </table> | Quarter | Value | 2015 Q2 | 199 | 2016 Q1 | 206 | 2016 Q2 | 247 | 24.1% | 20.1% |
| Quarter | Value | | | | | | | | | | |
| 2015 Q2 | 199 | | | | | | | | | | |
| 2016 Q1 | 206 | | | | | | | | | | |
| 2016 Q2 | 247 | | | | | | | | | | |

| 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 |
| | | - | - |
| | | Largest Magnitude Increase over one year ago | Largest Magnitude Increase over last quarter |
| | | Monday 34.9% | Wednesday 28.9% |
| 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 |
| | | 11 PM -13% | 7 PM -7% |
| | | Largest Magnitude Weekday Increase over one year ago | Largest Magnitude Weekday Increase over last quarter |
| | | 5 PM 24.6% | 5 PM 25.9% |
| 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 |
| | | 7 AM -12.4% | - |
| | | Largest Magnitude Saturday Increase over one year ago | Largest Magnitude Saturday Increase over last quarter |
| | | 12 PM 36.9% | 12 PM 128% |
| 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 |
| | | 9 PM -30.6% | 8 AM -76.7% |
| | | Largest Magnitude Sun./Holiday Increase over one year ago | Largest Magnitude Sun./Holiday Increase over last quarter |
| | | 2 PM 124.9% | 1 PM 313.7% |

| Measure | Graph | Percentage Change | |
|---|-------|--|--|
| Total Vehicle Hours of Delay (VHD) by County at 35 mph | | Largest Magnitude Decrease over one year ago | Largest Magnitude Decrease over last quarter |
| | | Sonoma -2.2% | - |
| | | Largest Magnitude Increase over one year ago | Largest Magnitude Increase over last quarter |
| | | Santa Clara 52.2% | Alameda 34.7% |
| Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph | | Largest Magnitude Decrease over one year ago | Largest Magnitude Decrease over last quarter |
| | | - | AM Peak -0.9% |
| | | Largest Magnitude Increase over one year ago | Largest Magnitude Increase over last quarter |
| | | PM Peak 22.1% | PM Peak 17% |
| Average Number of Good and Bad Detectors | | Change in Good over one year ago | Change in Good over last quarter |
| | | 23% | 19% |
| | | Change in Bad over one year ago | Change in Bad over last quarter |
| | | -23% | -18% |

