



MEMORANDUM

TO: Southwest Washington Regional Transportation Council Board of Directors
FROM: Matt Ransom, Executive Director
DATE: May 29, 2018 
SUBJECT: **2017 Congestion Management Process – Initial Data and Summary Report**

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. 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.

In June, staff will provide an overview of the initial data and draft 2017 CMP Summary Report. RTC staff will then return at the next RTC Board meeting with the final report and to seek endorsement of its findings. The purpose of this memorandum is to report on the progress of the 2017 Congestion Management Process.

2017 CMP SUMMARY REPORT

The Congestion Management Process Monitoring Report includes transportation system performance measures that address volume, capacity, speed, occupancy, safety, and other multimodal performance measures. When tracked over time, performance measures provide quantitative information to decision makers. Viewed collectively, these performance measures provide a comprehensive assessment of the ongoing needs upon the regional transportation system.

The attached 2017 Congestion Management Summary Report includes key data and findings from the monitoring report in such a way that the reader can quickly understand the full 2017 Congestion Management Process Monitoring Report.

The 2017 Congestion Management reports will have a greater focus on and highlight the needs of the arterial system.

KEY STRATEGIES

The Congestion Management Process shows that implementation of the 20-year Regional Transportation Plan (RTP) can help address many of the key capacity bottlenecks. The lack of progress on implementing select projects will result in delay in achieving the RTP benefits and

2017 Congestion Management Process – Initial Data and Summary Report

May 29, 2018

Page 2

add to future project costs. The following are key projects to address congestion needs within Clark County:

| Identified Needs | In RTP | Funded |
|--|--------|--------|
| I-5 Interstate Bridge and Interchanges | ✓ | (P) |
| - I-5/Mill Plain Interchange (2026 Construction) | ✓ | ✓ |
| Freeway Operational Improvements (I-5, I-205, SR-14, SR-500) | ✓ | (P) |
| (P) Freeway Operational Study | | ✓ |
| I-205/SR-14 Interchange | | |
| I-205, SR-500 to Padden Widening | ✓ | |
| I-205/Padden Parkway Interchange Reconstruction | ✓ | |
| I-205/Salmon Creek Interchange Phase II | ✓ | |
| SR-14, I-205 to 164 th Av. Widening (2020 Construction) | ✓ | ✓ |
| SR-500/42 nd & 54 th Av. Grade Separation | ✓ | |
| SR-500/SR-503/Fourth Plain Grade Separation | ✓ | |
| Freeway Ramp Meters | ✓ | (P) |
| (P) I-5 Southbound, 99 th St. to SR-14 | | ✓ |
| (P) I-205 Northbound at Mill Plain and SR-500 | | ✓ |
| (P) SR-14 Westbound at 164 th Av. | | ✓ |
| Andresen Rd./Padden Parkway Intersection Upgrade | ✓ | |
| Arterial Operational Improvements | ✓ | |
| - Highway 99, 78 th St. to 139 th St. | | |
| - Hazel Dell Avenue, 78 th St. to 99 th St. | | |
| - 112 th Avenue, 28 th St. to SR-500 | | |
| - Andresen, Mill Plain to SR-500 | | |
| - 164 th Avenue, SR-14 to Mill Plain | | |
| - Mill Plain, 136 th Av. to 192 nd Av. | | |
| - Burton/28 th Street, Andresen Rd. to 164 th Av. | | |
| - SR-503, Fourth Plain to 99 th | | |
| - Fourth Plain, 117 th Av. To 137 th Av. | | |
| Fourth Plain/Andresen Intersection Upgrade | ✓ | |
| NE 18 th Street Widening, 112 th to 164 th Av | ✓ | (P) |
| (P) 18 th St, Four Season to 136 th Av (2018 Completion) | | ✓ |
| County-Wide Transit Expansion | ✓ | |
| Bi-State Transit Expansion | ✓ | |

(P): Partial Funding

Attachment

2017 Congestion Management Process Summary Report **DRAFT**



Introduction

Southwest Washington Regional Transportation Council's (RTC's) federally required Congestion Management Process (CMP) is a regional program that analyzes travel delay characteristics and provides system performance information on major streets and state highways. Monitoring of congestion is a planning tool that provides reliable data to identify traffic problems to support wise investment decisions to enhance the movement of people and goods.

