MEMORANDUM

TO: Southwest Washington Regional Transportation Council Board of Directors

FROM: Matt Ransom, Executive Director

DATE: April 30, 2019

SUBJECT: **2018 Congestion Management Process – Initial Data**

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 improvement strategies.

The monitoring element of the congestion management process is designed as an informational tool to be used within the decision-making process. The CMP should be used to identify needs and develop solutions. Overall, the CMP Monitoring Report provides a consolidated assessment of the regional transportation system's operating conditions.

In May, staff will provide an overview of the 2018 CMP initial data. RTC staff will then return at the next RTC Board meeting with the CMP report and to seek endorsement of its findings. The purpose of this memorandum is to report initial data for the 2018 Congestion Management Process.

INITIAL FINDINGS

Clark County Freeway Congestion

The following table shows key mainline congestion, were average speeds are decreasing due to congestion, along grade-separated facilities in Clark County, Washington:

Route	Limits	Time	Hours
I-5	Main St. to I-5 Bridge (SB)	5:45 - 9:45 a.m.	4 hours
I-205	SR-500 to Glenn Jackson Bridge (SB)	7:00 – 9:30 a.m.	2.5 hours
I-205	Padden Parkway to 78th St. (SB)	6:00 – 9:00 a.m.	3 hours
SR-14	192nd Av. to I-205 (WB)	6:30 – 9:30 a.m.	3 hours
SR-14	Columbia Shores to I-5 (WB)	6:00 – 10:00 a.m.	4 hours
SR-500	NE 15th Av. to I-5 (WB)	6:00 – 8:30 a.m.	2.5 hours
I-5	I-5 Bridge to SR-14 (NB)	1:00 - 8:00 p.m.	7 hours
I-5	Mill Plain to SR-500 (NB)	4:00 – 5:30 p.m.	1.5 hours
I-205	Glenn Jackson Br. To Padden Parkway (NB)	3:30 – 7:00 p.m.	3.5 hours
SR-14	I-205 to 162nd Av. (EB)	4:00 – 7:00 p.m.	3 hours
SR-500	I-205 to Fourth Plain (EB)	3:30 – 6:30 p.m.	3 hours

Transit

C-TRAN overall ridership has continued to increase over the last several years with total ridership of approximately 6.3 million riders annually. Ridership was up 3.8% from 2017 to 2018. Local gains have been boosted largely by The Vine Bus Rapid Transit service, which is experiencing strong growth. C-TRAN has started planning for Bus Rapid Transit in their second busiest route along Mill Plain Boulevard. However, C-TRAN continues to see declining ridership on their commuter routes, with ridership down by 1% from 2017 to 2018.

Corridor Capacity Ratio

The capacity ratio provides an indication of how well the transportation facility carries the existing traffic volumes. A facility with a corridor capacity above 0.80 is likely approaching capacity, while facilities above 0.90 are very congested. The highest volume to capacity ratio corridors includes:

1. I-5, Jantzen Beach to Main St. (AM) - > 1.00
2. Main Street, Ross Street to Mill Plain (AM) - > 0.97
3. I-205, Airport Way to Padden Parkway (AM) - > 0.95
4. SR-14, I-205 to 164th Avenue (PM) - > 0.93 *(AM >0.90)*
5. SR-503, Fourth Plain to NE 119th St. (PM) >0.87 *(AM >0.81)*

With the completion of road improvements on NE 18th Street, 112th Av. to 138th Av., the NE 18th Street corridor has been removed from the list of highest corridor capacity ratio.

Speed as Percent of Speed Limit

Speeds significantly lower than the posted speed limit is another indication of congestion. Slow speed percentage will limit a facilities ability to maximize available capacity and often results in backups. The lowest speed corridors when compared to posted speed limit include the following:

1. I-5, Main St. to Jantzen Beach (AM) – 25%
2. I-205., SR-500 to Airport Way (AM) – 39%
3. *Highway 99, Ross to 139th St. (PM) – 44%
4. SR-14, I-205 to 164th Av. (PM) – 44% (AM-50%)
5. *SR-500, I-5 to Fourth Plain (PM) – 45%
6. SE 164th Av., SR-14 to Mill Plain (PM) – 47%
7. Andresen Rd., Mill Plain to SR-500 (PM) – 48%
8. SR-503, Fourth Plain to 119th St. (PM) – 49%

**Please note that data was collected on SR-500 prior to the removal of traffic signals at 42nd Av. and 54th Av. The County noted that Highway 99 is used for local access, and the corridor is timed to support major east-west movements (78th St., 99th St., and 134th St.).*

Corridor Speed

Slow corridor travel speed can be an indicator of delay and congestion. Better progression and coordination between signals will improve overall travel time, reliability, and safety. One

concern is that travel speed below 20 mph on arterials, may lead to vehicles cutting through neighborhood streets in an attempt to find a faster route. The lowest speed corridors include:

1. I-5, Main Street to Jantzen Beach (AM) – 14 mph
2. Main Street, I-5 to Mill Plain (AM) – 16 mph (PM - 17 mph)
3. Andresen Road, Mill Plain to SR-500 (PM) – 17 mph
4. Highway 99, Main St. to NE 139th St. (PM) – 17 mph
5. Mill Plain, Fourth Plain to I-5 (PM) – 18 mph
6. Fourth Plain, Andresen to SR-503 (PM) – 18 mph

Other than the I-5 and Main St. morning congestion, the 2018 CMP data showed a substantial decline in arterial speed during the PM peak period. Fourth Plain, Andresen to SR-503 differs from the remainder of the list because the corridor has significant available capacity.