| Congestion by Route | | | | | | | | | | | |
|---------------------|---------------|----------------------------------|------------------|------------------|----------------------------|--------------|----------------------------|--------------|---------|---------|---------|
| Route | County | Vehicle Hours of Delay at 35 mph | | | Difference 2016 Q2-2015 Q2 | | Difference 2016 Q2-2016 Q1 | | Rank | | |
| | | 2015 Q2 | 2016 Q1 | 2016 Q2 | Absolute | Percentage | Absolute | Percentage | 2015 Q2 | 2016 Q1 | 2016 Q2 |
| I880 | Alameda | 760,792 | 836,262 | 1,096,852 | 336,060 | 44.2% | 260,590 | 31.2% | 2 | 1 | 1 |
| I80 | Alameda | 782,930 | 614,640 | 684,975 | -97,955 | -12.5% | 70,334 | 11.4% | 1 | 2 | 2 |
| US101 | Santa Clara | 451,132 | 444,425 | 682,465 | 231,333 | 51.3% | 238,040 | 53.6% | 4 | 4 | 3 |
| US101 | San Mateo | 545,193 | 450,280 | 562,682 | 17,489 | 3.2% | 112,402 | 25.0% | 3 | 3 | 4 |
| I580 | Alameda | 354,891 | 318,136 | 497,734 | 142,843 | 40.2% | 179,599 | 56.5% | 5 | 6 | 5 |
| SR85 | Santa Clara | 223,961 | 337,953 | 479,077 | 255,116 | 113.9% | 141,125 | 41.8% | 12 | 5 | 6 |
| SR4 | Contra Costa | 180,191 | 266,377 | 435,211 | 255,020 | 141.5% | 168,834 | 63.4% | 14 | 10 | 7 |
| I680 | Contra Costa | 301,115 | 303,521 | 348,675 | 47,560 | 15.8% | 45,153 | 14.9% | 7 | 8 | 8 |
| I680 | Alameda | 331,232 | 250,719 | 343,737 | 12,505 | 3.8% | 93,018 | 37.1% | 6 | 13 | 9 |
| I280 | Santa Clara | 238,540 | 285,548 | 339,187 | 100,647 | 42.2% | 53,639 | 18.8% | 10 | 9 | 10 |
| SR24 | Contra Costa | 167,285 | 317,917 | 329,278 | 161,993 | 96.8% | 11,361 | 3.6% | 15 | 7 | 11 |
| US101 | San Francisco | 265,297 | 251,101 | 314,619 | 49,322 | 18.6% | 63,518 | 25.3% | 8 | 12 | 12 |
| I80 | Contra Costa | 217,054 | 257,326 | 309,067 | 92,013 | 42.4% | 51,742 | 20.1% | 13 | 11 | 13 |
| I80 | San Francisco | 247,157 | 92,603 | 296,046 | 48,890 | 19.8% | 203,443 | 219.7% | 9 | 23 | 14 |
| SR84 | Alameda | 131,329 | 142,303 | 282,308 | 150,978 | 115.0% | 140,005 | 98.4% | 21 | 15 | 15 |
| US101 | Marin | 229,011 | 211,773 | 266,254 | 37,244 | 16.3% | 54,481 | 25.7% | 11 | 14 | 16 |
| SR92 | San Mateo | 146,291 | 122,376 | 228,928 | 82,637 | 56.5% | 106,552 | 87.1% | 19 | 20 | 17 |
| I80 | Solano | 147,645 | 130,323 | 209,781 | 62,136 | 42.1% | 79,458 | 61.0% | 18 | 17 | 18 |
| SR238 | Alameda | 69,007 | 89,349 | 155,555 | 86,548 | 125.4% | 66,206 | 74.1% | 27 | 25 | 19 |
| SR237 | Santa Clara | 150,783 | 142,141 | 153,552 | 2,769 | 1.8% | 11,411 | 8.0% | 17 | 16 | 20 |
| I280 | San Mateo | 77,321 | 126,965 | 150,907 | 73,586 | 95.2% | 23,942 | 18.9% | 24 | 19 | 21 |
| I880 | Santa Clara | 138,497 | 129,842 | 142,561 | 4,064 | 2.9% | 12,719 | 9.8% | 20 | 18 | 22 |
| SR92 | Alameda | 97,626 | 107,057 | 135,742 | 38,115 | 39.0% | 28,685 | 26.8% | 22 | 21 | 23 |
| SR17 | Santa Clara | 61,561 | 55,348 | 131,713 | 70,153 | 114.0% | 76,366 | 138.0% | 29 | 29 | 24 |
| I680 | Santa Clara | 69,034 | 94,214 | 113,766 | 44,732 | 64.8% | 19,552 | 20.8% | 26 | 22 | 25 |
| SR37 | Sonoma | 154,954 | 62,973 | 106,420 | -48,533 | -31.3% | 43,447 | 69.0% | 16 | 28 | 26 |
| SR12 | Solano | 0 | 18,737 | 91,380 | 91,380 | | 72,643 | 387.7% | | 34 | 27 |
| SR87 | Santa Clara | 65,371 | 89,955 | 89,337 | 23,966 | 36.7% | -618 | -0.7% | 28 | 24 | 28 |
| SR24 | Alameda | 75,063 | 71,101 | 80,813 | 5,751 | 7.7% | 9,712 | 13.7% | 25 | 26 | 29 |
| US101 | Sonoma | 30,262 | 39,796 | 74,663 | 44,401 | 146.7% | 34,867 | 87.6% | 32 | 31 | 30 |
| I280 | San Francisco | 60,723 | 66,094 | 70,815 | 10,092 | 16.6% | 4,721 | 7.1% | 30 | 27 | 31 |
| SR37 | Marin | 92,953 | 44,768 | 54,562 | -38,391 | -41.3% | 9,794 | 21.9% | 23 | 30 | 32 |
| I580 | Contra Costa | 35,351 | 32,409 | 53,498 | 18,147 | 51.3% | 21,089 | 65.1% | 31 | 32 | 33 |
| SR242 | Contra Costa | 20,929 | 11,489 | 29,745 | 8,816 | 42.1% | 18,256 | 158.9% | 33 | 36 | 34 |
| I680 | Solano | 2,734 | 28,208 | 18,252 | 15,518 | 567.6% | -9,956 | -35.3% | 38 | 33 | 35 |
| SR37 | Solano | 14,504 | 13,646 | 7,235 | -7,268 | -50.1% | -6,411 | -47.0% | 35 | 35 | 36 |
| SR12 | Napa | 1,461 | 1,182 | 3,660 | 2,198 | 150.5% | 2,477 | 209.5% | 39 | 39 | 37 |
| SR152 | Santa Clara | 3,557 | 1,054 | 2,364 | -1,194 | -33.6% | 1,309 | 124.2% | 37 | 40 | 38 |
| I980 | Alameda | 1,240 | 4,611 | 1,639 | 399 | 32.2% | -2,972 | -64.5% | 40 | 37 | 39 |
| SR25 | Santa Clara | 314 | 736 | 1,582 | 1,268 | 404.3% | 846 | 114.8% | 42 | 41 | 40 |
| I580 | Marin | 4 | 664 | 1,043 | 1,038 | 23600.0% | 379 | 57.2% | 44 | 42 | 41 |
| SR29 | Napa | 24 | 3 | 233 | 209 | 868.8% | 230 | 9200.0% | 43 | 45 | 42 |
| I780 | Solano | 861 | 28 | 59 | -803 | -93.2% | 31 | 110.0% | 41 | 43 | 43 |
| SR156 | Santa Clara | 1 | 0 | 10 | 9 | 1800.0% | 10 | | 45 | | 44 |
| I80 | Napa | 0 | 9 | 8 | 8 | | -2 | -16.1% | | 44 | 45 |
| I380 | San Mateo | 5,344 | 3,073 | 0 | -5,344 | -100.0% | -3,073 | -100.0% | 36 | 38 | |
| I880S | Alameda | 19,303 | 0 | 0 | -19,303 | -100.0% | 0 | | 34 | | |
| SR13 | Alameda | 0 | 0 | 0 | 0 | | 0 | | | | |
| TOTALS | | 6,969,825 | 6,869,034 | 9,377,986 | 2,408,161 | 34.6% | 2,508,952 | 36.5% | | | |

