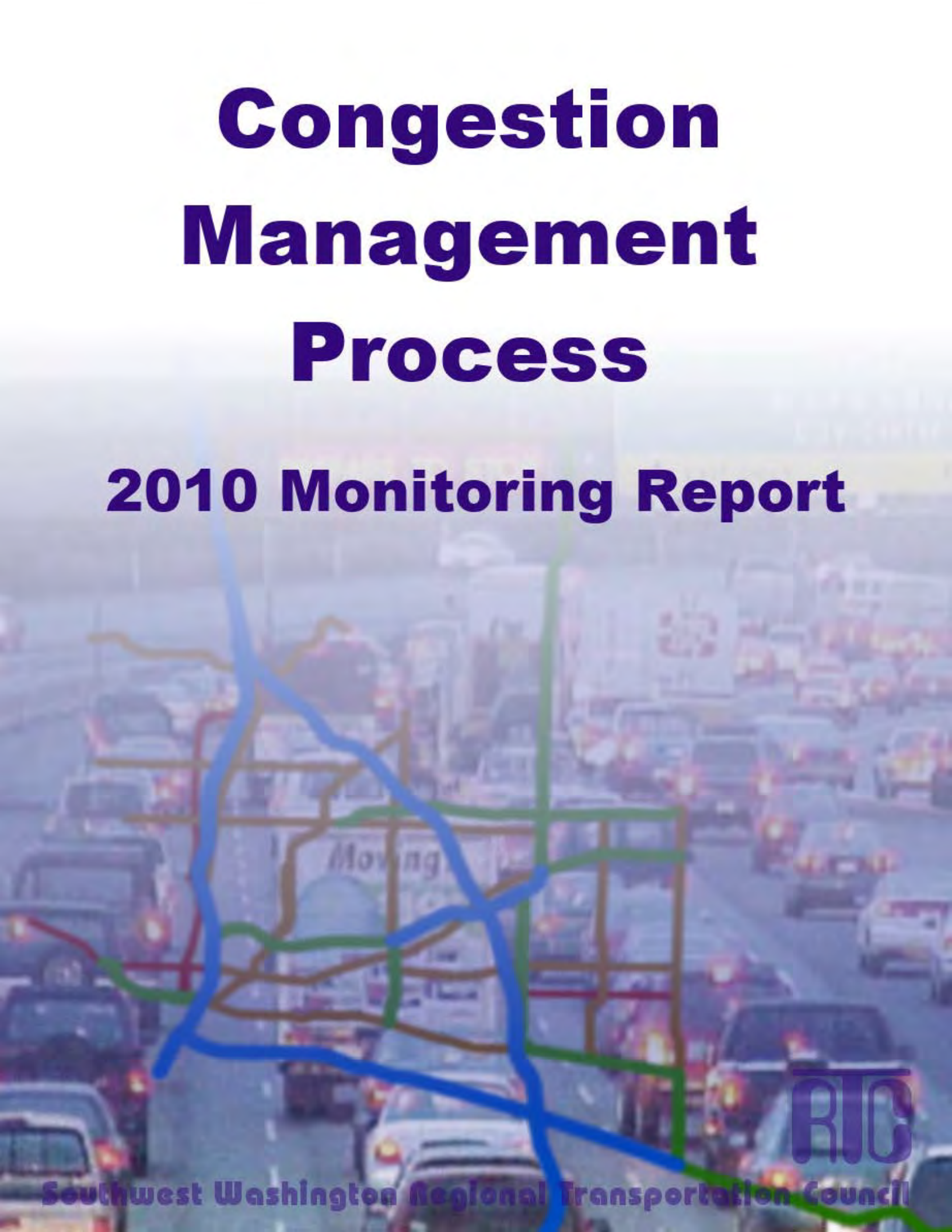
Congestion Management Process

2010 Monitoring Report



RTC

Southwest Washington Regional Transportation Council

CONGESTION MANAGEMENT PROCESS

2010 MONITORING REPORT

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CHAPTER I.
INTRODUCTION

The *Congestion Management Process: Monitoring Report* offers information to Southwest Washington Regional Transportation Council (RTC) for consideration in implementing a Congestion Management Process (CMP). The CMP was formerly know as a Congestion Management System and was intended by Federal law to be a systematic, transparent way for transportation planning agencies to identify and manage congestion, using performance measures to direct funding towards strategies that most effectively address congestion. The CMP is intended to augment the previous effort and be folded into the overall metropolitan transportation planning process.

A. BACKGROUND

The CMP is required to be developed and implemented as an integral part of the metropolitan planning process in Transportation Management Areas, regions with more than 200,000 people.

The Federal regulation at 23 CFR 450.320(c) identifies the required components for a CMP:

1. Methods to monitor and evaluate the performance of the multimodal transportation system, identify the causes recurring and non-recurring congestion, identify and evaluate alternative strategies, provide information supporting the implementation of actions, and evaluate the effectiveness of implemented actions.

2. Definition of congestion management objectives and appropriate performance measures to assess the extent of congestion and support the evaluation of the effectiveness of congestion reduction and mobility enhancement strategies for the movement of people and goods. Since levels of acceptable system performance may vary among local communities, performance measures should be tailored to the specific needs of the area and established cooperatively by the State(s), affect MPO(s), and local officials in consultation with the operators of major modes of transportation in the coverage area.

3. Establishment of a coordinated program for data collection and system performance monitoring to define the extent and duration of congestion, to contribute in determining the causes of congestion, and evaluate the efficiency and effectiveness of implemented actions. To the extent possible, this data collection program should be coordinated with existing data sources (including archived operational/ITS data) and coordinated with operations managers in the metropolitan area.

4. Identification and evaluation of the anticipated performance and expected benefits of appropriate congestion management strategies that will contribute to the more effective use and improved safety of existing and future transportation systems based on the established performance measures. The following categories of strategies, or combination of strategies, are some examples of what should be appropriately considered for each area:

- *(i) Demand management measures, including growth management and congestion pricing*
- *(ii) Traffic operational improvements*
- *(iii) Public transportation improvements*

(iv) ITS technologies as related to the regional ITS architecture, and

(v) Where necessary, additional system capacity

5. Identification of an implementation schedule, implementation responsibilities, and possible funding sources for each strategy (or combination of strategies) proposed for implementation.

6. Implementation of a process for periodic assessment of the effectiveness of implemented strategies, in terms of the area's established performance measures. The results of this evaluation shall be provided to decision makers and the public to provide guidance on selection of effective strategies for future implementation.

B. Overall Process

The overall Congestion Management Process incorporated by Southwest Washington Regional Transportation Council incorporates the following steps:

1) Develop purpose and goals
2) Identify boundary and network
3) Develop performance measures
4) System Monitoring
5) Identify and evaluate strategies
6) Implement strategies
7) Monitor strategy effectiveness

The Congestion Management Process and Products is displayed in **Figure 1** on page 6.

C. Goals and Objectives

The goal of the Congestion Management Process is to develop a process that provides for effective management and operation of the Congestion Management System.

The following objectives were used to guide the development of the Congestion Management Process:

- Focus upon congestion
- Be practical and easy to apply
- Emphasize regional travel perspective
- Support the local and regional decision-making process
- Increase public awareness of congestion issues and tradeoffs

D. Congestion Management Boundary and Network

1. Congestion Management Network

The boundaries of the Vancouver/Clark County Congestion Management System were set as the Vancouver metropolitan area. The exceptions to this definition are the major inter-regional corridors and major arterial corridors connecting other cities to the base congestion management network, (I-5, SR-14, SR-501, SR-502, SR-503, and La Center Road). This included the addition of congestion management corridors to connect Battle Ground, Ridgefield, and La Center with the base network.

Within these boundaries, the first step in defining the network was to identify a set of candidate facilities and corridors. Only regionally significant corridors were considered as candidates for the network. Regionally significant corridors were defined as facilities that are part of the Regional Transportation System as identified in the Metropolitan Transportation Plan (MTP).

The initial congestion management network was refined from the list of candidate corridors. Using federal guidelines to include facilities with "existing or potential recurring congestion," professional judgment was used to identify those corridors that are

currently or are likely to become congested.

The scope of the congestion management network includes 31 regionally significant transportation corridors within the Clark County, Washington region. The existing Congestion Management Network is listed in **Table 1** (Page 5) and illustrated on **Map 1** (Page 15).

2. CORRIDOR CONCEPT

An important step in defining the congestion management network was to define the basic unit for describing the network and performing analysis. For the Vancouver/Clark County congestion management network, transportation corridors were selected as that unit. Where appropriate, individual corridors are made up of more than one transportation facility. The multi-facility corridors occur where there are parallel facilities serving the same function and to support the concept that transit or transportation demand management impacts a corridor rather than a single facility.

Although data is reported for individual facilities for the multiple facility corridors, they are still grouped by the congestion management corridor they are associated with and by a set of specific endpoints. These constituent facilities are defined as those major regional facilities (i.e., principal arterials and freeways) that run in parallel and may be used as alternative routes. It should be noted that a corridor might consist of only one facility if there are no alternative facilities in close proximity. The endpoints for each corridor represent locations where the characteristics of the corridor change significantly.

Each facility within a corridor is further divided into a series of segments. A segment is the portion of roadway between major intersections or interchanges. To allow for consistent operational analysis, corridor segments were developed such that the capacity and number of lanes remain the same within each segment.

3. LAND USE

Land use and transportation are related, in that land use and transportation can influence one another. Development type, density, and location influence regional travel patterns. On the other hand, transportation access can influence land use and development.

In order to fully understand Congestion Management Network, you need to understand land use along congestion management corridors. **Map 2** (Page 16) illustrates the Congestion Management Corridors and a generalized comprehensive land use within the region.

4. MULTIMODAL

In addition to the road network, it is important to understand the multimodal aspects of CMP Network. Sometimes modes such as walking, bicycling, and transit are overlooked for their ability to mitigate congestion. Investment in these modes can increase safety and mobility.

Map 3 and 4 (Pages 17-18) illustrates the existing suitability of walking and bicycling in the CMP corridors. **Map 5** (Page 19) shows transit frequency along existing transit routes and how these routes serve the CMP network.

5. SAFETY

Safety for all modes of travel is an important component of the metropolitan transportation planning process. As such the region completed a 2011 Safety Management Assessment for Clark County. **Map 6** (Page 20) illustrates the 30 signalized intersections that had 20 or more collisions between years 2007 and 2009.

E. PERFORMANCE MEASURES

1. DATA ELEMENTS

Collected data elements include traffic counts, travel time, automobile occupancy, and transit ridership. In addition, RTC compiles and collects other measures of system performance including highest volume intersections, Columbia River bridge volumes, and park and ride capacity.

This collected data serves as the basis for developing vehicle volumes, Columbia River crossing, capacity ratio, truck percentage, travel speed, speed as percent of posted speed limit, intersection delay, automobile occupancy, transit ridership by type of service, transit seat capacity, and transit seat percent of lane capacity.

2. DATA COLLECTION

RTC is responsible for setting up a process for the collection of congestion data. Some of the needed data is regularly collected by other transportation agencies within the Clark County region. RTC organized a process for collecting existing data. The flow for the collection of transportation data is illustrated on **Figure 2** (Page 6).

Intelligent Transportation Systems (ITS) are making the collection of data more automated and will continue to do so over time. In addition, the region has initiated a transportation data archive system called PORTAL to enhance availability, ease the retrieval, and assist with the analysis of transportation data to support performance monitoring.

3. DATA ANALYSIS AND SYSTEM PERFORMANCE

Transportation data is analyzed and validated for use in the congestion management process. The collected data is then applied to develop system performance measures for the transportation corridors. System performance data is then illustrated through tables and maps. The system performance data and maps are then used to identify system deficiencies and needs.

Table 1 – Corridors in the Congestion Management Network

Corridor Name	Facilities	Endpoints	
I-5 – North	I-5	County Line	I-205 Interchange
I-5 – Central	I-5, Hwy 99, Hazel Dell	I-205 Interchange	Main St.
I-5 – South	I-5, Main Street	Main St. Interchange	Jantzen Beach
I-205 – Central	I-205	I-5 interchange	SR 500
I-205 – South	I-205, 112th Avenue	SR 500	Airport Way
St. Johns	St. Johns Rd./St. James Rd., Fort Vancouver Way	NE 72nd Ave.	Mill Plain Blvd.
Andresen - North	Andresen Rd. / N.E. 72nd Avenue.	119th St	SR 500
Andresen - South	Andresen Rd.	SR 500	Mill Plain Blvd.
SR-503 North	SR 503	SR 502	119th St.
SR 503 South	SR 503	119th St.	Fourth Pl./SR 500
137th Avenue	136th/137th/138th Avenue	Padden Parkway	Mill Plain Blvd.
162nd Av. North	162nd/164th Avenue	Ward Rd.	Mill Plain Blvd.
164th Av. South	164th Avenue	Mill Plain Blvd.	SR-14
192nd Av.	192nd Avenue	SE 1st St.	SR-14
SR 14 West	SR 14	I-5	I-205
SR 14 Central	SR 14	I-205	164th Ave.
SR 14 East	SR 14	164th Ave.	Evergreen Hwy.
SR-501/Fourth Plain	SR-501/Mill Plain, Fourth Plain	I-5	NW 26th Street
Mill Plain West	Mill Plain Blvd.	I-5	I-205
Mill Plain East	Mill Plain Blvd.	I-205	164th Ave.
Fourth Plain West	Fourth Plain	I-5	Andresen Rd.
SR 500 – West	SR 500	I-5	Andresen Rd.
Fourth Plain /SR-500 Central	SR 500, Fourth Plain	Andresen Rd.	SR 503
Fourth Plain – East	Fourth Plain	SR 503	162nd Ave.
78th/Padden Parkway	78th St./76th St., Padden Parkway	Lakeshore Ave.	Ward Rd.
99th Street	99th St.	Lakeshore Ave.	St. Johns Blvd.
28th/18th Street	28th Street, Burton Rd, 18th Street	Andresen Rd.	164th Avenue
134th Street	134th St./139th St./Salmon Creek Ave.	NW 36th Ave.	WSU Entrance
SR-502	SR 502	I-5	SR 503
SR 501	SR 501	I-5	9th St. (Ridgefield)
La Center Road	La Center Rd.	I-5	E. Fork Lewis Rv.

Figure 1 – Congestion Management Process and Products

CHAPTER II.
SYSTEM MONITORING

This section contains a discussion and display of data information contained in the Congestion Management Process.

Part A consists of the data compiled and collected for the congestion management process and comprised of data that is configured to match the congestion management corridor delineation. Part B consists of other transportation information and data elements that do not necessarily match the congestion management corridors, although in some cases makes use of the data developed in Part A. Part C includes a summary of the corridor trends between year 2000 and 2010. Part D uses shorter segmental transportation data included in Appendix A. Part D identifies specific areas with congestion concerns.

The primary cause of congestion is an imbalance between transportation demand and available capacity. The difficulty in defining congestion is that congestion varies by how people accept delay. One simple definition of congestion is the delay of travel in excess of what is normally experienced under light traffic conditions. Four related factors that are often used to quantify the severity of traffic congestion include duration, extent, intensity, and reliability.

There are many sources of congestion including bottlenecks, traffic incidents, bad weather, construction, poor signal timing, and other events. The source of congestion can vary from one corridor to another, such that the strategies to improve capacity must be tailored to each corridor.

This report attempts to measure and quantify average weekday AM and PM peak period "congestion" consistently across the congestion management corridors, through the use of performance measures.

The congestion management process has evolved to incorporate time-based and other multimodal measures to improve knowledge regarding the operation of the transportation system and the characteristics of regional travel.

A. CONGESTION MANAGEMENT CORRIDORS

1. VEHICLE VOLUMES

AM and PM peak hour vehicle volumes were compiled from the regional traffic count database. Volumes represent traffic counts within each corridor and provide a good comparison of the relative difference in travel demand among the congestion management corridors.

Peak hour traffic volumes for the congestion management corridors are delineated by four volume range categories. These categories are intended to provide a regional picture of travel flows for the Clark County region.

PM peak hour trends are similar to AM peak hour; although, most congestion management corridors carry higher volumes during the PM Peak.

Map 7, Page 21: During the PM peak, I-5 and I-205 and portions of SR-14 and SR-500 display volumes greater than 3,000 vehicles per hour. Within the region, facilities carrying more than 1,500 vehicles in the PM peak hour include segments of SR-14, SR-500, SR-503, Mill Plain, Fourth Plain, Andresen Road, 164th Avenue, 78th Street, Padden Parkway, and 134th Street.

The corridors with the highest peak hour volume difference (at least 500 additional vehicles) between the AM and PM peak include: I-5, Main Street, Andresen Road, Mill Plain Boulevard, and 78/76th Street. Main Street is the only corridor with the AM peak more than 500 vehicles higher than PM peak.