Intersection Delay

The region experienced a significant increase in the number of intersections with long delays. Long average delay for the through movement at signalized intersections adds to the overall corridor travel time and can create choke points. The intersections with delays of 2 minutes or longer include:

1. Burton Rd/NE 86th Av. (Westbound) – 194 Second (3m 14s)
2. *SR-500/Falk Rd. (Eastbound) – 167 Seconds (2m 47s)
3. Fourth Plain/SR-500/SR-503 (Northbound) – 154 Seconds (2m 34s)
4. NE 28th St./NE 138th Av. (Southbound) – 139 Seconds (2m 19s)
5. Fourth Plain/Andresen Rd. (Northbound) – 133 Seconds (2m 13s)
6. Padden Parkway/SR-503 (Southbound) – 127 Seconds (2m 7s)
7. NE 139th St./NE 20th Av. (Westbound) – 125 Seconds (2m 5s)

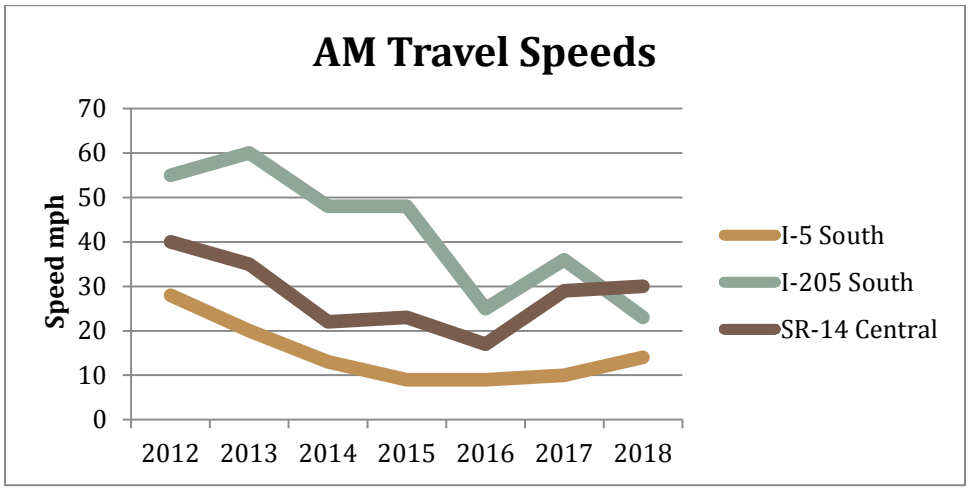
**At-grade signal removed in November 2018*

High volume intersections are becoming corridor bottlenecks, and agencies need to develop practical solutions to resolve these bottlenecks. In particular, Fourth Plain/SR-500, Fourth Plain/Andresen Rd, Padden Parkway/SR-503, and Mill Plain/Chkalov intersections are significant bottlenecks during the evening peak period.

Columbia River Crossings

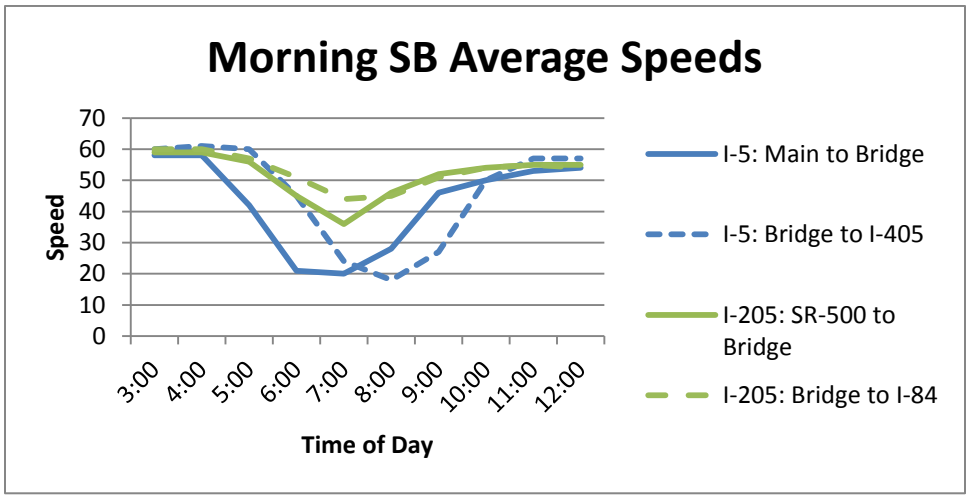
Both the I-5 and I-205 corridors are strategically important to the Clark County region. The two bridges combined have daily traffic volumes of over 300,000. Both corridors are significant choke points for bi-state travel and experience significant congestion. The number of days and duration of congestion are increasing as the economy of the region expands.

