



MEMORANDUM

**TO:** Southwest Washington Regional Transportation Council Board of Directors  
**FROM:** Matt Ransom, Executive Director   
**DATE:** April 26, 2016  
**SUBJECT:** 2015 Congestion Management Process – Initial Data

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***AT A GLANCE – INFORMATION***

*The purpose of this memorandum is to provide an overview of the initial data for the 2015 Congestion Management Monitoring Report. The Congestion Management Process is a federal Planning requirement. The Congestion Management Process provides data and analysis for the effective management of the regional transportation system. Staff will seek endorsement of the findings from the 2015 Congestion Monitoring Report at the June RTC Board meeting.*

**BACKGROUND**

The Congestion Management Process (CMP) is a federal planning requirement. All metropolitan planning organizations with a population over 200,000 must have a process for developing performance measures, system monitoring, and identifying strategies. As part of our regional congestion management process, RTC staff prepares an annual monitoring report that uses multiple measures. Multiple measures are used because the use of one measure can never fully capture the complexity of the transportation system. Overall the region's monitoring report provides a consolidated assessment of the regional transportation system's operating conditions and deficiencies.

It then becomes the responsibility of local agencies to identify improvements that correct identified deficiencies. These improvements are then incorporated within the Regional Transportation Plan and implemented through the Transportation Improvement Program. Within the regional grant process, prioritization is given to projects that address deficiencies identified in the Congestion Monitoring Report.

The purpose of this memorandum is to summarize initial data for the 2015 congestion monitoring effort. The full 2015 Congestion Monitoring Report will be brought to the June RTC Board meeting for committee action.

**OVERALL**

With continual growth in regional employment and population more commute trips are being added to the regional transportation system, resulting in additional delay on many of the most congested corridors. This increase in delay and congestion is most apparent in the morning and evening commute as people try to cross both the I-5 and I-205 bridges between Washington and Oregon.

The initial data shows the need to fund and implement the 20-year Regional Transportation Plan. In the short-term, the region will need to implement transportation system management,

operation improvements, and transportation demand management strategies, especially in the bi-state corridors.

## **COLUMBIA RIVER CROSSINGS**

A consistent indicator for the state of the regional economy and bi-state travel is the number of vehicle traveling across the two Columbia River bridges. During the previous recession, bridge crossing activity was either static or reducing, particularly during the depth of the economic contraction. In recent years, that trend has rapidly reversed, as most notably measured in the last two years. Both the I-5 and I-205 traffic volumes continue to grow and set all time daily bi-state travel averages. In 2015, over 294,000 vehicles crossed the two bridges on an average day, up from 273,000 in year 2011.

Both Columbia River bridges and connecting corridors experience daily congestion, which is most acute during morning and evening peak periods. Due to the levels of peak period congestion, the total volume of traffic served is reaching a saturation point, resulting in the flattening of total peak hour volumes, despite higher demand. The morning backup on I-5 South corridor regularly extend north to Main Street, on I-205 north to Padden Parkway, and on SR-14 Central east to 192nd Avenue. Significant congestion also occurs on I-5 and I-205 heading into Washington during the evening commute.

The I-5 corridor between Portland and Vancouver has been identified by INRIX<sup>1</sup> and TomTom<sup>2</sup> as one of the most highly congested corridors in the nation. RTC's analysis of traffic data shows that over the past five years travel time is up 291% in the morning commute along the I-5 South corridor from SR-500 to Jantzen Beach. The peak period continues to get longer as trips shift to periods immediately before and after the peak demand due to congestion impacts.

Chart 1 displays the increase in travel time from 2011 to 2015, on the I-5 South corridor, as congestion results in a growing travel delay. Travel time has increased from 6 ½ minutes to just over 25 minutes, over the past five years. The rapid degradation of corridor travel times reflects the resurgence of the regional economic growth, and increased corridor travel demand.

Chart 2 displays the congestion spreading outside of the traditional peak-hour on the I-5 Bridge between years 2011 and 2015. Although almost 500 more vehicles crossed the I-5 Bridge southbound during the six hour period (5 am through 11 am) in 2015, there were over 1,000 fewer trips crossing the bridge in the peak two hour period between 7 am to 9 am. Commuters are leaving earlier to make their destination on time (shifting their trip outside of the peak-hour), which is reflected in the peak-hour spreading. Although demand is up, turbulence at major facility interchanges in the corridor, and high overall demand, is leading to lower speed and throughput during the peak hours.