2. CORRIDOR CAPACITY RATIO

The corridor capacity ratio is an aggregation of the volume/capacity ratios for the individual general-purpose segments that make up a facility within a corridor. The corridor capacity ratio is calculated for both the AM and PM peak hours and for the peak directions of travel within a corridor. For each segment in a corridor, the volume/capacity ratio, vehicle miles traveled, and vehicle miles traveled weighted by volume/capacity ratio (the product of the volume/capacity ratio and vehicle miles traveled) for the peak hour are calculated. The corridor capacity ratio is the sum of the weighted link ratios.

Map 8, Page 22: Both the AM and PM periods show congestion along major facilities such as I-5 South, I-205 South, SR-14, SR-503 South, SR-500 West, and 18th Street. Much of the AM period congestion can be attributed to the demand for crossing the two Interstate bridges into Oregon. Generally, the PM period displays higher corridor congestion than that experienced in the AM period. The main exception includes Main Street. On Main Street, congestion can be attributed to morning commuters using Main Street as an alternative to the congested I-5 corridor.

Map 9, Page 23: In the PM period, additional congestion is shown along, SR-503 North and Fourth Plain East.

Map 10, Page 24: In addition to existing corridor capacity ratio, the 2030 PM corridor capacity ratio was calculated using the regional travel forecasting model (December 2007 MTP). The model shows where future corridor congestion will occur even with planned transportation improvements. Generally, the 2030 MTP shows a worsening of congestion. With PM congestion in the I-5, I-205, Main Street, Andresen, 112th Avenue, SR-503, 162nd/164th Ave., Mill Plain East, Fourth Plain East, 18th Street, SR-502, and La Center Road Corridors. The 2030 model shows that planned transportation improvements positively impacting future corridor capacity.

3. CORRIDOR TRAVEL SPEED

Travel time data is collected annually. The data is collected using global position units (GPS) and by driving corridors as many times as possible during peak periods (6:30-8:30 a.m. and 4:00-6:00 p.m.). Travel speed is computed from the travel time data. It consists of utilizing the travel time and distance to calculate the average travel speed in the peak period for through movements.

In general, facilities with multiple at-grade controlled intersections display lower speeds. While grade-separated facilities show much faster speeds. Usually, the PM period displays lower corridor speed than that experienced in the AM period.

Map 11 & 12, Pages 25-26: Corridor travel speed continues to be a problem that becomes worse each year. As development occurs, corridor travel speed continues to decline. One concern is regional facilities that have a travel speed below 25 mph, which may encourage trips to divert to alternate routes. During the AM period, I-5 South, Main Street, Andresen South, SR-503 South, and 136/137/138th Ave. display average speeds below 25 mph.

In the PM period, corridors with travel speed below 25 mph include Main St., Highway 99, St. Johns, Andresen, 112th Ave., 136/137/138th Ave., 164th Ave.

South, Mill Plain, Fourth Plain, and Burton Road.

4. SPEED AS PERCENT OF SPEED LIMIT

Travel speed was converted to a percent of posted speed limit for each of the congestion management corridors. This was intended to provide another measure of the delay along the corridor.

As development occurs along the corridors, travel speed often decreases because of congestion, multiple driveways, and additional traffic signals. One of the difficulties is in balancing access to land uses and maintaining the throughput travel speed of arterials.

The speed percentages for the freeway facilities are generally close to 100% of the posted speed limit. While facilities with multiple signalized intersections and driveways are generally between 65% and 80% of the posted speed limit.

Map 13, Page 27: In the AM period, I-5 South, SR-503 South, and 136/137/138th Avenues operate at less than 65% of the posted speed.

Map 14, Page 28: In the PM period, Highway 99, 112th Avenue, St. Johns/Ft. Vancouver, Andresen, 136/137/138th Avenue, Fourth Plain, Mill Plain East, SR-500, 78th/76th Street all operate at less than 65% of the posted speed.

5. INTERSECTION DELAY

The delay at an intersection, for the through movement, was recorded as part of the PM travel time. Delay time represents the period of time travel speed is below 5 mph due to the intersection control. The delay time at an intersection was averaged for the multiple travel time runs. Intersections with an average delay time of greater than 45, 60, and 90 seconds were identified as a location of delay along a corridor. This delay is only calculated for through movement on the congestion management corridor and does not include delay associated with left turns or cross street traffic.

Map 15, Page 29: Generally, intersections that displayed a 45 second or greater delay, for the average through movement on a CMP corridor, were located where two major arterials intersect. Map 14 displays the location of the 57 intersections that demonstrated this characteristic. Of these intersections, 22 had an average delay between 60-89 seconds and 2 had an average delay greater than 90 seconds. The largest delay was at the 18th Street and 112th Avenue intersection which was under construction at the time. With the implementation of a number of signal timing improvements, year 2010 was the first year that showed an overall decrease in intersection delay since this performance measure was added to the report. Delay at these intersections adds to the overall travel time and increases congestion at these locations.

In addition to intersection delay, delay can also occur at freeway off ramps, where high volumes of traffic are loaded onto the arterial system. This can create a significant problem when traffic backs onto the freeway. Locations known to experience this characteristic in the PM peak include northbound I-205 off ramp to SR-14, Mill Plain, SR-500, and eastbound SR-14 off ramp to 164th Av. In the AM Peak, backups can occur on SR-500 and SR-14 ramps to I-5 South, and Padden Parkway, SR-500, and SR-14 ramps to I-205 South.

6. AUTOMOBILE OCCUPANCY

Average automobile occupancy is calculated by observing passenger cars at a given location and the number of people in each vehicle. The number of people divided by the number of passenger cars is the average automobile occupancy for that location. Trucks, buses, and other

commercial vehicles are excluded from average automobile occupancy. Data is collected for the AM and PM time periods. (**Table 2**)

Table 2
Average Automobile Occupancy by Time of Day

Facility Type	AM	PM
[1]Freeway	1.12	1.18
Arterial	1.13	1.24

1*Freeway includes I-5, I-205, SR-14, and SR-500*

The AM time period displays a lower average automobile occupancy, with the AM average automobile occupancy at 1.13 persons per vehicle. The PM average automobile occupancy rate is approximately 1.21 persons per vehicle.

It may be that the AM peak period is more of a traditional commute time, while the PM peak period likely has a greater percentage of discretionary trips such as shopping where drive alone trips are less prominent.

7. Truck Percentage

Collected traffic counts include several locations that classified vehicles according to the number of axles. This is a measure of trucks as a percentage of all vehicles traveling on the roadway. Trucks are defined as vehicles with more than two axles, such as typical tractor/trailer rigs, traveling on the roadway during the peak period. It is important to note that trucks often travel outside peak periods to avoid congestion.

Map 16, Page 30: Overall, I-5, I-205, SR-14 East, SR-501 (Pioneer St.), SR-502, SR-503, and Fourth Plain/Mill Plain west of I-5 display the highest percentage of truck volumes during the PM peak period with truck percentages greater than 4 percent. I-5 North has a truck percentage above 12%.

In the AM Period, the percentage of trucks are generally higher. I-5 North, I-205 Central, and Fourth Plain/Mill Plain west of I-5 all display percentages above 8%.

8. Transit Seat Capacity Used

Transit capacity used includes transit riders divided by the transit capacity at a defined location. Transit seat capacity represents the percentage of seats that are occupied during the two-hour peak period. C-TRAN uses an automated ridership collection system on their vehicles. RTC compiled this data at a specific location in each corridor to calculated bus capacity based on the vehicle type and frequency of service. This process has allowed for the estimation of transit patronage and capacity for congestion management corridors.

Map 17, Page 31: Generally, in the PM Peak period the number of available seats is higher to accommodate more transit riders. In the PM period 5 corridors utilize more than 75% of the available seat capacity, while 14 corridors utilized more than 50% of the available seats. In the PM period the Fourth Plain west of I-5 used the highest percentage of available seats at 102%.

9. Transit Seats As Percentage of Lane Capacity

This measure is intended as a planning analysis tool. It utilizes the transit seat capacity data to calculate transit seat capacity as a percentage of vehicle capacity per lane on the congestion management corridors. It provides a picture of how much transit service is in a corridor in relation to the road capacity and presents an idea of the potential of transit to mitigate or manage auto demand in a corridor.

Map 18, Page 32: The PM map shows that the I-5, Main St., Highway 99, Fourth

Plan, and 164th Ave. have the highest percentage of transit seats due to the high level of service in these corridors. In contrast, SR-500 central, I-205 North, Padden Parkway, and 192nd Avenue have no bus service during the two-hour PM peak period.

B. Other Transportation Measures

1. Highest Volume Intersections

Table 3 displays the highest volume intersections in 2009. It is based on the total number of vehicles entering an intersection on an average weekday. At-grade intersections along SR-500, Mill Plain, SR-503, and Padden Parkway dominate the list.

Table 3 - Highest Volume Intersections

Rank	East/West	North/South	Volume
1	Mill Plain	Chkalov Dr.	80,000
2	Fourth Plain	SR-500	71,000
3	SR-500	St. Johns Rd.	67,000
4	SR-500	54th Ave.	62,000
5	Padden Pkwy	SR-503	58,000
6	SR-500	42nd Ave.	58,000
7	Mill Plain	136th Ave.	57,000
8	Padden Pkwy	Andresen Rd.	54,000
9	Fourth Plain	Andresen Rd.	52,000
10	134th St.	20th Av./Hwy 99	50,000
11	78th St.	Highway 99	49,000
12	Mill Plain	164th Ave.	48,000
13	Mill Plain	123rd/124th Av.	48,000
14	SR-502	SR-503	47,000
15	76th St.	SR-503	46,000

2. Columbia River Bridge Vehicle Volumes

A good indicator of change to bi-state travel is the amount of vehicle travel across the Columbia River bridges. **Table 4** shows the historical growth in Columbia River bridge crossings since 1980.

Daily bridge traffic volumes have been maintained at Columbia River bridges since 1961. The Interstate Bridge carried approximately 33,500 vehicles a day in 1961. Volumes had increased to over 108,000 vehicles a day by 1980. With the opening of the Glenn Jackson Bridge in late-1982, total Columbia River crossings had increased to 144,000 vehicles a day by 1985. By 1995, total river crossings had more than doubled compared to 1980 with 222,700 crossings. By 2005 Columbia River crossings peaked at 278,500. Since 1961, average total bridge crossings have only decreased twice (1974 and 2006-2009).

The Interstate Bridge reached capacity during peak hours in the early 1990's. Glenn Jackson Bridge traffic volumes began to exceed the Interstate Bridge traffic volumes on a daily basis in 1999. Interstate Bridge traffic volumes began to decrease, beginning in 2006, as the corridor became saturated through much of the day.

Table 4 - Average Weekday Traffic Across the Columbia River

Year	I-5	I-205	Total
1980	108,600	N/A	108,600
1985	91,400	52,600	144,000
1990	95,400	87,100	182,500
1995	116,600	106,100	222,700
2000	126,900	132,100	259,000
2005	132,600	145,900	278,500
2010	126,700	145,500	272,200

3. Transit System Ridership

Table 5 provides 2010 annual C-TRAN patronage by type of service. Between 2009 and 2010 total ridership increased 1.9% with minor transit service revisions.

Almost 85% of C-TRAN system ridership was made up Urban fixed route patrons. Followed by commuter service that

carried 10.8% of the total riders, and C-VAN that carried 3.2% of the total riders.

Table 5 - 2010 Ridership by Type of Service

Type of Service	Annual Riders	Percent of Total
Urban/Local	5,578,664	85.1%
Commuter	705,697	10.8%
C-VAN	207,160	3.2%
Events/Other	24,008	0.4%
Connector	19,615	0.3%
Vanpool	17,476	0.3%
Total	**6,552,620**	**100.0%**

Table 6 compares growth in Clark County population with changes to C-TRAN system ridership during the same period. The average annual growth rate in Clark County population since 1985 has ranged from 2.3% to 4.4% per year depending on the time period. Over the same time periods, C-TRAN ridership growth rate has generally been higher than the population growth rate.

Table 6 – Historical Population and Patronage Growth

Year	Population	Annual Growth Rate	System Passenger Trips	Annual Growth Rate
1985	206,744		1,765,423	
1990	238,053	3.0%	2,840,724	12.2%
1995	291,000	4.4%	4,327,291	10.5%
2000	345,238	3.7%	5,437,084	5.1%
2005	391,500	2.7%	5,812,417	1.4%
2010	435,600	2.3%	6,552,620	2.5%

In 2000, the passage of initiative 695 had a significant impact on transit revenue and C-TRAN had to reduce transit service. In 2005, C-TRAN restructured transit fares to increase the proportion that fare revenue contributes to service costs. These changes resulted in a decrease in ridership. In September 2005, voters overwhelmingly supported a sales tax increase to support preservation of C-TRAN service levels and restore service that had been cut following passage of Initiative 695 in 2000.

As a result of the 2007 Service Redesign Study, C-TRAN implemented a number of service improvements in 2007, and opened the 99th Street Transit Center. These service changes, along with high fuel cost, have resulted in significant passenger increases in 2008.

4. Park and Ride Capacity

Park and ride capacity includes lots owned or leased by C-TRAN. In addition to the capacity shown in Table 7, there are informal park and ride and park and pool facilities located throughout the County. Clark County park and ride capacity is shown in **Table 7**.

Table 7 - Clark County Park and Ride Capacity

Facility	Lot Capacity
99th Street	610
Battle Ground	28
Evergreen	279
Salmon Creek	493
BPA Ross	200
Andresen/KMART	30
Fisher's Landing	560
Camas/Washougal	20
Total	**2,220**

5. Transit On-Time Performance

Traffic congestion, station dwell time, wheel chair boardings, and other factors can impact transit vehicle's ability to keep on schedule.

C-TRAN's 2010 On-Time Performance Report showed four routes with the lowest

on-time performance. Routes include Route 37 (Highway 99/Mill Plain), Route 7 (Battle Ground), Route 4 (Fourth Plain), and Route 44 (Fourth Plain Limited). These routes are experiencing a number of factors creating issues with on-time reliability.

C. 2000-2010 TRENDS

1. VEHICLE VOLUMES

Between 2000 and 2010 the region experienced substantial increase in the overall traffic volumes. The overall increase in traffic volumes relates to growth in the regional population.

Several corridors have shown a significant increase in peak hour vehicle volumes. Corridors that had a vehicle volume increase of over 500 vehicles in the PM peak hour include: I-5, I-205 South, SR-14 east of I-205, Padden Parkway and 78th Street. In addition, the 192nd Avenue corridor was added and carries over 1,000 vehicles north of SR-14.

Main Street, I-205 South, Fourth Plain Central, and Padden Parkway had vehicle volume increases of over 400 vehicles in the AM peak. While I-5 South had a reduction in AM peak volume of over 400 vehicles, due to corridor saturation.

2. CORRIDOR CAPACITY

Through the ten-year period, both the AM and PM peak periods had increased congestion along congestion management corridors. However, congestion decreased along corridors where capacity has been added to the system. The change in corridor capacity (volume to capacity ratio) has been especially reflective of road improvements. In the past few years, capacity has been added with transportation improvements along many of the congestion management corridors. Some of the major improvements include:

- I-205 Off ramp to 112th Av.
- I-5/SR-502 Interchange
- St. Johns, NE 50th Av. to 72nd Av.
- 72nd Av., N. of 88th St. to St. Johns
- NE 138th Av., 18th St. to 28th St.
- Fourth Plain in Orchards
- I-5, Main to 99th St.
- Fourth Plain, Ward to 162nd Av.
- 162nd Av., 39th St. to Ward Rd.
- Burton/28th St., 86th Av. to 144th Av.
- 192nd Avenue (Relieves 162nd Av.)
- Padden Parkway
- SR-500/112th Av. Interchange
- SR-500/Thurston Interchange

3. SPEED

In general, a trend between 2000 and 2010 congestion monitoring reports includes decreased speeds along congestion management corridors, with the exception of where the system has been improved. Corridors that had a significant (5 mph or more) decrease in PM peak period speed include: 162nd/164th Ave. North (-12 mph), Fourth Plain/SR-501 (-10 mph), I-205 South (-10 mph), SR-14 central (-9 mph), SR-502 (-8 mph), 112th Avenue (-7 mph), St. Johns/Ft. Vancouver (-7 mph), Highway 99 (-6 mph), 164th Ave. South (-6 mph), and Andresen Rd. South (-5 mph).

Significant increase (5 mph or more) in PM peak period speed occurred in corridors that had transportation improvements since year 2000. This includes SR-500 Central (+22 mph), I-5 Central (+17 mph), I-5 South (+8 mph), Hazel Dell Av. (+5 mph), SR-500 West (+5 mph), and La Center Rd. (+5 mph).