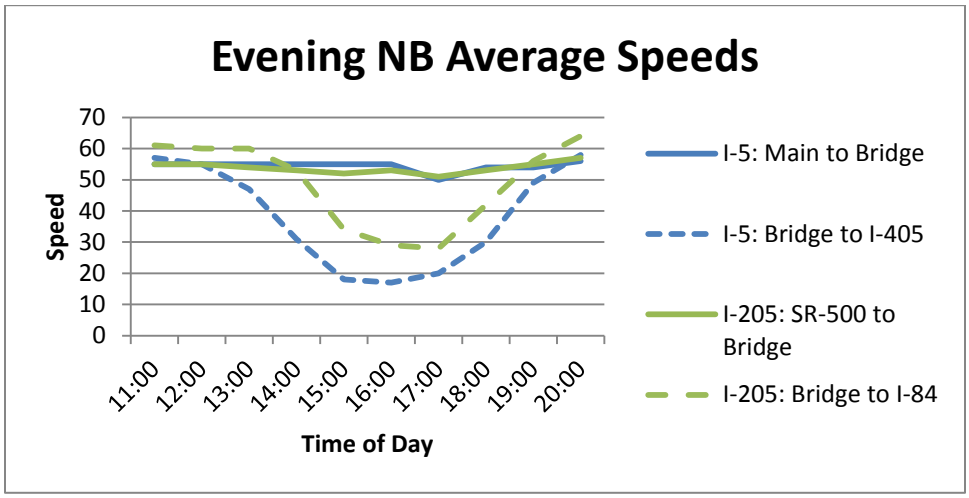
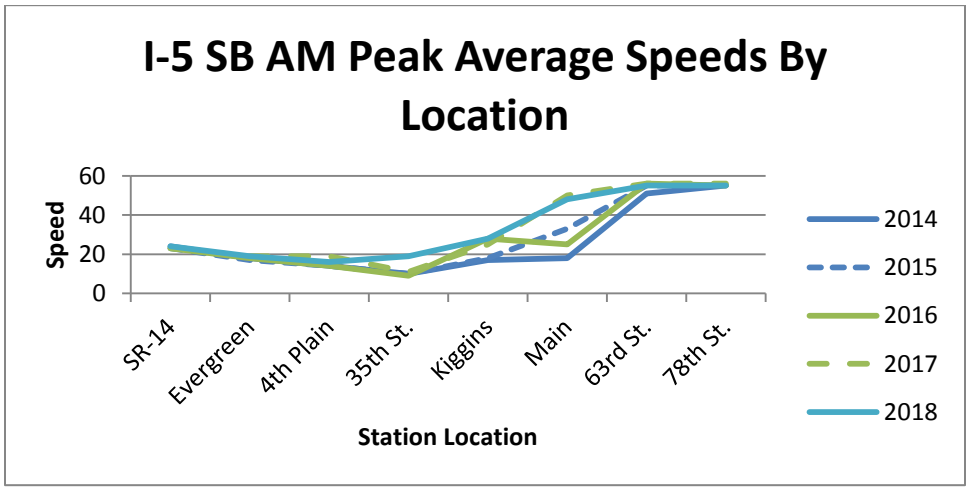
During the morning commute, the I-5 South corridor has reliable poor peak period speeds. While the I-205 South corridor speeds often fluctuate. In addition, the SR-14 Central corridor, just east of I-205, is significantly impacted by congestion on the I-205 corridor, especial in the right lane. The following graphs show the morning peak directional travel speed, by year, using a floating car methodology.



From 2016 to 2018, both the I-5 southbound and SR-14 west bound morning speeds have improved. Part of this improved speed may be attributed to more active management in both corridors utilizing electronic signage and adjustments to the I-5/SR-14 ramp meter. Additional ramp metering and other active management tools are planned in both the I-5 and the I-205 corridor over the next few years, and may well result in additional operational improvements.

Using October 2018 WSDOT and ODOT data stations, average corridor speeds were estimated. The data shows that southbound speeds in the I-5 corridor decrease between 5 a.m. and 11 a.m. (approximately 4 hours of congestion). In the I-205 corridor speeds decrease between 6 a.m. and 10 am. (Approximately 2.5 hours of congestion). The evening data shows significant decline in speeds within Oregon in both the I-5 and I-205 corridors. While evening speed on the Washington side only shows a small decline during the 5 p.m. hour.





The next graph shows average speed along the I-5 corridor by location during the month of October between years 2014 and 2018. The data shows a wide variation between 35th Street to Main St. The shorter length of congestion in the last couple years may be attributed in part to WSDOT's active management within the I-5 corridor. The data also indicates that the average backup in the I-5 morning commute has moved from Main Street to a location closer to SR-500.