Corridor Congestion

Congestion can generally be defined as excess demand for road travel. This occurs when volumes exceed capacity, resulting in a decrease in speed and longer delays.

Key Findings

The 2017 data confirms that the region's economy continues to grow, resulting in an increase in both morning and evening peak hour delay. Between 2012 and 2017, Clark County's population increased by 39,750 people or 9.2%. The Bureau of Labor Statistics (BLS) shows the Portland/Vancouver region added over 140,000 or 12.7% jobs during the same time period. This increase in population and employment has resulted in additional trips, especially during peak periods, on the transportation system.

With this growth the congestion management system shows increasing congestion, decreasing travel speeds, and greater delays along primary corridors during the morning and evening commute.

The I-5 and I-205 corridors are the backbone of the regional transportation system and play a strategic role in regional travel. Meeting the needs of the regional transportation system will require a balanced approach that preserves the existing system, improves system performance, and adds capacity at selective chokepoints.

The implementation of the 20-year Regional Transportation Plan (RTP) is critical to support regional mobility and reduce congestion. However, the lack of transportation revenue for the I-5 Bridge replacement along with other key highway bottlenecks, is contributing to worsening traffic conditions. The lack of progress on select projects will result in delay in achieving the RTP benefits and add to future costs.

Regional Summary

Clark Co. Population

2012 - 431,250
vs.
2017 - 471,000
OFM Populations



Portland/Vancouver Employment

2012 - 1.10
vs.
2017 - 1.25
In millions of jobs BLS



Unemployment Rate

2012 - 7.9%
vs.
2017 - 4.1%
Percent of labor force



Bi-State C-TRAN Ridership

2013 - 1,640
vs.
2017 - 1,550
Daily Evening Peak Riders



Columbia River Crossings

2012 - 273,800
vs.
2017 - 297,900
Daily I-5 and I-205 Bridge Volumes



Evening Travel Speed

2012 - 35.8
vs.
2017 - 32.4
Average system speed



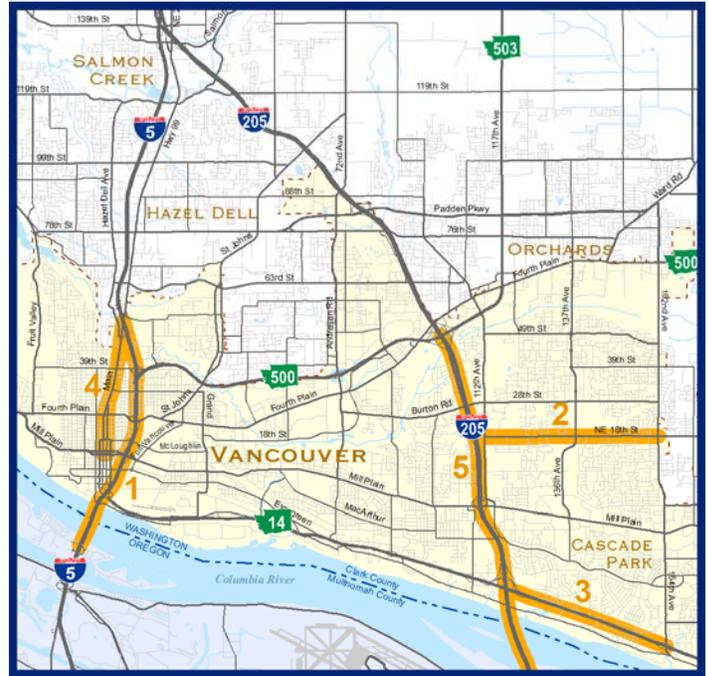
Corridors: Volume to Capacity

The corridor capacity ratio is an aggregation of the volume/capacity ratios for the individual segments that make up a corridor. The capacity ratio provides an indication of how well the transportation facility carries the existing traffic volumes. A ratio above 0.90 is an indicator of significant congestion. A ratio of 1.00 and above indicates the worst traffic congestion.