D. AREAS OF CONCERN

Using the individual CMS corridor segment data, areas of concerns were identified. Areas of concern are defined

as segments within an individual corridor that has volume to capacity (V/C) ratio greater that 0.9 or a travel speed 60% or less of the posted speed limit.

1. VOLUME TO CAPACITY RATIO

The volume to capacity ratio identifies road segments where current volumes are approaching road capacity. This limitation on road capacity leads to congestion.

Map 19, Page 33: Most of the AM period volumes to capacity ratio areas of concerns are related to bottlenecks at the two interstate bridges. The AM period shows congestion at portions of I-5, I-205, SR-14, SR-503, Fourth Plain, 72nd Ave., and 18th Street.

Map 20, Page 34: In the PM period, additional volume to capacity ratio areas of concern occurred. The PM period shows congestion on portions of I-5, I-205, SR-14, SR-502, SR-503, Fourth Plain, Andresen Road, 134th Street, Mill Plain, and 18th Street.

2. SPEED

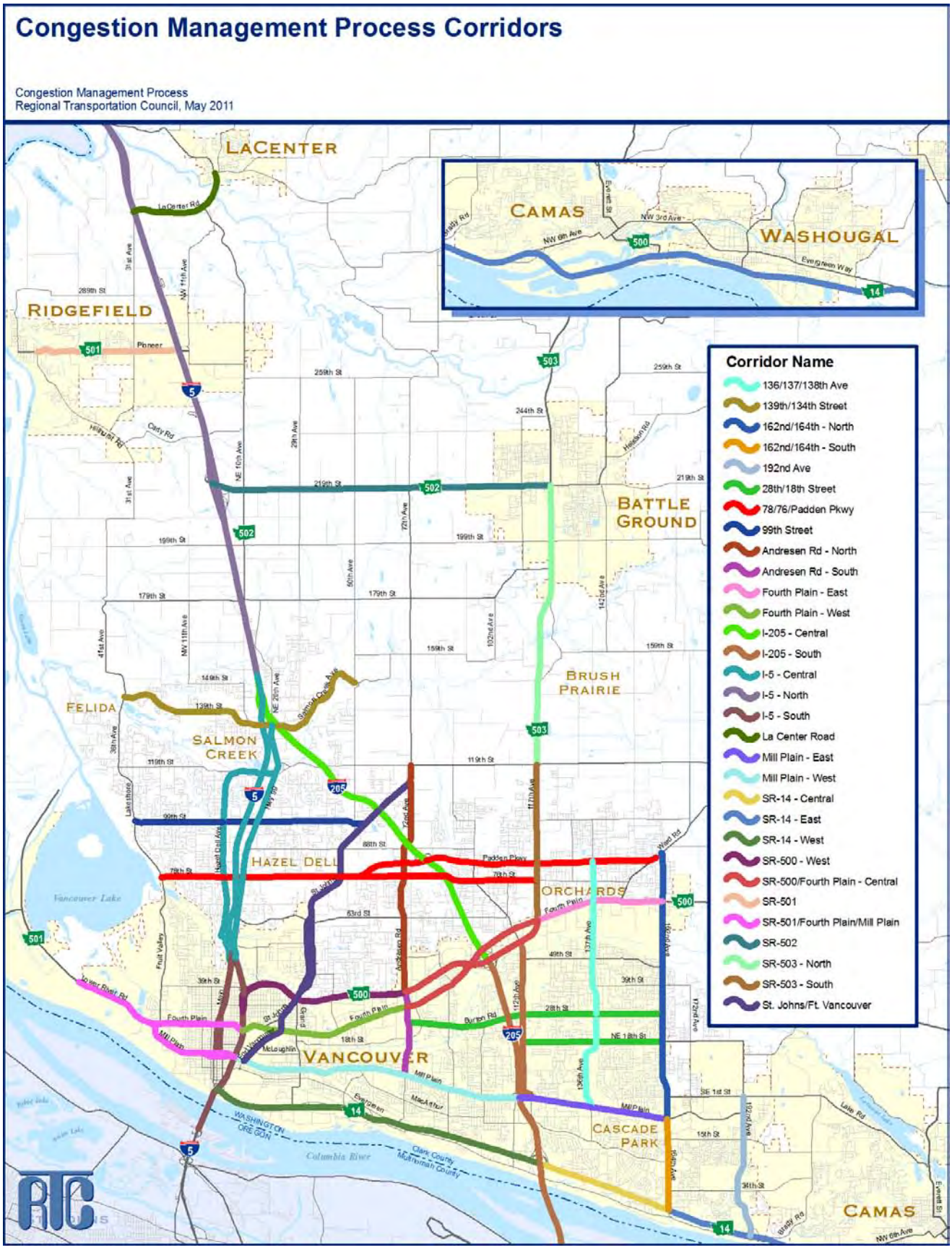
A travel speed lower than 60% of the posted speed limit is an indicator of delay, which can result in congestion.

Often these speed areas of concern correlate with locations within close proximity of multiple traffic signals or intersections that displayed delay greater than 45 seconds.

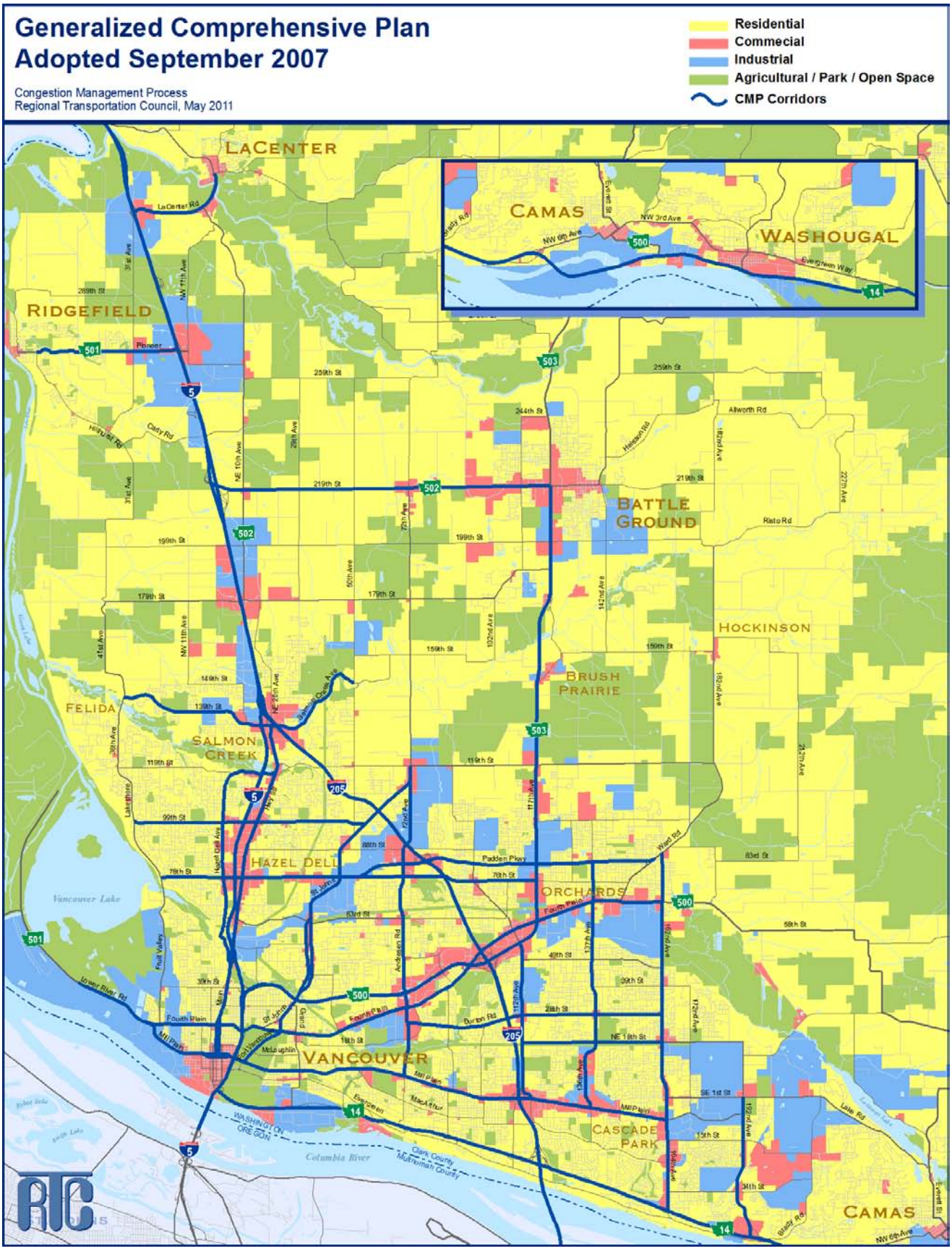
Map 21, Page 35: In the AM period, speed areas of concern occur along portions of I-5, Highway 99, St. Johns, Andresen, 112th Avenue, SR-503, 137th Avenue, Mill Plain, Fourth Plain, 78th Street, Padden Parkway, 99th Street, and 134th Street.

Map 22, Page 36: In the PM period, speed areas of concern occur along portions of most of the congestion management corridors in the Vancouver Urban area, with the exception of grade-separated facilities (I-5, I-205, SR-14, and portion of SR-500).