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<sup>1</sup> <http://inrix.com/worst-corridors/>

<sup>2</sup> [https://www.tomtom.com/en\\_us/trafficindex/city/POL](https://www.tomtom.com/en_us/trafficindex/city/POL)

Chart 1: I-5 South Travel Time

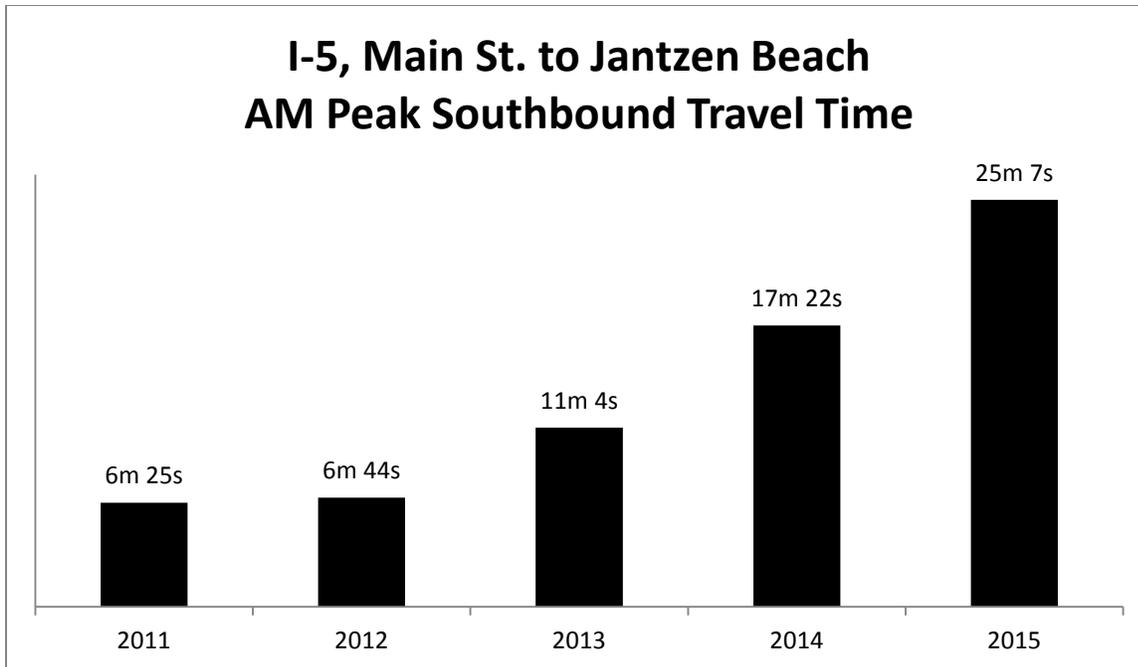
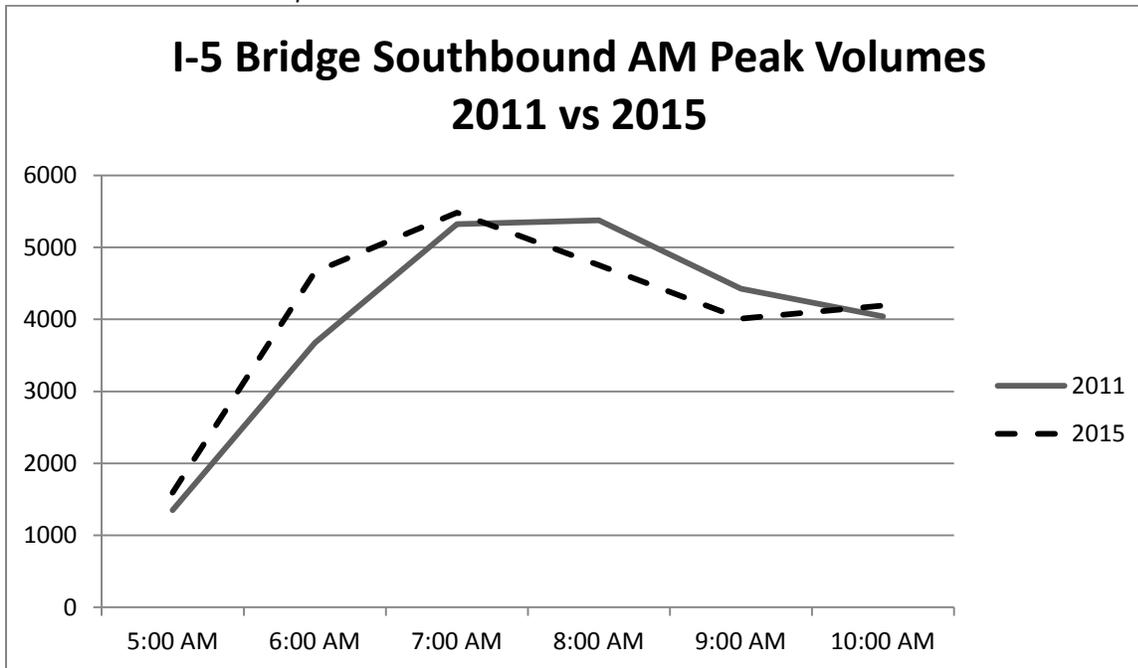