The five worst volume to capacity corridors are:

- 1 I-5, Main St. to Jantzen Beach (AM) >1.00
- 2 18th St., 112th Ave. to 162nd Ave. (PM) >0.99
- 3 SR-14, I-205 to 164th Avenue (AM/PM) >0.93
- 4 Main Street, Ross Street to Mill Plain (AM) >0.92
- 5 I-205, Airport Way to Padden Parkway (PM) >0.91

At the I-5 and I-205 bridges, traffic demand often exceeds available capacity during the morning and evening commute. The result is that fewer vehicles are able to get through the corridor.



Corridors: Lowest Speed Percentage

The level of speed in the corridor is ranked by comparing actual measured travel speed to the posted speed limit. The percentage along arterials is often directly connected to delay at signalized intersections. Improved progression and coordination between signals will improve overall travel time and safety. A travel speed lower than 60% of the posted speed limit is below average and is an indicator of delay.

The five lowest speed percentage corridors are:

- 1 I-5, Main St. to Jantzen Beach (AM) 16%
- 2 SR-500, I-5 to Andresen Rd. (PM) 42%
- 3 NE 28th St, Andresen to 164th Av. (PM) 48%
- 4 Main St., Ross St. to Mill Plain. (AM) 51%
- 5 Andresen Rd., Mill Plain to SR-500 (PM) 53%

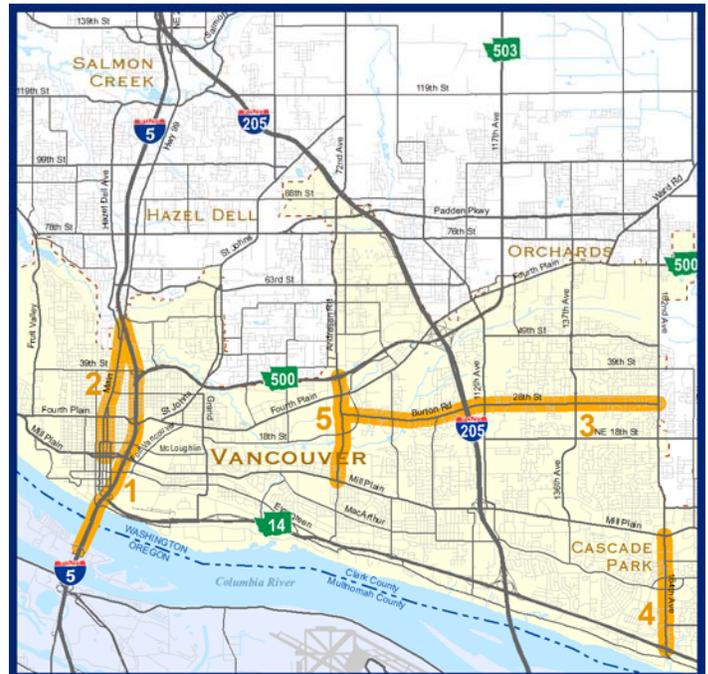


Lowest Speed

Slow corridor travel speed, especially less than 20 mph, is often an indicator of delay and congestion. Keeping every vehicle's speed more consistent reduces conflicts, and improves average throughput of an arterial. Improved progression and coordination between signals will result in improved traffic flow and increase capacity.