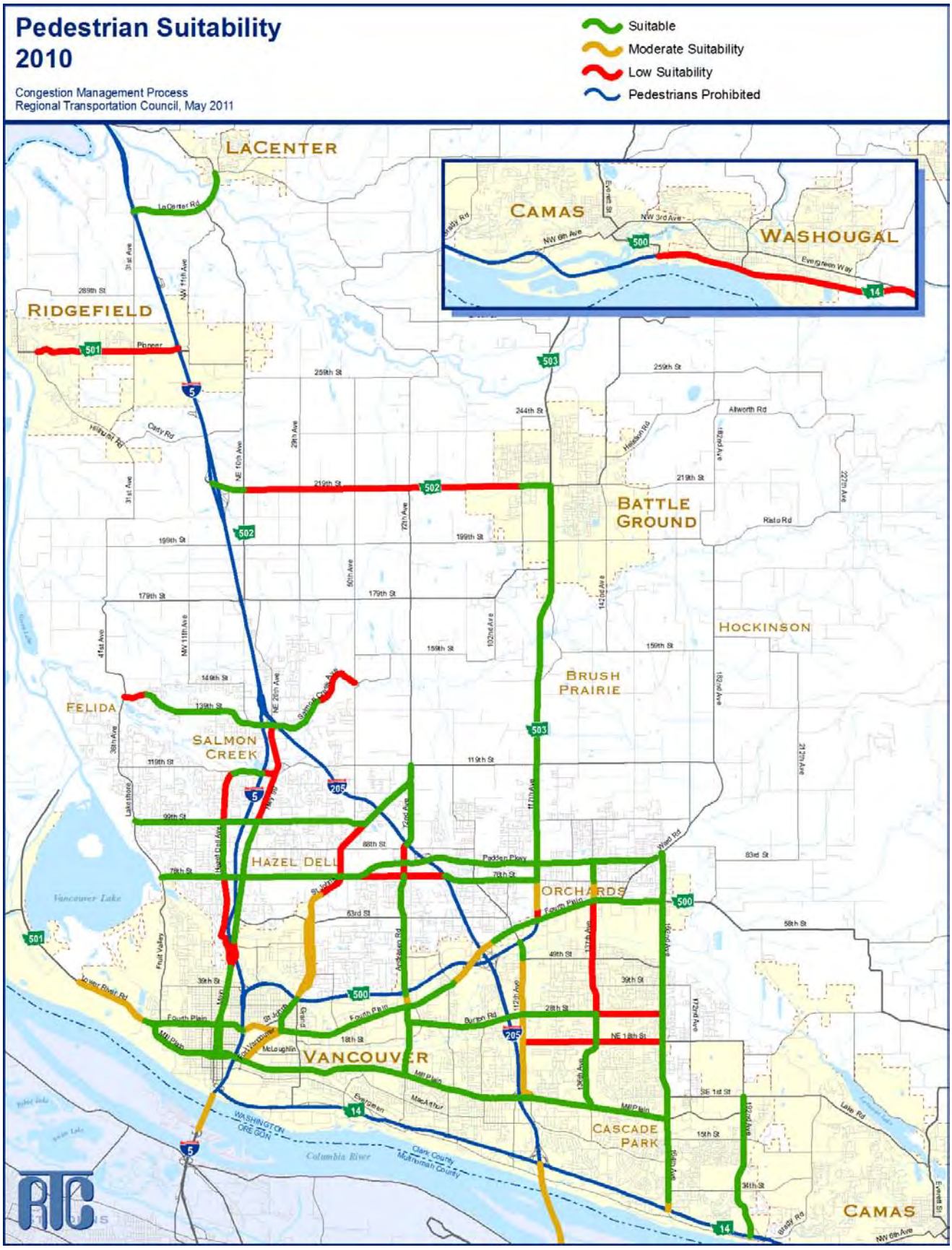
Map 1 – Congestion Management Network



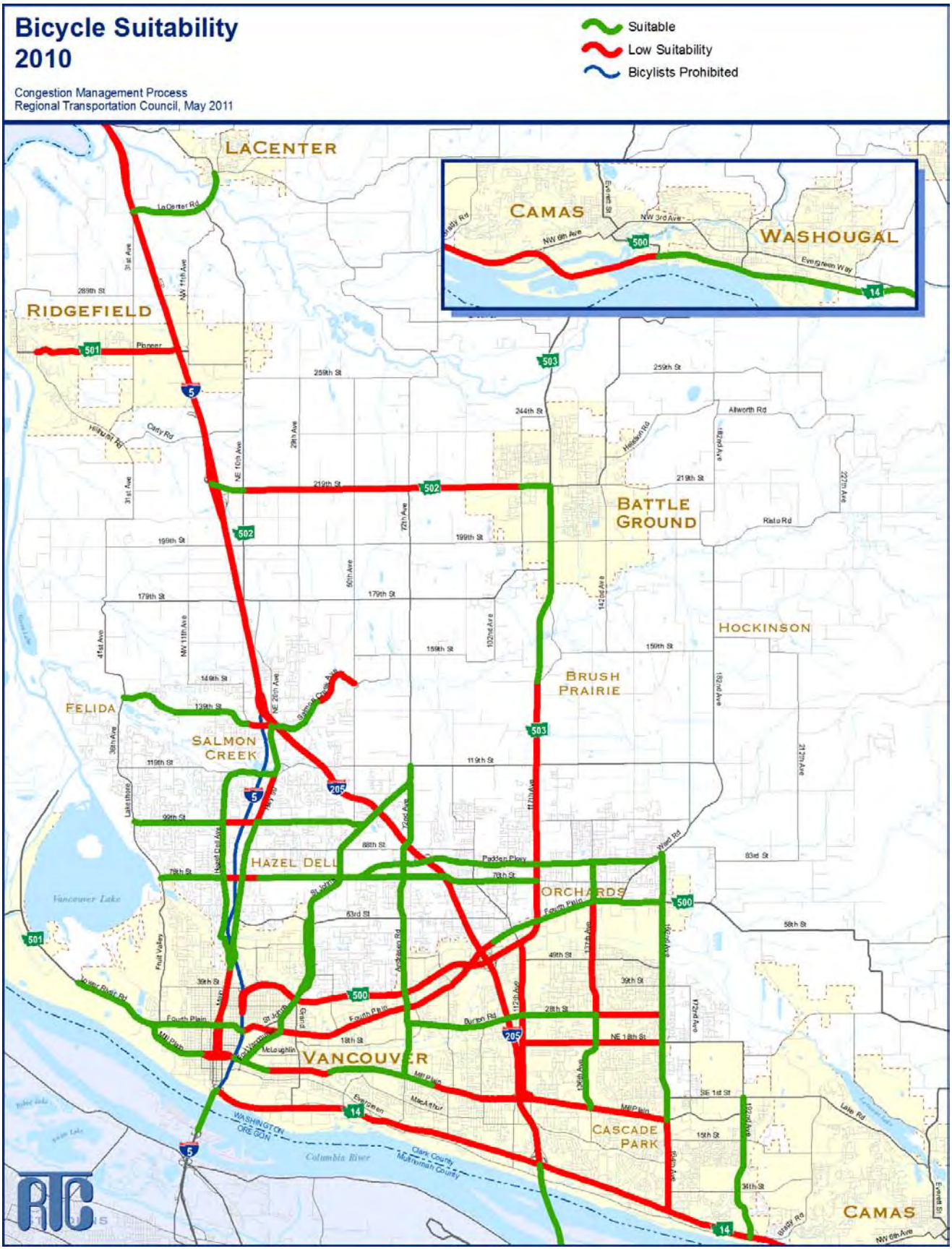
Map 2 – Land Use



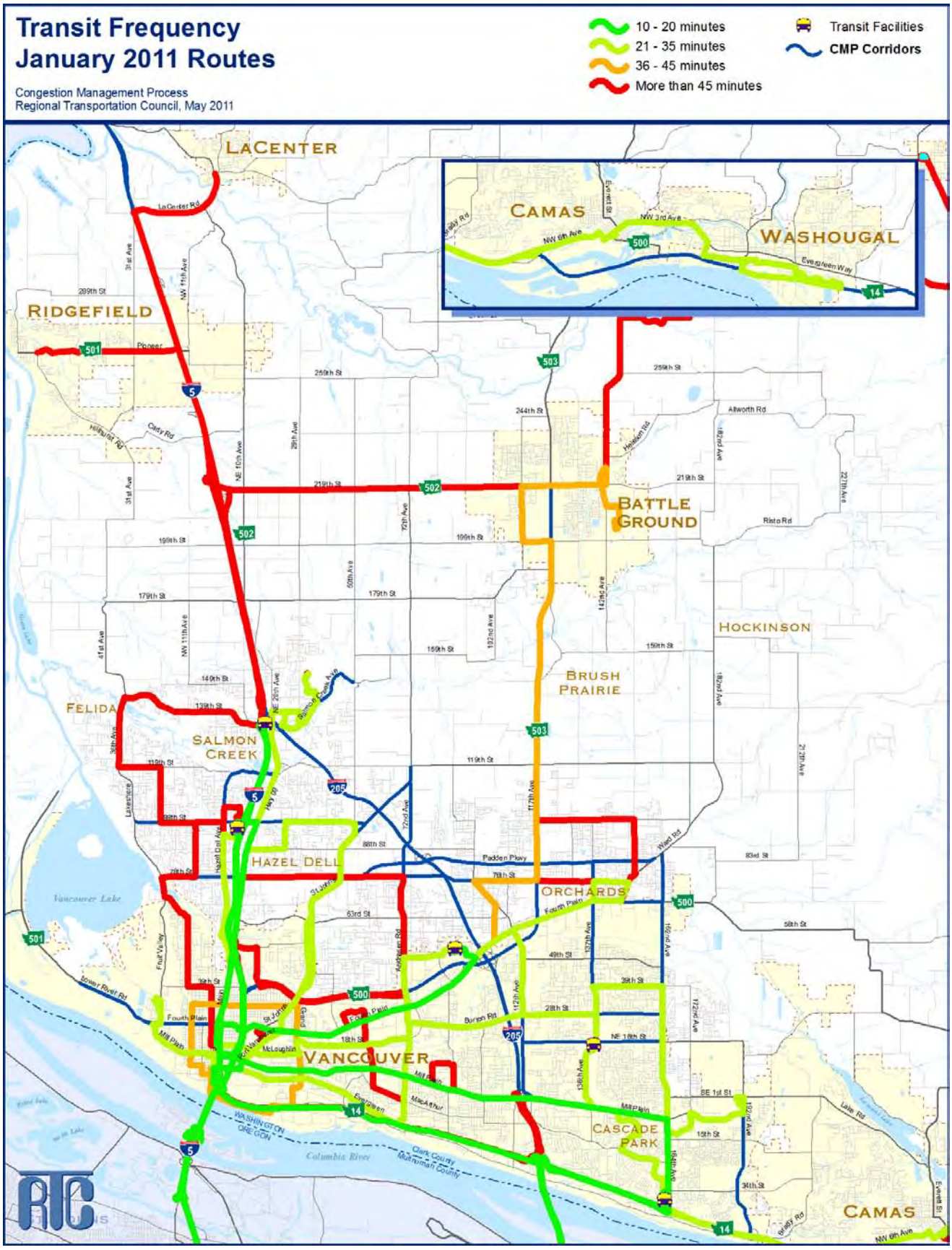
Map 3 – Pedestrian Suitability



Map 4 – Bicycle Suitability

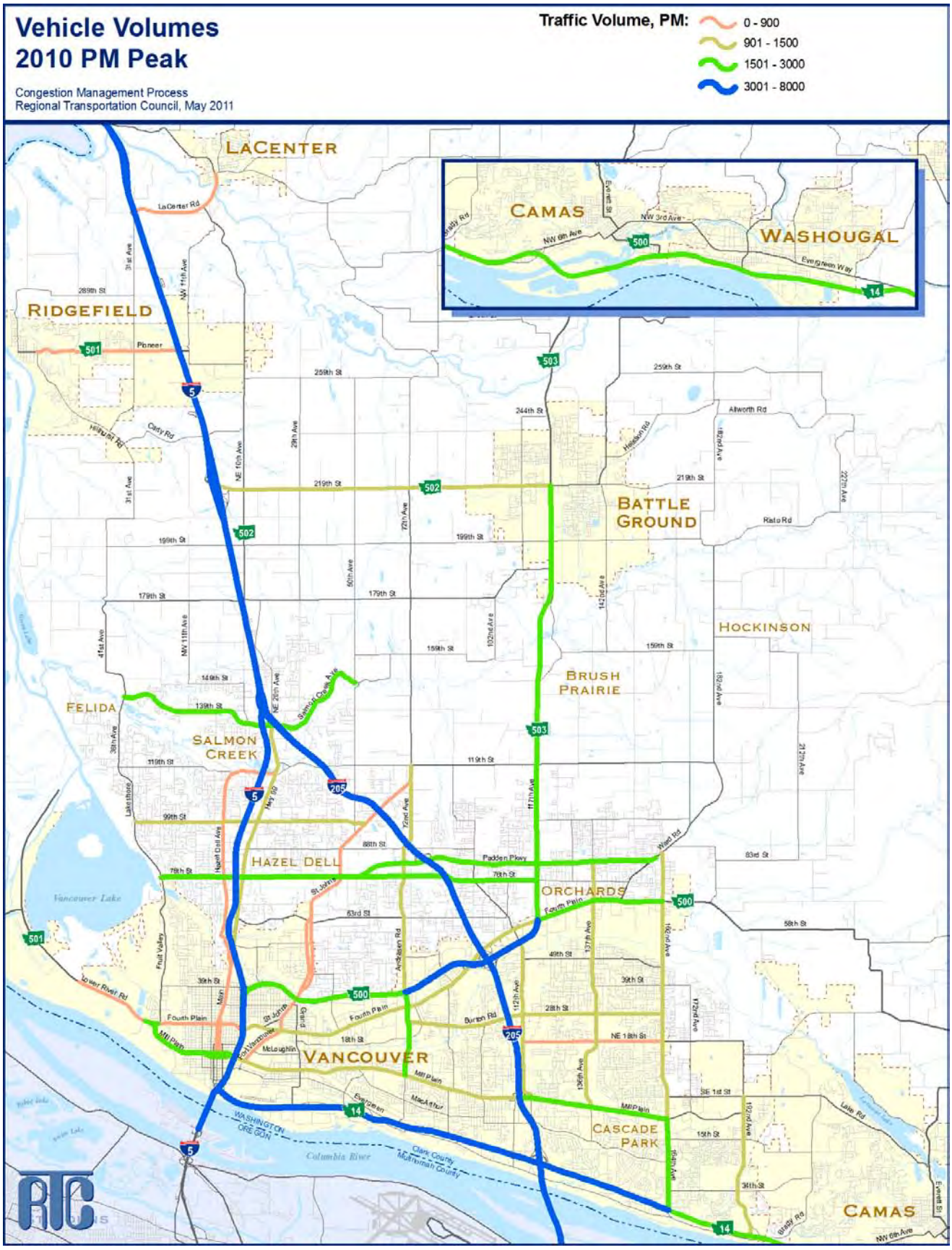


Map 5 – Transit Service and Frequency

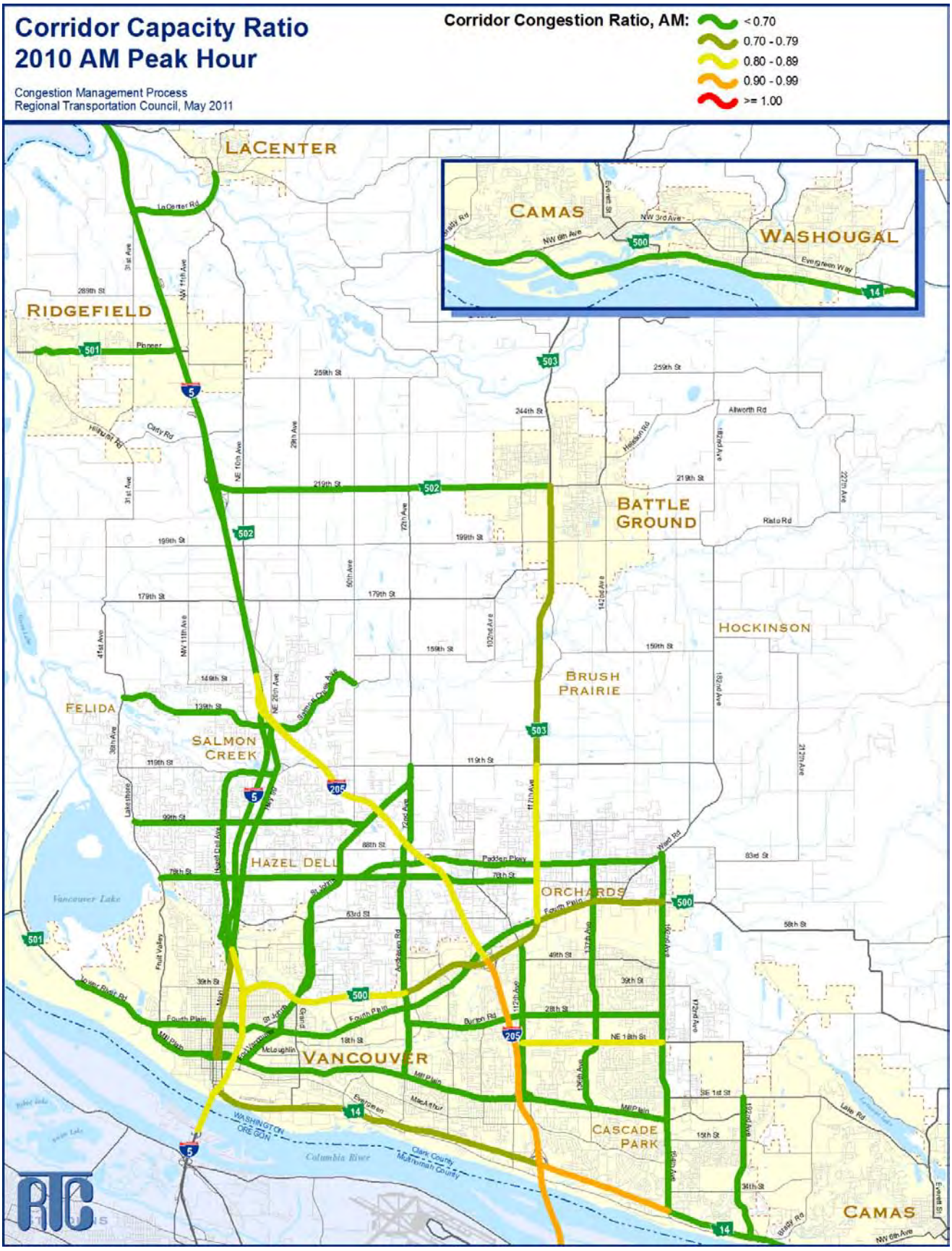


Map 6 – High Collision Intersections