Chart 2: I-5 South Peak Spread



## CORRIDOR CAPACITY RATIO

The capacity ratio provides an indication of the mobility and quality of travel, generally reflected in how well the transportation facility carries the existing traffic volumes. The higher the ratio, the more traffic congestion a driver is likely to experience. A facility with a corridor capacity ratio above 0.90 will feel congested. Once a facility is beyond capacity the corridor capacity ratio can appear to improve, but in reality the corridor is failing as increased delay results in fewer vehicles getting through the corridor. The I-5 South corridor during the morning commute has reached saturation level resulting in slower speeds and fewer vehicle throughputs.

The highest volume to capacity ratio corridors include:

1. \*I-5, Jantzen Beach to Main St. (AM) - > 1.00
2. 18th Street, 112th Av. to 162nd Av. (PM) - > 1.00
3. SR-14, I-205 to 164th Avenue (AM/PM) - > 0.90
4. I-205, Airport Way to Padden Pkwy. (AM) - > 0.90
5. Main Street, Ross Street to Mill Plain (AM) - > 0.90
6. Fourth Plain, 117th Av. to 162nd Av. (PM) - > 0.90
7. SR-500/SR-503, NE 119th St. to Fourth Plain >0.90

\* At the I-5 Bridge, traffic demand exceeds available capacity during the morning commute. The result is slower speeds and fewer vehicles are able to get through the corridor in peak period.

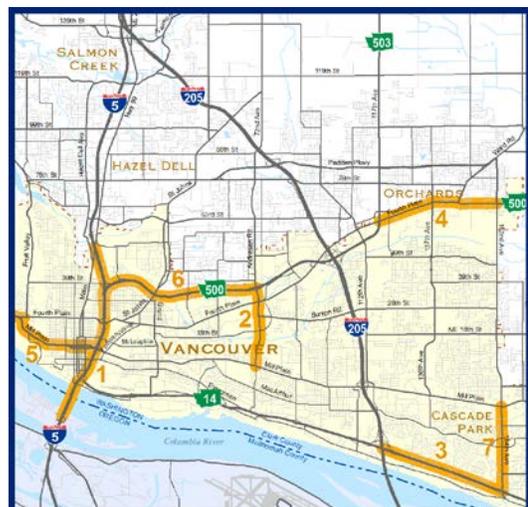


## SPEED AS PERCENT OF SPEED LIMIT

Speeds significantly lower than the posted speed limit is another measure of delay and congestion. Slow corridor travel speed will limit a facilities ability to carry planned traffic volumes. The lowest speed corridors when compared to posted speed limit include:

1. I-5, Main St. to Jantzen Beach (AM) – 15%
2. Andresen, Mill Plain to SR-500 (PM) – 40%
3. SR-14, 164th Av. to I-205 (AM) – 44%
4. Fourth Plain, SR-503 to 162nd Av. (PM) – 48%
5. \*Mill Plain, I-5 to Fourth Plain (PM) – 50%
6. SR-500, I-5 to Andresen Road (PM) – 50%
7. 164th Av., SR-14 to Mill Plain (PM) – 50%

\* Construction closed a lane in part of the corridor.



## INTERSECTION DELAY

Long average delay for the through movement at an intersection adds to the overall travel time and increases congestion at these locations. The five longest evening delays are at the following locations:

1. Fourth Plain/Andresen Rd. (N) – 182 Sec.
2. \*Mill Plain/Columbia St. (E) – 157 Sec.
3. Fourth Plain/SR-500 (E) – 154 Sec.
4. SR-500/42nd/Falk Rd. (E) – 122 Sec.
5. \*Padden Pkwy./NE 94th Av. (W) – 103 Sec.
6. NE 139th St./NE 20th Av. (S) – 102 Sec.
7. NE 134th St./NE 20th Av. (S) – 101 Sec.
8. NE 99th St./Hazel Dell Av. (S) – 94 Sec.
9. NE 99th St./Highway 99 (S) – 91 Sec.

\* Construction closed a lane in part of the corridor.



Overall, the region experienced more intersections with average delay of 45 seconds or more, in 2015 as compared to 2014. The region increased from three intersections in 2014 to nine intersections in 2015 with an average delay of 90 seconds or more. An intersection with an average delay of 90 seconds or more is an intersection that could have resulted in it taking more than one light cycle to get through.

Attachments