The following corridors all exhibit speeds below 20 mph and potential congestion:

- | | | |
|----------|---|---------------|
| 1 | I-5, Main St. to Jantzen Beach (AM) | 9 mph |
| 2 | Main Street, I-5 to Mill Plain (AM) | 16 mph |
| 3 | Burton Road, Andresen to 164 th Av. (PM) | 17 mph |
| 4 | 164 th Avenue, SR-14 to Mill Plain (PM) | 18 mph |
| 5 | Andresen Road, Mill Plain to SR-500 (PM) | 19 mph |

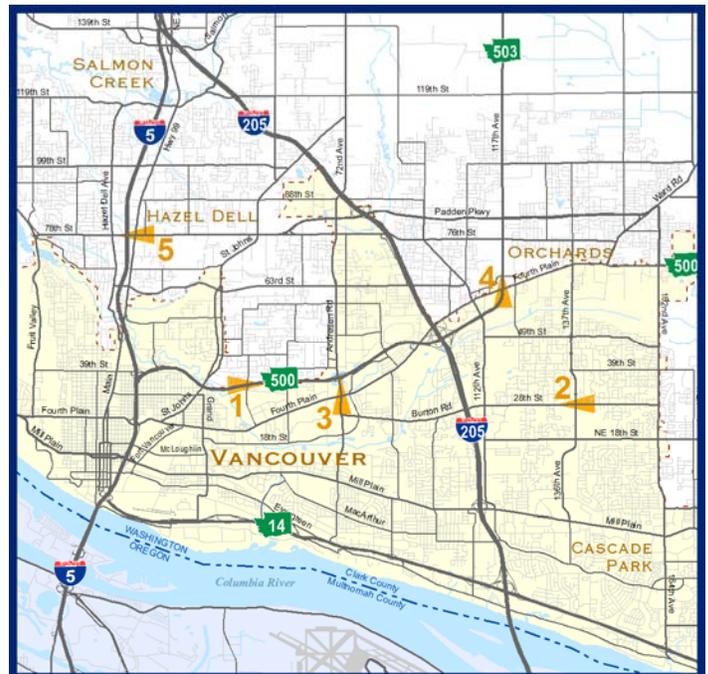


Intersection Delay

A long average delay for the through movement at an intersection adds to the overall travel time and increases congestion at intersections. The longest evening delays are at the following intersections:

- | | | |
|----------|--|-----------------|
| 1 | SR-500/42nd/Falk Rd. (E) | 213 Sec. |
| 2 | NE 28 th St./NE 138 th Av. (S/W) | 139/149 |
| 3 | Fourth Plain/Andresen Rd. (N) | 120 Sec. |
| 4 | Fourth Plain/SR-503/SR-500 (N) | 110 Sec. |
| 5 | NE 78 th St./Highway 99 (W) | 100 Sec. |

In signal timing, the higher volume movement is generally favored over lower volume movements, to improve the overall intersection operations. The greatest concern is long delays in the eastbound and northbound peak directions.