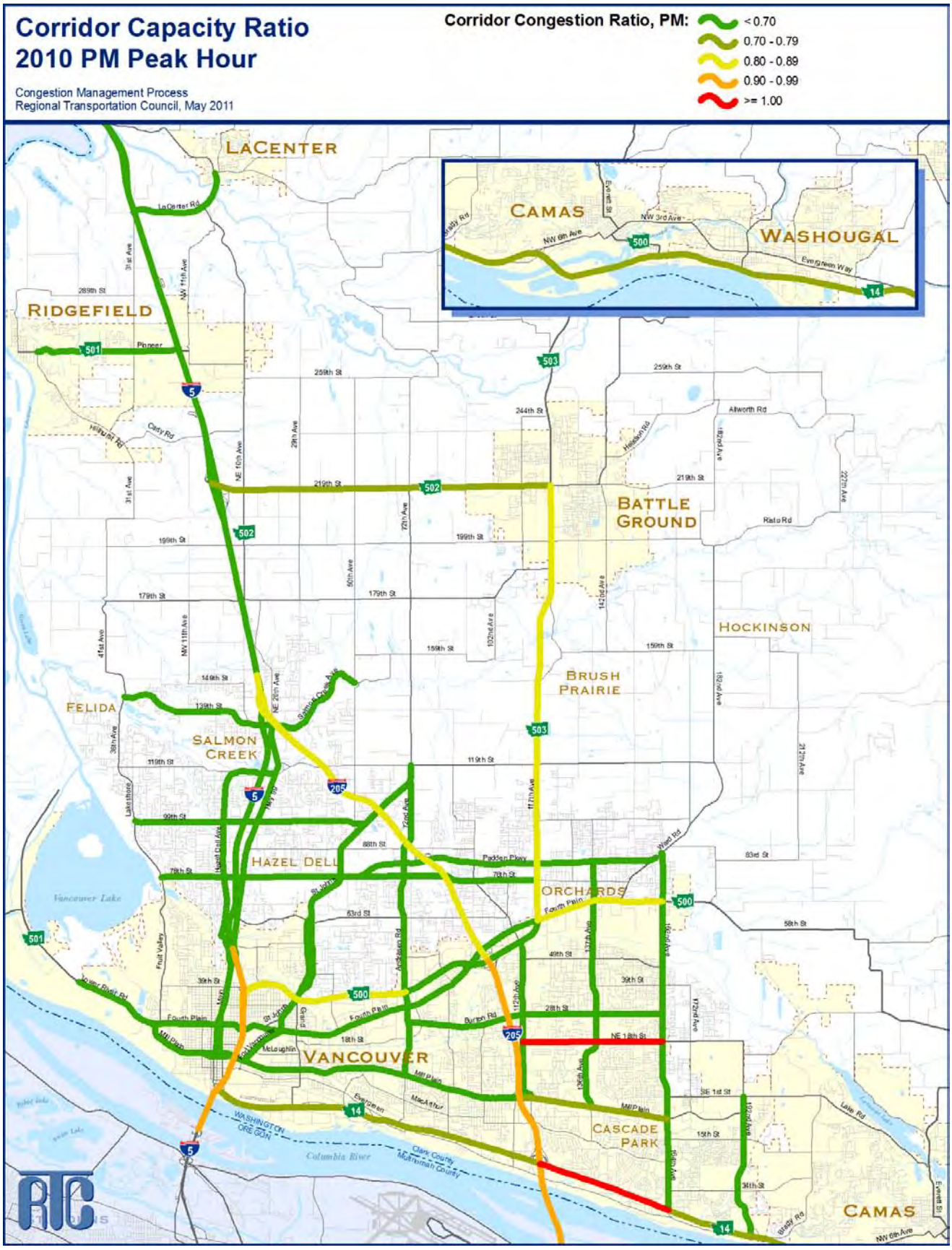
Map 7 – PM Vehicle Volumes



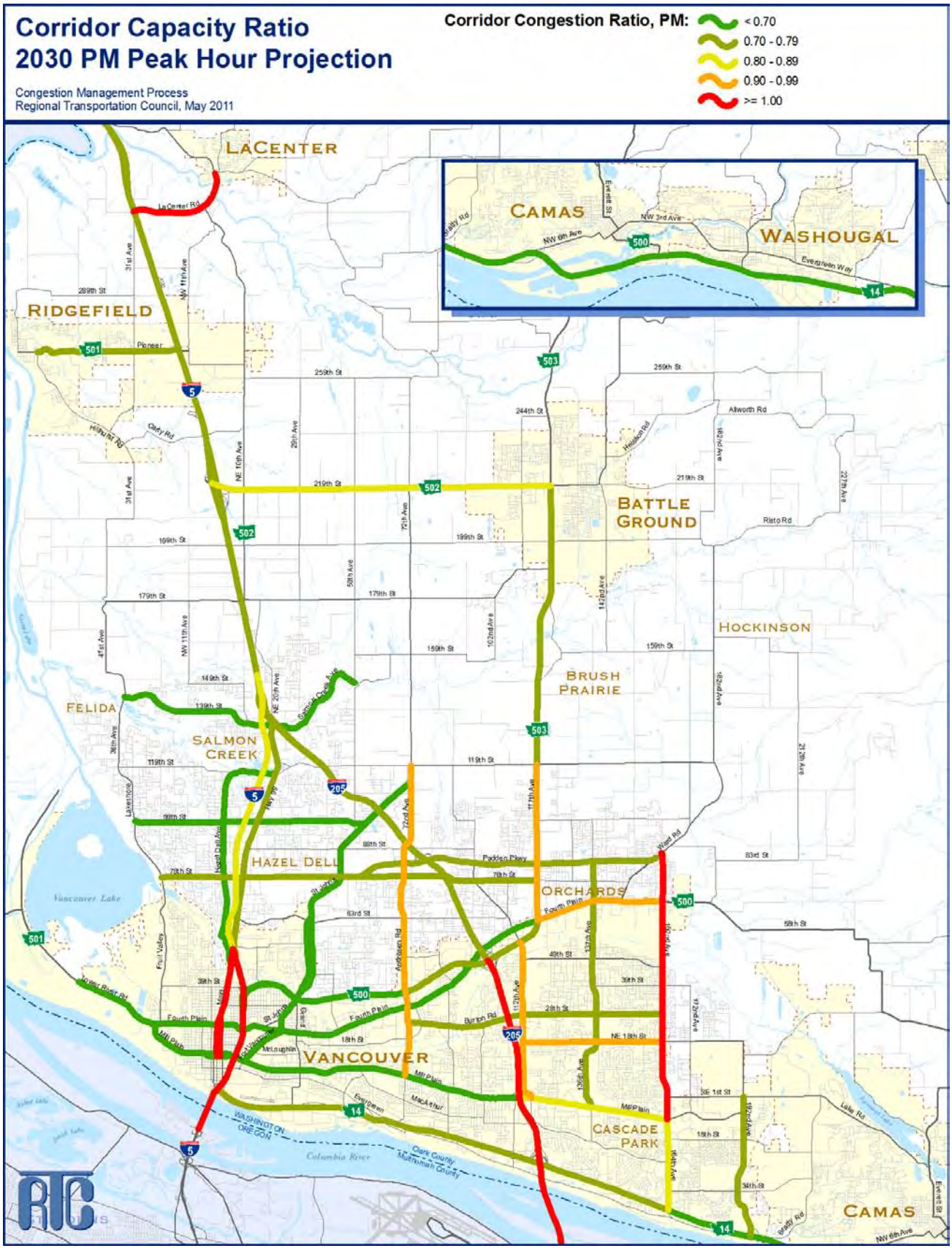
Map 8 – AM Capacity Ratio



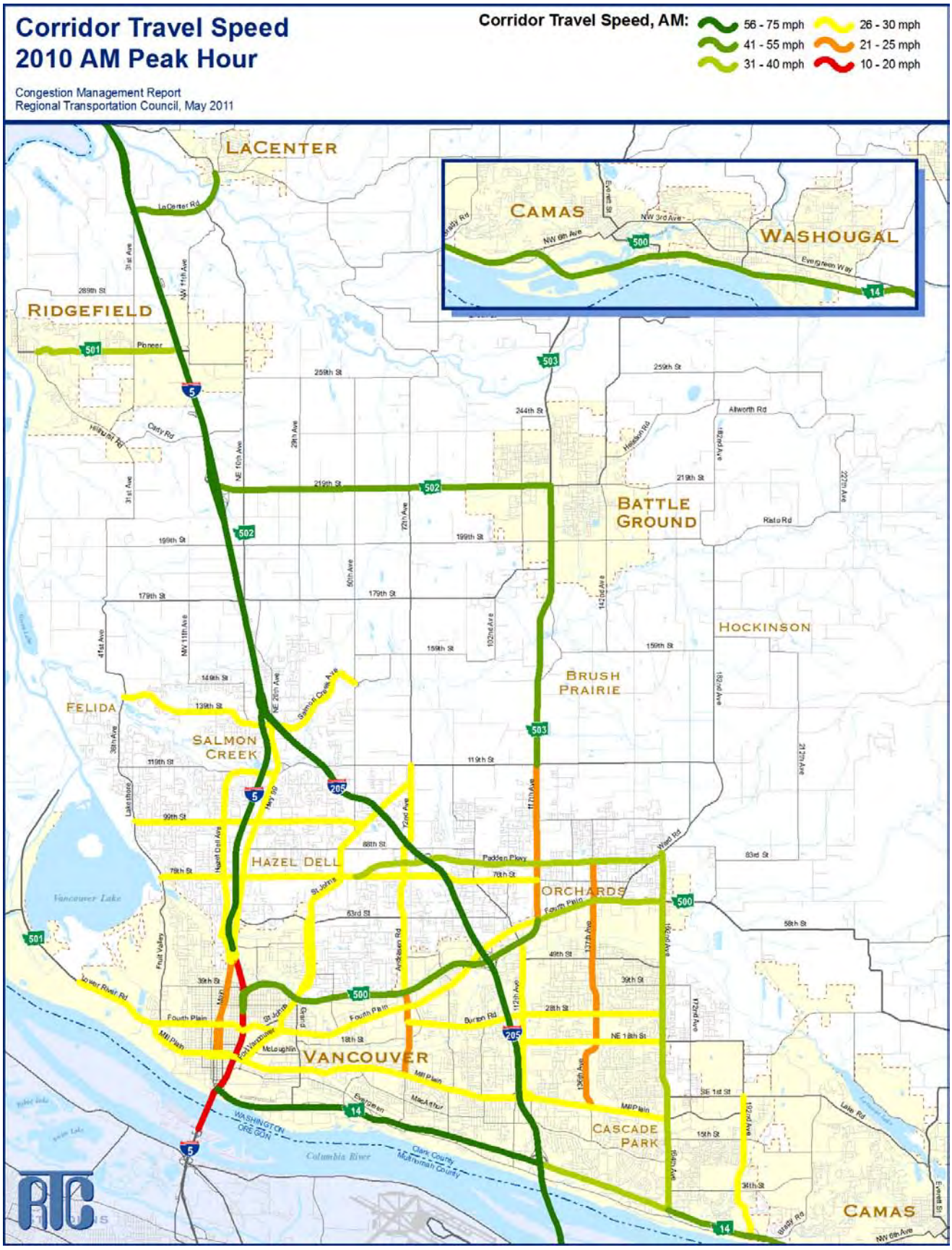
Map 9 – PM Capacity Ratio



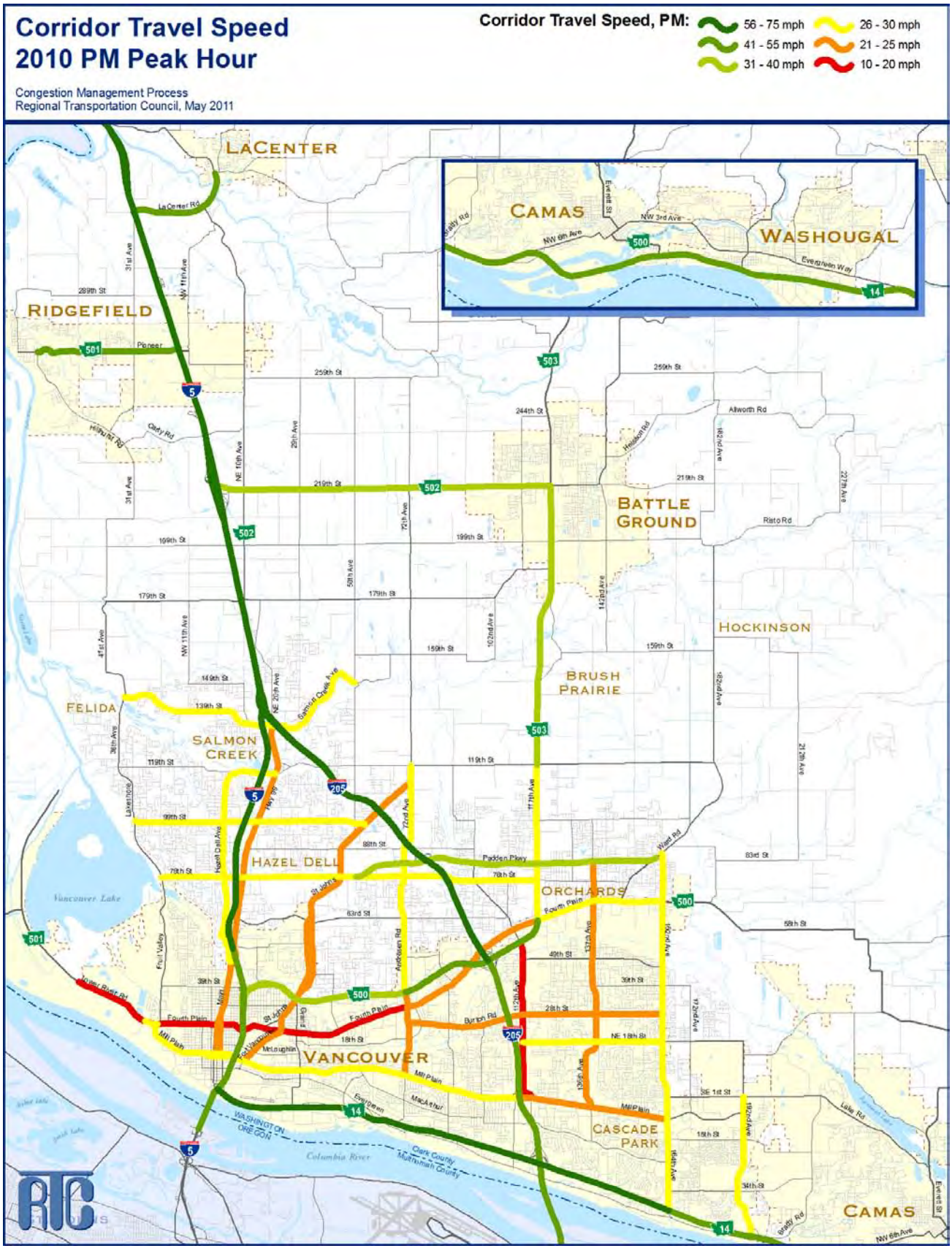
Map 10 – 2030 PM Capacity Ratio



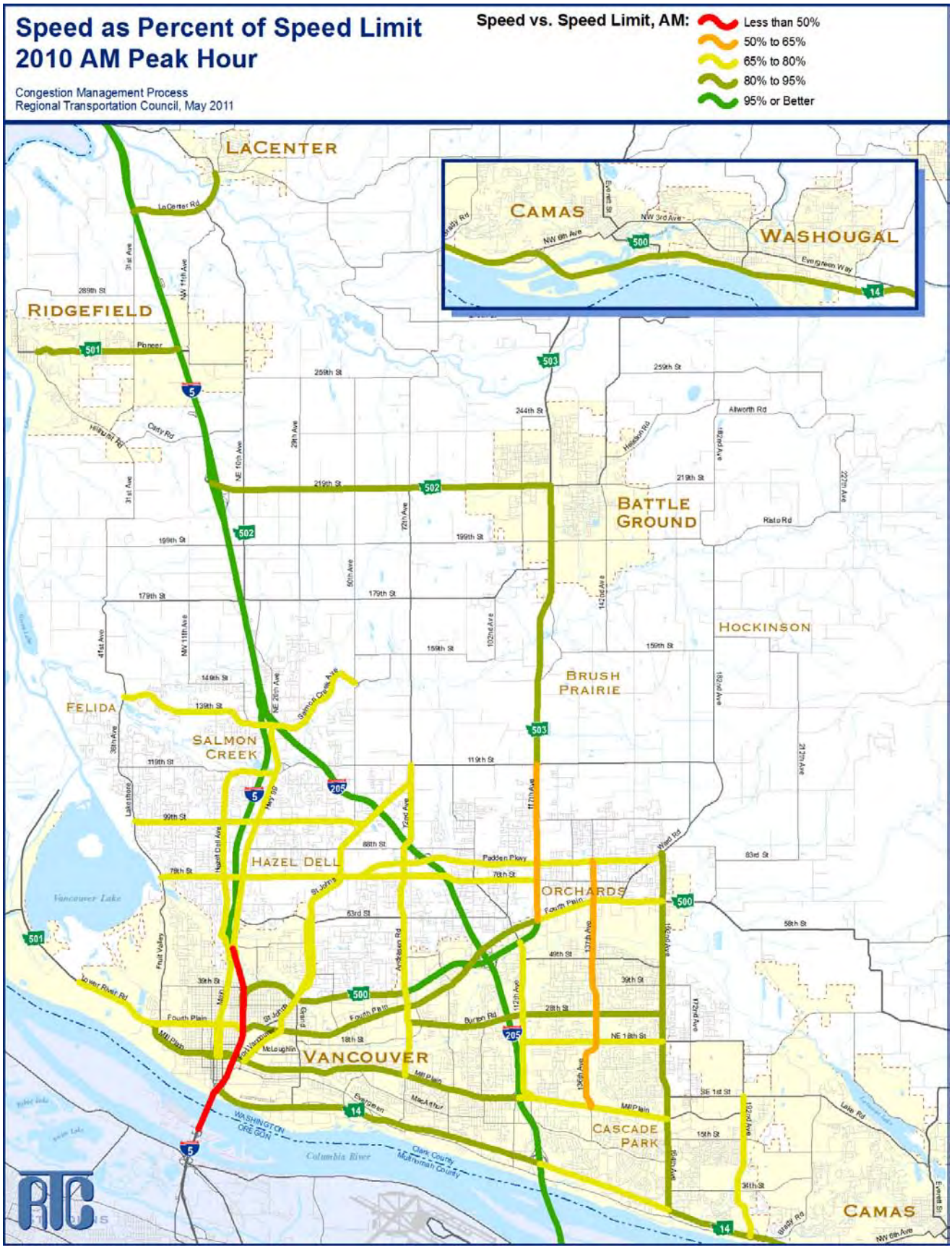
Map 11 – AM Corridor Travel Speed



Map 12 – PM Corridor Travel Speed

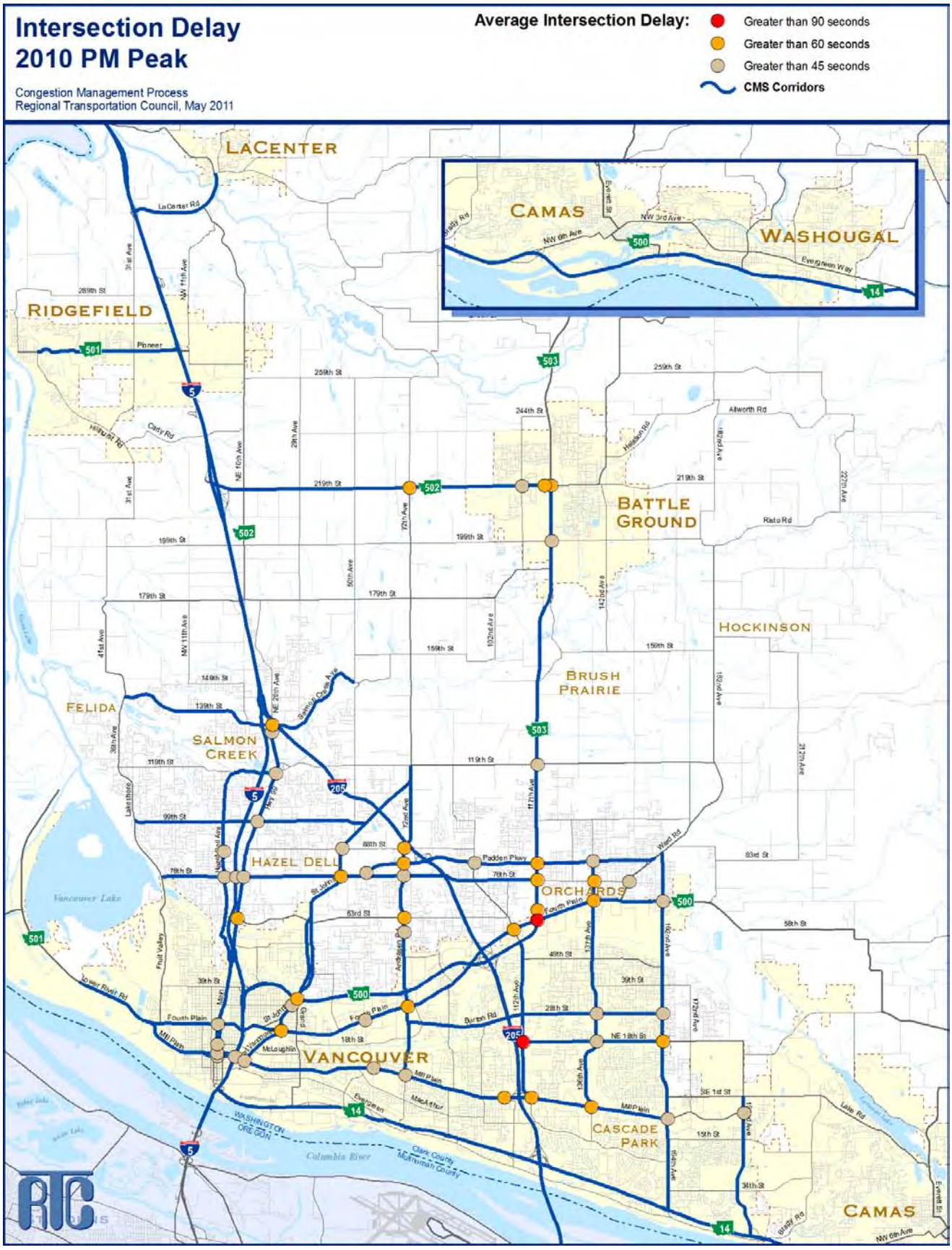


Map 13 – AM Speed as Percent of Speed Limit



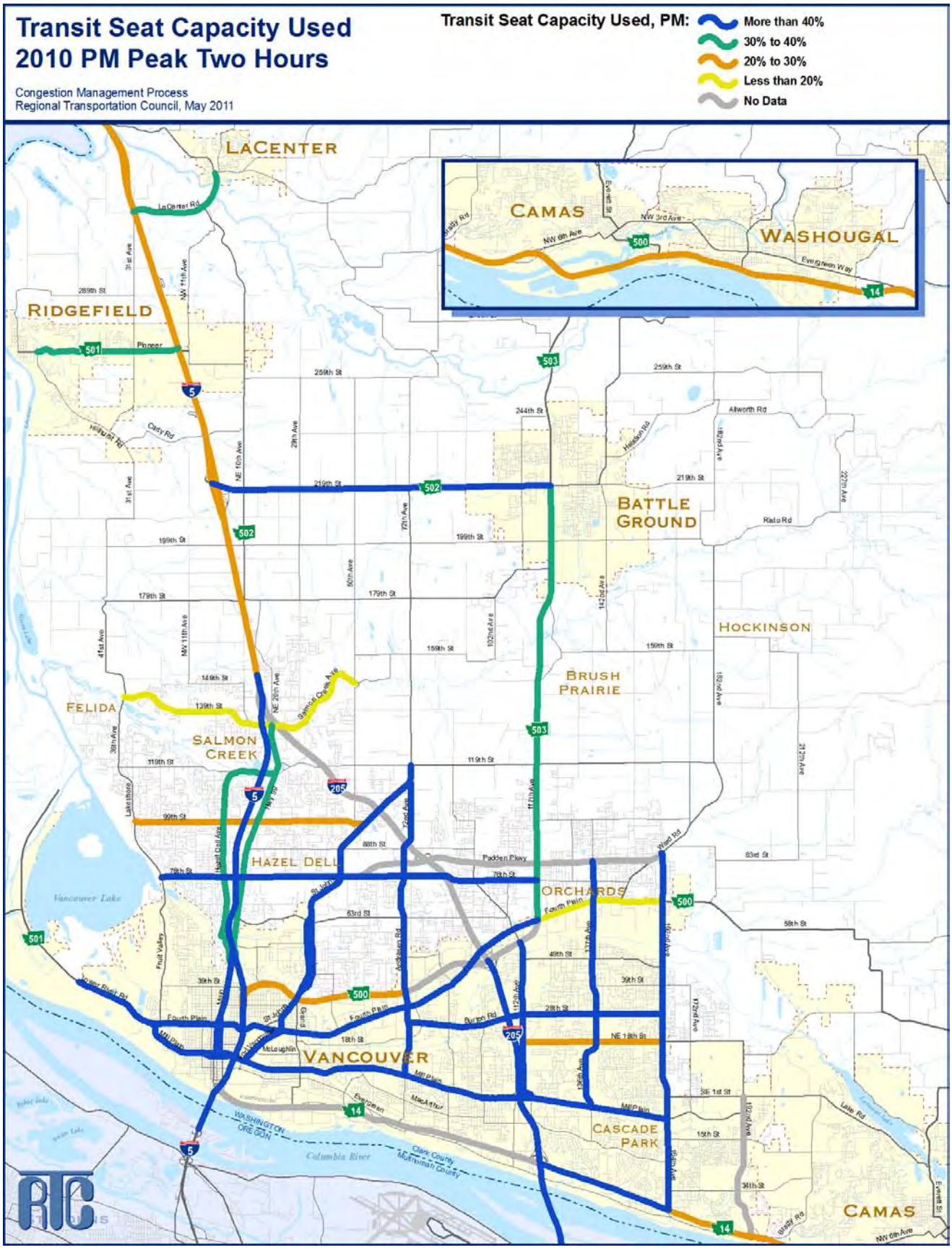
Map 14 – PM Speed as Percent of Speed Limit

Map 15 – PM Intersection Delay

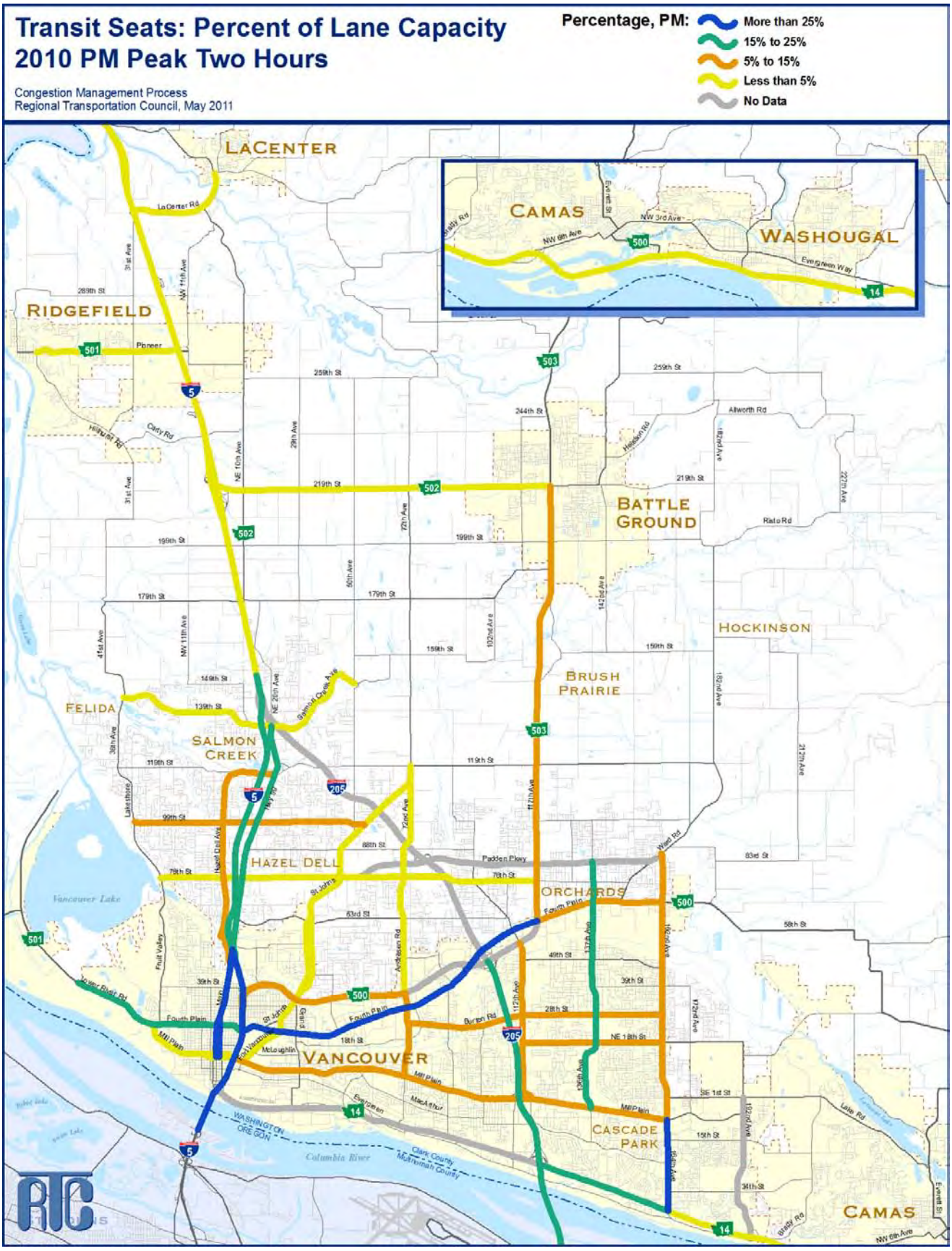


Map 16 – PM Truck Percentage

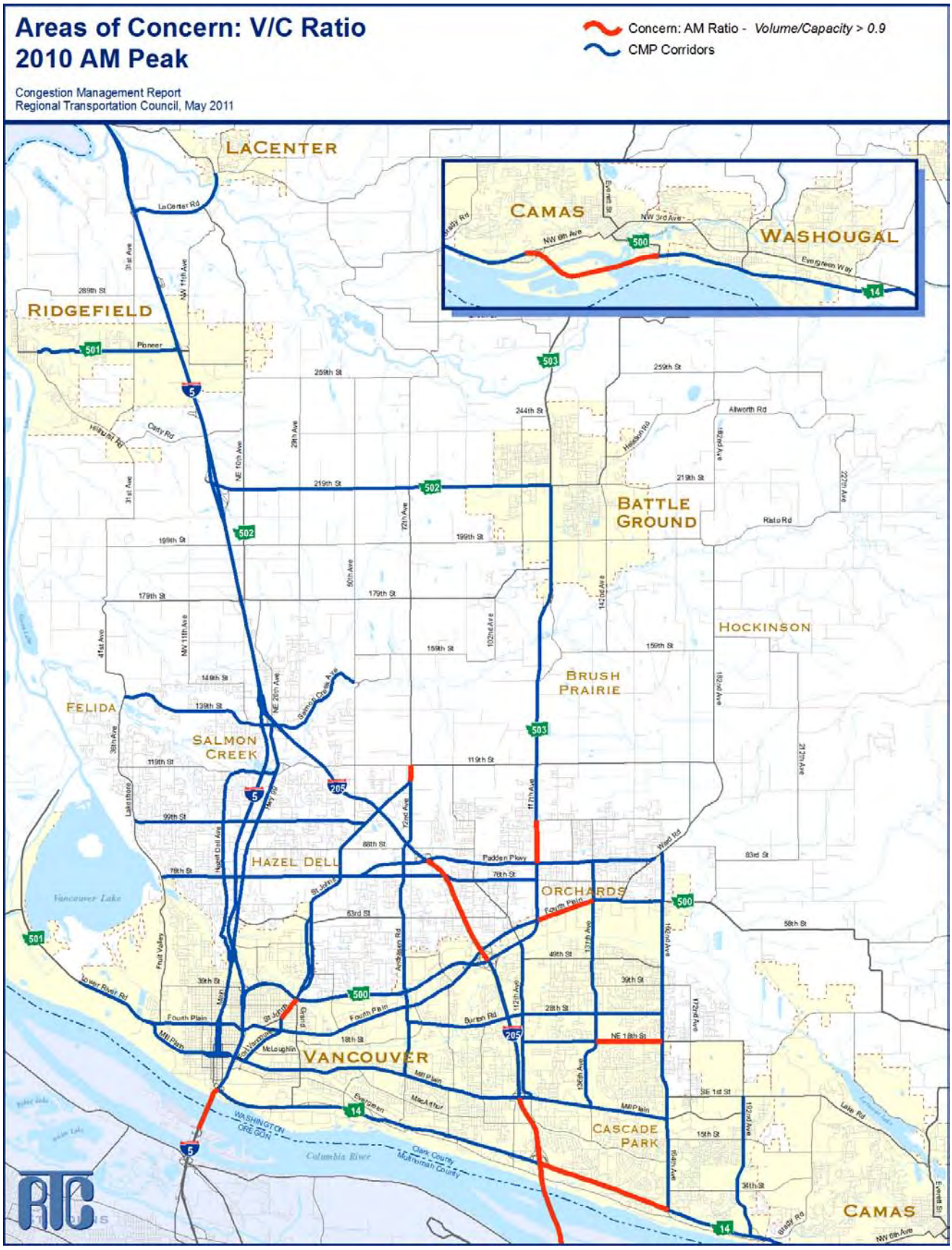
Map 17 – PM Transit Seat Capacity Used



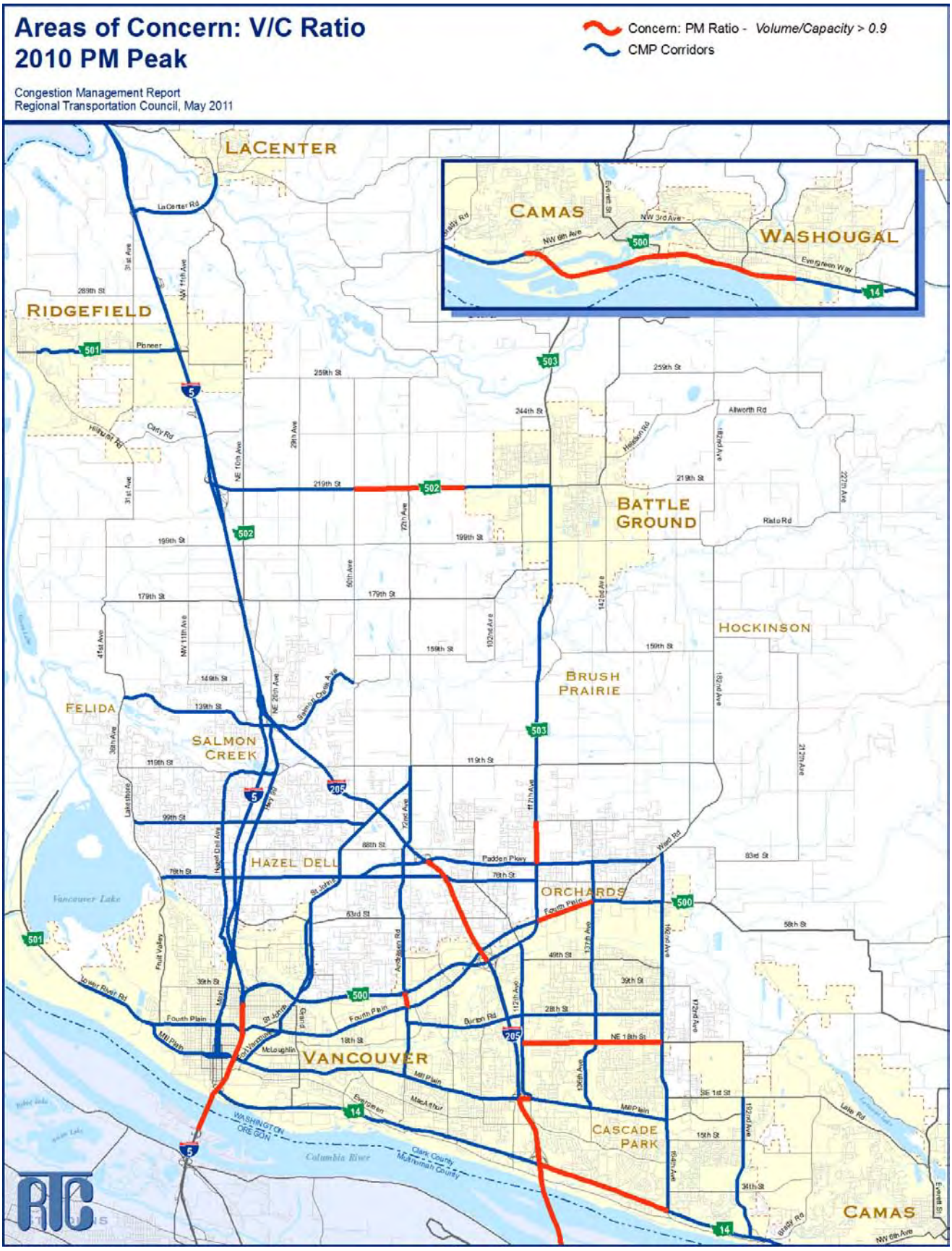
Map 18 – PM Transit Seats as Percent of Lane Capacity