2007 to 2017 Arterial Comparison

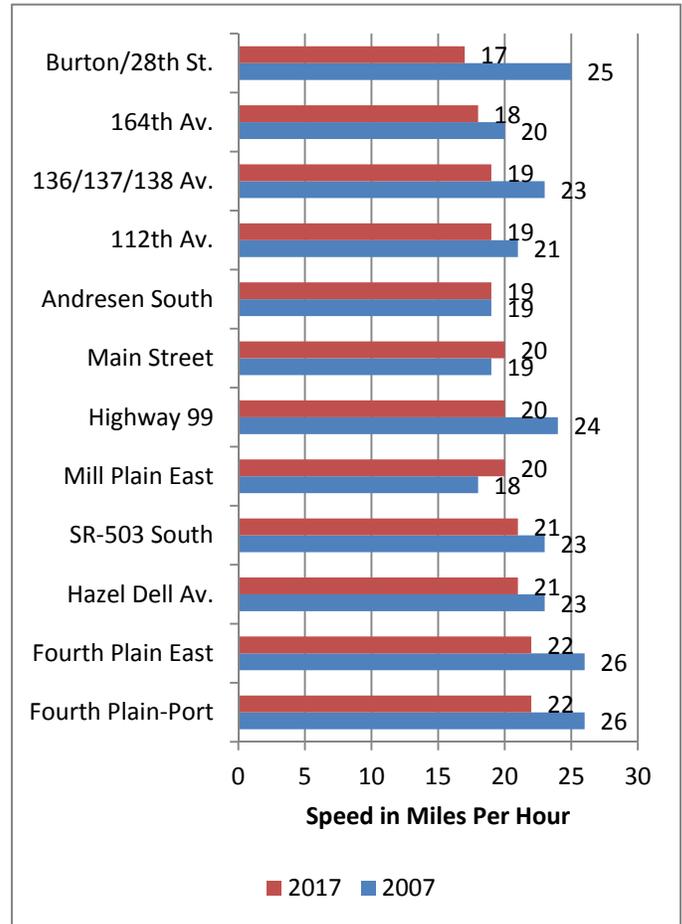
A 10-year comparison of arterial corridors was performed to identify issues associated with congestion.

During the 10 year period, 15 out of 30 arterial corridors experienced slowing of two or more miles per hour (mph), 10 out of 30 arterial corridors had a one mph or less change in speed, and 5 corridors had a speed increase of two or more mph.

Those corridors with improved travel speed all had a significant capital or signal investment. These corridors included Mill Plain Central (Signal Coordination), Mill Plain East (Signal Coordination), St. Johns (SR-500/St. Johns Interchange), SR-502 (Widening), and 134th Street (Salmon Creek Interchange).

Those corridors with reduced travel speed had notable traffic growth, added traffic signals, intersections with considerable delay, or signal coordination issues.

The adjacent table displays the corridors that show signs of potential congestion in 2017, due to either slow corridor speed or reduction of travel speed:



Key Regional Strategies

The information and data contained in the Congestion Management Report is used to identify appropriate congestion management strategies:

- The region should continue to work towards implementation of an I-5 bridge replacement project.
- The interstate and state highway system is the backbone of the regional transportation system and adequate funding is needed to provide additional capacity and improve key bottlenecks.
- Local and state agencies need a robust program to analyze and invest in corridor operational improvements to get the most out of the existing transportation system.
- High volume intersections can become corridor bottlenecks and agencies need creative solutions to resolve these bottlenecks.

- There is a need to upgrade arterials within the Urban Growth Areas to urban standards, to accommodate all modes.
- Transportation System Management and Operations (TSMO) and Transportation Demand Management (TDM) strategies should be a part of the regional solution. This would include transit expansion.

For More Information

You can get more information on the Congestion Management Process by contacting the Regional Transportation Council at 564-397-6067 or by visiting the project website at <http://www.rtc.wa.gov/programs/cmp>.

Key Regional Improvements

Improving the efficiency and reliability of the existing transportation can often be accomplished at a lower cost and in a shorter time through operational improvements. Given limited funding resources and rapid growth in traffic, the region needs to continue to enhance the existing system's performance by best utilizing existing system capacity. Capacity should be selectively added where other strategies have been exhausted and where addition of capacity is feasible and affordable.

The following are key projects to address congestion needs within Clark County

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Bus on Shoulders

C-TRAN began an 18 month SR-14 bus on shoulder (BOS) demonstration project in October 2017. It lets commuter buses bypass congestion on SR-14 between I-205 and 164th by using the freeway shoulder anytime mainline traffic is below 35 mph. Buses can travel 15 mph faster than adjacent traffic with a maximum speed of 35 mph. BOS can provide both safe operations and improved reliability and speeds for transit without affecting freeway operations. 2017 data was collected prior to implementation of bus on shoulder, but early indications are that the SR-14 Bus on Shoulders is a low cost project that is providing benefits. If the bus on shoulder demonstration project continues to provide benefits, it could be expanded into other corridors.