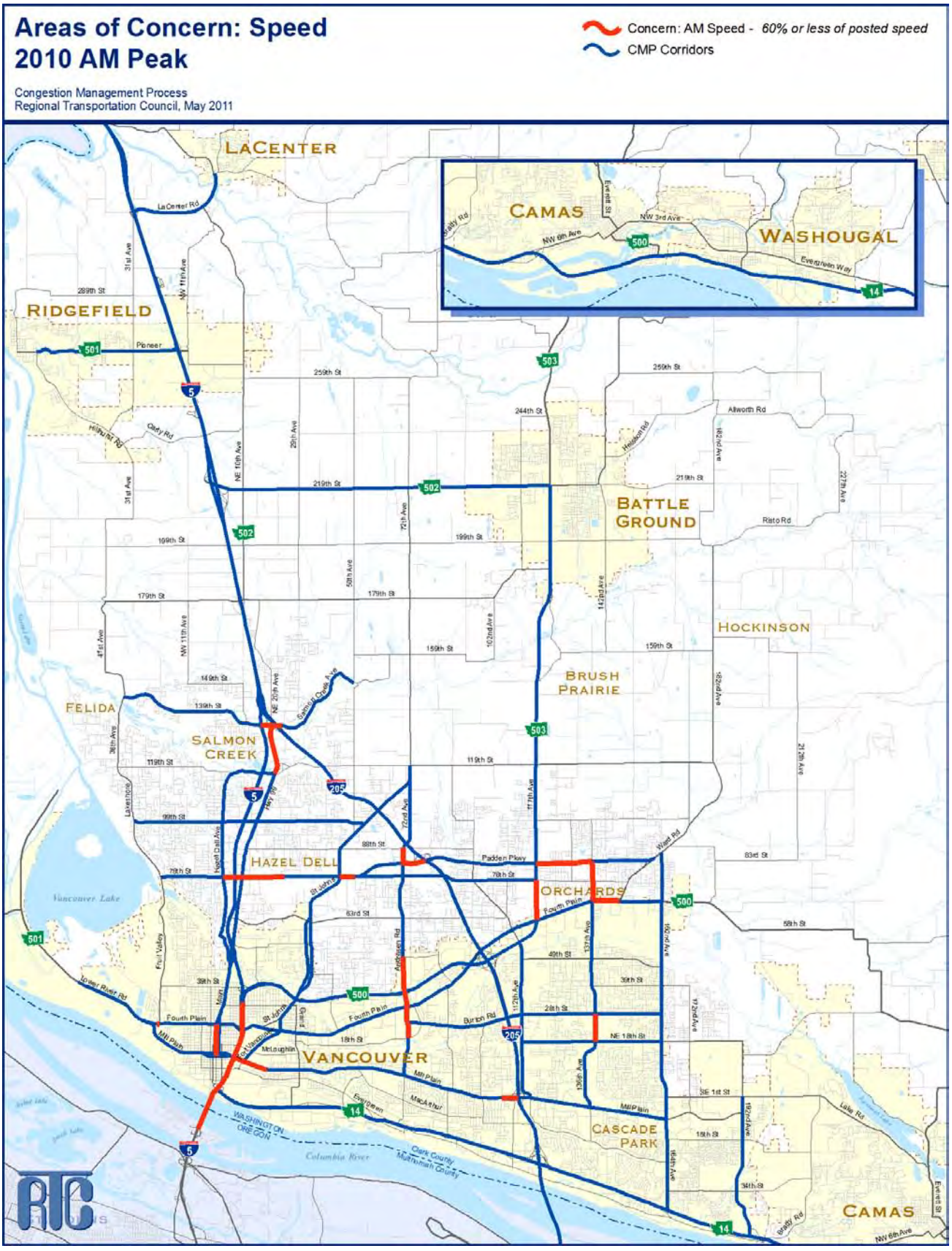
Map 19 – AM Areas of Concern: Volume to Capacity Ratio



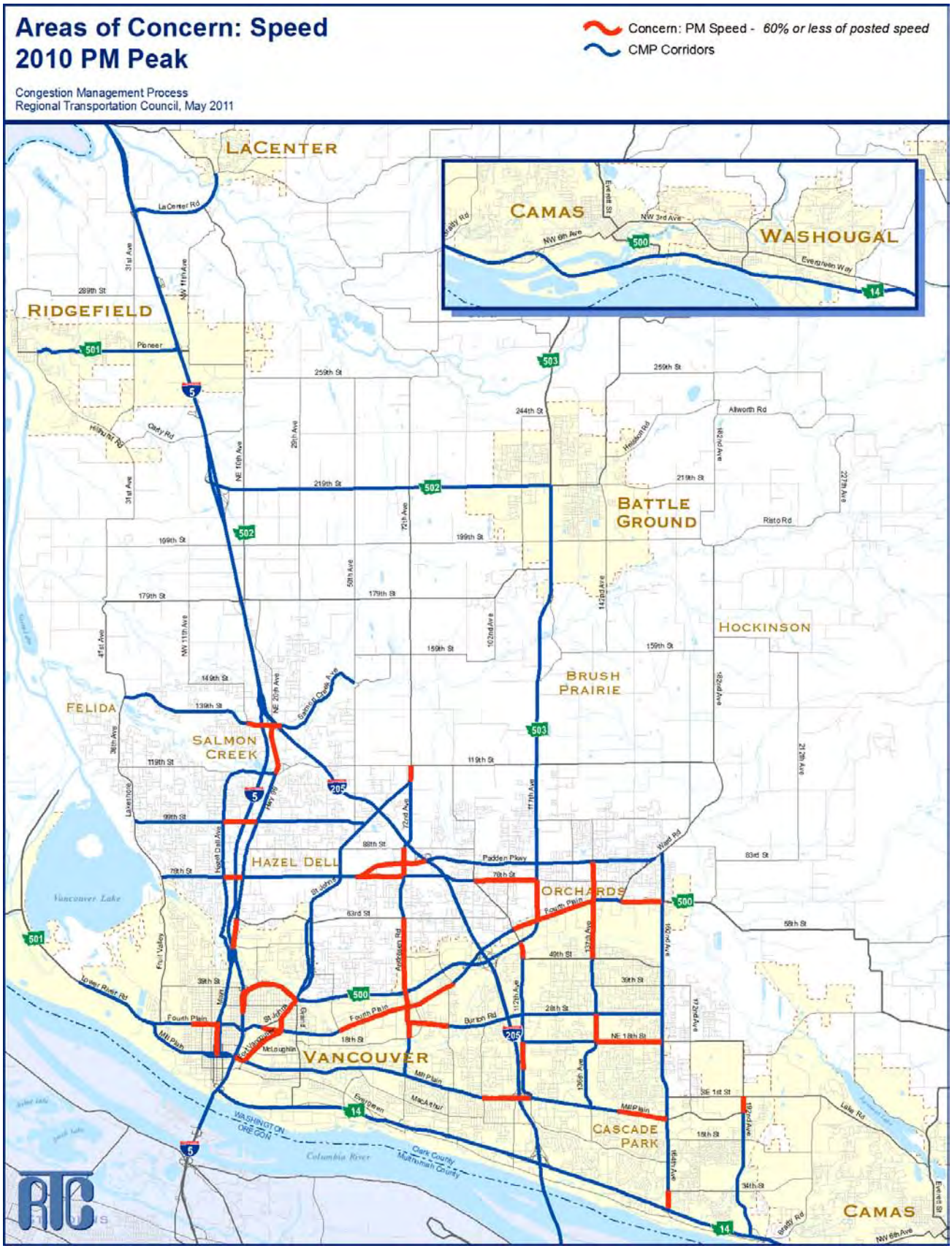
Map 20 – PM Areas of Concern: Volume to Capacity Ratio



Map 21 – AM Areas of Concern: Speed



Map 22 – PM Areas of Concern: Speed



CHAPTER IV.
STRATEGIES

RTC's Congestion Management Process includes a performance management system that informs needed capital investments, such as road, transit, bike, and pedestrian improvements; as well as demand and system management strategies to improve the performance on congestion management corridors. As a cost-effective approach to manage congestion and improve reliability, the region has developed a Transportation System Management and Operations Plan (TSMO). The TSMO Plan incorporates Intelligent Transportation System (ITS) and other low-cost transportation solutions to reduce congestion.

Southwest Washington Regional Transportation Council (RTC) is involved in a number of transportation Planning efforts intended to address congestion.

A. TRANSPORTATION PLANNING EFFORTS

The Congestion Management Process is a primary component in RTC's regional transportation planning process. Of the multiple planning documents that address congestion, the most prominent is the **Metropolitan Transportation Plan** for Clark County (MTP). The plan is designed to be a guide for the effective investment of public funds for regional transportation needs. The region uses a wide range of data to develop a regional travel demand forecasting model. The model simulates both current travel demand and also estimates travel demand twenty years into the future. Using the model, the region can identify where future congestion is most likely to occur.

Transportation System Management and Operations (TSMO) Plan is scheduled for adoption in June 2011. TSMO focuses on low-cost, quickly implemented transportation improvements that aim to utilize existing transportation facilities more efficiently. TSMO combines advanced technologies, operational policies and procedures, and existing resources to improve coordination and operation of the multimodal transportation network. This includes traffic signal integration, ramp metering, access management, traveler information, smart transit management, and coordinated incident response to make the transportation system work better.

The **Columbia River Crossing** project is a bridge, transit, and highway improvement project for the purpose of addressing the congestion and mobility problems on I-5 between Washington and Oregon. The CRC Draft Environmental Impact Statement was completed in 2008. The Final Environmental Impact Statement and the Record of Decision is scheduled for release in 2011.

The region completed a **High Capacity Transit System Plan** in 2008. The plan recommends bus rapid transit (BRT) in the Highway 99, Fourth Plain, and Mill Plain corridors and significant bus improvements in the I-205 corridor. Fourth Plain was chosen as the priority corridor. The Plan will serve as a guide for C-TRAN and the communities in Clark County as they move forward with High Capacity Transit.

C-TRAN has begun a Federal Transit Administration **Alternatives Analysis (AA) process in the Fourth Plain corridor**. The AA process is expected to identify the Locally Preferred Alternative

for the Fourth Plain corridor. The purpose of this project is to develop an HCT project that will improve trip reliability, reduce travel time, encourage transit use, and create a catalyst for transit-oriented economic development. The Fourth Plain AA process should be completed by the end of 2012.

The **C-TRAN 20-year Transit Development Plan** is underway and should be adopted in 2010. This planning process is designed to build upon the existing service and develop future operating scenarios for public transit. The plan will incorporate the recommendations of the High Capacity Transit System Plan.

The overall goals of the **CTR program** are to improve transportation system efficiency, conserve energy, and improve air quality by decreasing the number of commute trips made by people driving alone. RTC approved a Regional Commute Trip Reduction Plan and endorsed CTR plans for unincorporated Clark County, Vancouver, Camas, and Washougal. The downtown Vancouver Growth and Transportation Efficiency Center (GTEC) was certified in 2007. The implementation process requires that local jurisdictions, Regional Transportation Planning Organizations, major employers, transit agencies, WSDOT, and the CTR Board work collaboratively.

The **Clark County Freight Mobility Study** provides useful information and analysis designed to inform future metropolitan transportation planning, local comprehensive planning, and project design. Study efforts included an evaluation of freight traffic movement, identification of freight system deficiencies, identified future infrastructure needs, and identified policy issues to support freight mobility in Clark County.

The **Human Services Transportation Plan for Clark, Skamania, and Klickitat Counties** summarizes the transportation needs for people who because of disability, low income, or age have transportation challenges. It also identifies the transportation activities to respond to these challenges.

B. IDENTIFY AND EVALUATE STRATEGIES

Agencies should give consideration to the various strategies identified in this chapter:

System Preservation and Maintenance. One essential strategy is the preservation and maintenance of the roadway, transit, bicycle, and pedestrian system that the region already has.

Safety Improvements. It is vital that the region builds and maintains a transportation system that provides a safe and secure means of travel by all modes.

Roadway Improvements. Potential strategies may include adding additional lanes, adding turn lanes, improving sight distance, adding auxiliary lanes, adding HOV lanes, grade separation, intersection improvements, roundabouts, and upgrade roads to urban standards (with bicycle lanes, sidewalks, and transit amenities).

Transit Improvements. Potential strategies may include increase bus route coverage, increase frequencies, improve transit amenities, additional park-and-ride lots, and implementing high capacity transit.

Bicycle and Pedestrian Improvements. Potential strategies may include new sidewalks, new bicycle lanes, separated pathway and trails, bicycle racks and bike lockers at transit centers and other major destinations, pedestrian oriented development, pedestrian and bicycle safety enhancements.

Transportation Demand Management. Potential strategies may include alternative work hours, telecommuting,

ridesharing, vanpools, and growth and transportation efficiency centers.

Transportation System Management and Operations (TSMO). Potential strategies may include traffic signal coordination, incident management systems, ramp metering, highway information systems, d advanced traveler information system. Operational improvements should be consistent with the TSMO guidance.

Access Management. Potential strategies may include center medians, consolidation of access points, interchange modification, appropriate intersection and interchange spacing, frontage roads, and collector-distributor roads.

Land Use. Potential strategies may include mixed-use development, infill, increased densities, and transit oriented development.

Parking Management. Potential strategies may include enforcement of existing parking regulations, location specific parking ordinances, and preferred parking for carpool/vanpools.

C. STRATEGY IMPLEMENTATION

RTC's Congestion Management Process provides a tool for monitoring the region's traffic congestion. The CMP provides information to help guide the investment of transportation funding toward improving the lowest capacity ratio and speed deficient roadways. The CMP data can also help direct investment to where capacity improvements versus traffic operational and management solutions would be the most effective.

Maintaining good reliable travel speeds and sufficient capacity in the region will require accomplishing the following objectives:

- Preservation and maintenance of the existing system
- Improving the system performance through operation and management strategies
- Where possible shifting trips to other modes
- Addition of auto capacity at key bottlenecks

These objectives can be implemented through the following strategies:

Preservation Strategies

- Preserve and maintain the transportation system that the region already has.

Safety Strategies

- Implementation of safety improvements, including those supported in the Safety Management Assessment.

System Performance Strategies

- Implementation of the Transportation System Management and Operations (TSMO) Plan recommendations.
- Implementation of the Communication Master Plan.
- Access Management
- Land Use Planning
- Bottleneck Removal

Multimodal Strategies

- Expansion of the public transit system, including High Capacity Transit.
- Expansion of bicycle and pedestrian facilities.
- Implementation of Transportation Demand Management (TDM) strategies.

Capacity Expansion Strategies

- Expand the capacity of transportation system as identified through the regional transportation planning process.

2. TRANSPORTATION IMPROVEMENTS

This section summarizes some of the specific transportation improvements identified in the Metropolitan Transportation Plan, Transportation Improvement Program, and other plans.

Tables 8, 9 and 10 reference Congestion Management Process areas of concern and transportation solutions identified through the planning process. **Table 11** includes other non-corridor specific strategies that have been identified through the planning process.

D. MONITOR STRATEGY EFFECTIVENESS

This report contains the data for the continuing development and updating of information to track the performance of the regional transportation system and implemented strategies.

In assessing the degree to which the CMP strategies address a congestion issues, projects are tracked through the project implementation process and results are reported back to regional technical committees.

Table 8
Road Capacity Improvements
(Areas of Concern: Volume to Capacity Ratio > 0.9)

AM Volume to Capacity Ratio Index Greater Than 0.9					
Jurisdiction	**Peak Hour Volume**	**Corridor**	**Segment**	**Identified Improvement**	**Estimated Completion**
Clark County	850	72nd Av.	119th St. to St. Johns Rd.	TIP: widen to 4 lanes w/intersection Improvements	2012
Vancouver	1,100	St. Johns Rd.	SR-500 - Ft. Vancouver Way	TIP: New SR-500/St. Johns Interchange	2013
WSDOT	1,300	SR-14	NW 6th Av. - Union Rd.	TIP: Widen to 4 lanes with interchange MTP: Camas Slough Bridge	2012 10-20 Yrs.
Vancouver	800	18th Street	138th Av. - 162nd Av.	MTP: Widen to 4 lanes	10-20 Years
Vancouver	1,600	Fourth Plain	117th Av. - 137th Av.	MTP: Intersection Improvements and Access Control	10-20 Years
WSDOT	7,500	I-205	Airport Way - Mill Plain	MTP: Collector/Distributor System	10-20 Years
WSDOT	3,800	I-205	SR-500 - 83rd Street	MTP: Widen to 6 lanes	10-20 Years
WSDOT	5,100	I-5	Jantzen Beach - SR-14	MTP: Columbia River Crossing	10-20 Years
WSDOT	3,500	SR-14	I-205 - 164th Avenue	MTP: Widen to 6 lanes	10-20 Years
WSDOT	1,700	SR-503	Padden Parkway - 99th St.	MTP: Intersection Improvements and Access Control	10-20 Years

PM Volume to Capacity Ratio Greater Than 0.9					
Jurisdiction	**Peak Hour Volume**	**Corridor**	**Segment**	**Identified Improvement**	**Estimated Completion**
Vancouver	900	18th Street	112th Av. - 162nd Av.	TIP: Widen to 4 Lanes, 112th Av. to Four Season MTP: Widen to 4 lanes	2011 5-20 Years
WSDOT	1,300	SR-14	NW 6th Av. - 32nd St.	TIP: Widen to 4 lanes with IC, NW 6th Av. to 6th St. MTP: Camas Slough Br., Widen 6th St. to 32nd St.	2012 10-20 Yrs.
WSDOT	850	SR-502	50th Av. - 102nd Av.	TIP: Widen to 5 lanes	2013
Vancouver	2,700	Mill Plain	I-205 - Chkalov	TIP: I-205/18th Street Interchange	2016
WSDOT	7,500	I-205	Airport Way - Mill Plain	MTP: Collector/Distributor System	10-20 Years
WSDOT	3,500	I-205	SR-500 - 83rd Street	MTP: Widen to 6 lanes	10-20 Years
WSDOT	3,800	SR-14	I-205 - 164th Avenue	MTP: Widen to 6 lanes	10-20 Years
WSDOT	1,800	SR-503	Padden Pky - 99th St.	MTP: Intersection Improvements and Access Control	10-20 Years
WSDOT	6,300	I-5	Jantzen Beach -SR-500	MTP: Columbia River Crossing	10-20 Years
Vancouver	2,000	Fourth Plain	SR-503 - 137th Av.	Strategic MTP: SR-503/Fourth Plain Under Study	20+ Years
Vancouver	1,700	Andresen Rd.	Fourth Plain - SR-500	None: Close proximity to interchange	

Table 9
AM Operational Improvements
(Areas of Concern: Speed < 60% of Posted Speed)

AM Speed 60% or Less of Posted Speed Limit					
Jurisdiction	**Peak Hour**	**Corridor**	**Segment**	**Identified Improvement**	**Estimated**
Vancouver	1,100	Andresen Road	Van Mall - 18th St.	TIP: Signal Optimization Program Andresen/Mill Plain TSMO: Signal upgrade, surveillance	2011 1-10 Years
Clark County	500	Andresen Rd.	Padden Pkwy. - 88th St.	TIP: Padden/Andresen Traffic Signal Optimization TSMO: Signal upgrade, communication, surveillance, data	2011 1-10 Years 10-20 Years
Clark County	1,500	Padden Parkway	Andresen Rd. - I-205	TIP: Padden/Andresen Traffic Signal Optimization TSMO: Signal upgrade, communication, surveillance, data	2011 1-10 Years 10-20 Years
Clark County	900	78th Street	Hazel Dell - NE 25th Av.	TIP: 78th Street Signal Optimization TSMO: Signal upgrade, communications, surveillance	2012 1-10 Years
Clark County	1,100	134th Street	I-5 - I-205	TIP: I-5/Salmon Creek Interchange MTP: Salmon Creek Interchange, Phase II	2014 10-20 Years
Vancouver	1,000	Mill Plain Blvd.	I-205 - 104th Av.	MTP: I-205/18th Street Interchange TSMO: Signal upgrade, surveillance, data	2016 1-10 Years
Vancouver	1,200	Fourth Plain	137th Av. - Ward Rd.	TSMO: Signal upgrades, communications, surveillance	1-10 Years
Vancouver	600	137th Avenue	28th St. - 18th St.	TSMO: Signal upgrade, communication, surveillance	1-10 Years
Clark County	1,000	78th Street	St. Johns Rd. - Padden	TSMO: Signal upgrade, surveillance, data	1-10 Years
Vancouver	450	Main Street	Fourth Plain - Mill Plain	TSMO: Signal upgrade, communications, surveillance MTP: Columbia River Crossing	1-10 Years 10-20 Years
Clark County	500	137th Avenue	Padden - Fourth Plain	TSMO: Signal upgrade, communication, surveillance MTP: Widening 137th Av.	1-10 Years 10-20 Years
Clark County	600	Highway 99	134th St. - 117th St.	TSMO: Signal upgrade, communication MTP: Salmon Creek Interchange Project, Phase II	1-10 Years 10-20 Years
WSDOT	1,300	SR-503	76th Street - Fourth Plain	TSMO: Signal upgrade, communication, surveillance MTP: Intersection Improvements and Access Control	1-10 Years 10-20 Years
Vancouver	700	Mill Plain Blvd.	I-5 - Reserve St.	TSMO: Signal upgrade, communication, surveillance, data	1-10 Years 10-20 Years
WSDOT	800	Padden Parkway	NE 137th Av. - SR-503	TSMO: Communication, surveillance MTP: SR-503/Padden Interchange	1-10 Years 10-20 Years
WSDOT	5,000	I-5	SR-500 - Jantzen Beach	MTP: Columbia River Crossing	10-20 Years
Vancouver	600	Fourth Plain	Mill Plain - Fruit Valley	TSMO: Signal upgrade, communication, surveillance	Ongoing

Table 10
PM Operational Improvements
(Areas of Concern: Speed < 60% of Posted Speed)

PM Speed 60% or Less of Posted Speed Limit					
Jurisdiction	**Peak Hour**	**Corridor**	**Segment**	**Identified Improvement**	**Estimated**
Clark County	1,500	Andresen Road	78th Street to NE 88th St.	TIP: Padden/Andresen Traffic Signal Optimization TSMO: Signal upgrade, communication, surveillance, data	2011 1-10 Years 10-20 Years
Vancouver	1,700	164th Avenue	SR-14 - SE 34th St.	TIP: Channelization and signal coordination TSMO: Signal upgrade, communication, surveillance	2011 1-20 Years
Vancouver	1,400	112th Avenue	49th Street - SR-500	TIP: Arterial Operation and Incident Management TSMO: Signal upgrade, communication, surveillance	2011 1-10 Years
Vancouver	900	112th Avenue	NE 9th St. - NE 18th St.	TIP: Arterial Operation and Incident Management TSMO: Signal upgrade, surveillance	2011 1-10 Years
Vancouver	1,700	Andresen Road	18th Street - 63rd St.	TIP: Signal Optimization Program Andresen/Mill Plain TSMO: Signal upgrade, surveillance	2011 1-10 Years
Clark County	1,500	99th Street	Hazel Dell Av. - Hwy. 99	TIP: 99th Street Signal Optimization TSMO: Signal upgrade, communications, surveillance	2011 1-10 Years
Clark County	550	78th Street	Padden to Andresen	TIP: 78th Street Signal Optimization TSMO: Signal upgrade, communications, surveillance	2012 1-10 Years
Clark County	1,500	78th Street	Hazel Dell Av. - Hwy. 99	TIP: 78th Street Signal Optimization TSMO: Signal upgrade, communications, surveillance	2012 1-10 Years
WSDOT	2,000	SR-500	I-5 -St. Johns	TIP: St. Johns Interchange/Surveillance, data, VMS	2013
Vancouver	800	St. Johns	Ft. Vancouver - SR-500	TIP: SR-500/St. Johns Interchange TSMO: Signal upgrade, communication, data	2013 1-10 Years
Clark County	1,500	134th Street	NE 10th Ave. - I-205	TIP: I-5/Salmon Creek Interchange MTP: Salmon Creek Interchange, Phase II	2014 10-20 Years
Clark County	1,000	NE 72nd Av.	St. Johns to NE 119th St.	TIP: Intersection Improvement	2015
Vancouver	2,700	Mill Plain Blvd.	98th Av. - Chkalov Dr.	MTP: I-205/18th Street Interchange TSMO: Signal upgrade, surveillance, data	2016 1-10 Years
Vancouver	800	Fourth Plain	St. Johns - Ft. Vancouver	TSMO: Signal upgrade, communication, surveillance, data	1-10 Years
Vancouver	600	Fourth Plain	Broadway St. - Kaufman	TSMO: Signal upgrade, communication, surveillance	1-10 Years
Vancouver	1,200	Fourth Plain	Falk Rd. - Thurston	TSMO: Signal upgrade, communication, surveillance, data	1-10 Years
Vancouver	900	137th Avenue	18th St. - 28th St.	TSMO: Signal upgrade, communication, surveillance	1-10 Years
Vancouver	2,000	Fourth Plain	Gher Rd. - 137th	TSMO: Signal upgrade, communication, surveillance	1-10 Years
Vancouver	1,000	Fourth Plain	Ward Rd. - 162nd Av.	TSMO: Signal upgrade, communication, surveillance	1-10 Years
Vancouver	1,000	Mill Plain Blvd.	Parkcrest Av. - 164th Av.	TSMO: Signal upgrade, surveillance, data	1-10 Years
Clark County	1,000	Highway 99	Ross to NE 63rd	TSMO: Signal upgrade, communication, data	1-10 Years
Vancouver	700	Burton Road	Andresen Rd. - 86th Av.	TSMO: Signal upgrade, communication, surveillance	1-10 Years
Vancouver	700	192nd Av.	Mill Plain - SE 1st St.	TSMO: Signal upgrade, surveillance	1-10 Years
Vancouver	600	Ft. Vancouver	Mill Plain - St. Johns Av.	TSMO: Signal upgrade, communication, surveillance	1-10 Years
Vancouver	900	18th Street	138th Av. - 162nd Av.	TSMO: Signal upgrade, communication, surveillance	1-10 Years
Clark County	500	76th Street	Covington to SR-503	TSMO: Signal upgrade, communication, surveillance	1-10 Years
Clark County	600	137th Avenue	49th St. - Padden Pkwy.	TSMO: Signal upgrade, communication, surveillance MTP: Widening 137th Av.	1-10 Years 10-20 Years
Clark County	1,800	Padden Parkway	78th St. - I-205	TMSO: Signal upgrade, communication, surveillance MTP: Grade Separate	1-10 Years 10-20 Years
Clark County	1,000	Highway 99	117th Av. to 134th St.	TSMO: Signal upgrade, communication MTP: Salmon Creek Interchange Project, Phase II	1-10 Years 10-20 Years
Vancouver	400	Main Street	Mill Plain - Fourth Plain	TSMO: Signal upgrade, communications, surveillance MTP: Columbia River Crossing	1-10 Years 10-20 Years
Vancouver	1,200	Mill Plain Blvd.	I-5 - Ft. Vancouver Way	TSMO: Signal upgrade, communication, surveillance, data	1-10 Years 10-20 Years
WSDOT	1,500	SR-503	Fourth Plain - 76th St.	TSMO: Signal upgrade, communication, surveillance MTP: Intersection Improvements and Access Control	1-10 Years 10-20 Years

Table 11

Supportive Management Strategies

Identified Strategies
Transportation Management Center
Regional Incident/Emergency Management
Work Zone Management
Ramp Metering
Road Weather Information Systems
Transit: Automatic Vehicle Locator & Computer Aided Dispatch
Transit: Automatic Passenger Counters
Transit: Regional Transit Fare Mediation
Freight Data Collection
Regional Traveler Information
Predictive Traveler Information
Real-time Transit Arrival Information
Transit Trip Planning Website
Parking Availability Information
ITS Coordination and Management
Commute Trip Reduction (CTR) Program
Carpool Program
Vanpool Program
Bicycle/Pedestrian Facilities
Transit Amenities/Enhancement
Transit Service Expansion
Access Management
Safety Management
Transit Oriented Development
Mixed Use Land Use

APPENDICES

APPENDIX A.
INDIVIDUAL CORRIDOR DATA

Appendix A considers and displays the transportation data by individual segment along each of the CMS corridors. The detailed data was used to develop the congestion management corridor summaries in the previous chapters and provides a comprehensive set of transportation data for the individual segments and facilities that comprise the corridors.

The purpose of considering transportation data by individual segments is to identify specific locations where congestion is occurring, which may or may not be affecting the operation of the corridor as a whole.

This section contains detailed transportation data for each of the congestion management corridors, for both the AM and PM peak periods. Information by corridor contains an individual data sheet and a schematic map of the corridor.

The detailed transportation data is provided for the following corridors:

I-5

I-205

St. Johns

Andresen Road/72nd Avenue

SR-503

137th Avenue

162nd/164th Avenue

192nd Avenue

SR-14

Mill Plain Boulevard

Fourth Plain Boulevard

SR-500

78th/Padden Parkway

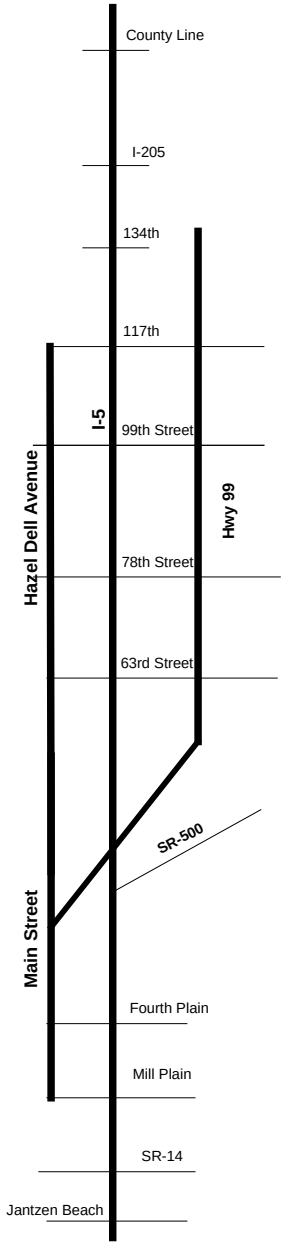
99th Street

28th/18th Streets

134th/139th Streets

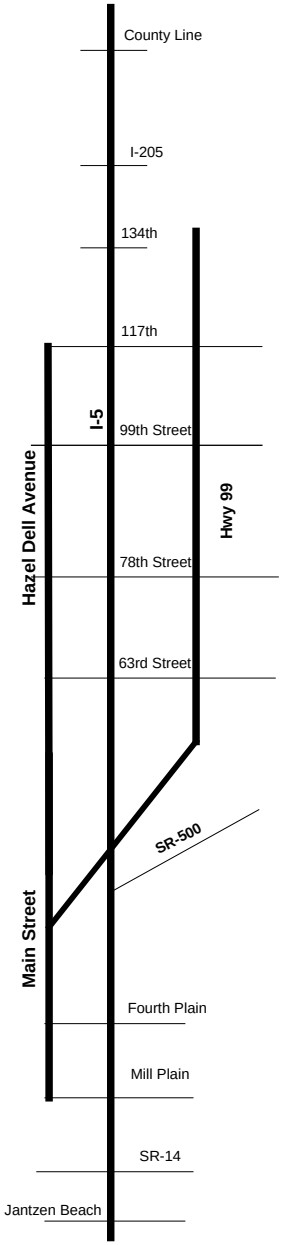
SR-502

SR-501 & La Center Road



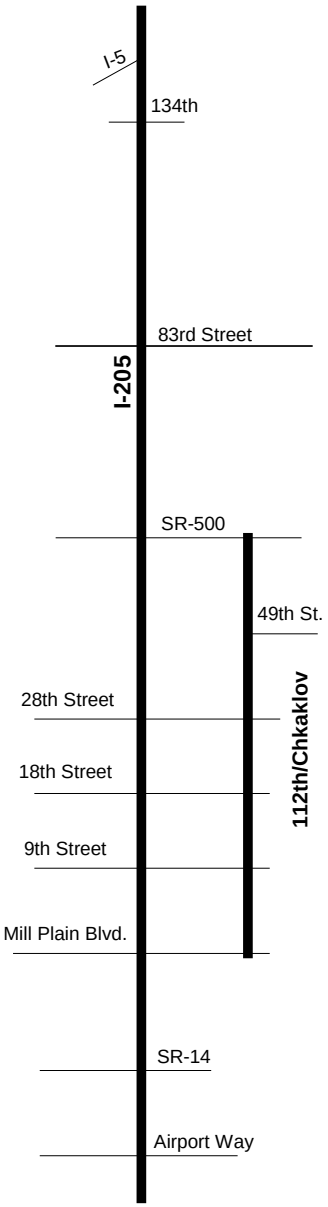
I-5 Corridor

AM Peak		Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
		Length	Capacity	AM - Nouthbound/Eastbound										
I-5														
County Line	- 319th St.	3.57	5800	1828	0.32	13%		186	69					
319th St.	- SR 501/Pioneer	2.63	5800	2702	0.47	13%		135	70					
SR 502/219th St.	- 179th St.	2.22	5800	2915	0.50	13%	1.15	122	66					
179th St.	- I-205	1.66	5400	3350	0.62	8%		95	63	47, LC/Rid Connector	28	69	40.6%	
		12.46		**3350**	**0.48**	**9%**	**1.15**	**666**	**67**	**47, LC/Rid Conn**	**28**	**69**	**40.6%**	**1.9%**
I-5														
I-205	- 134th St.	1.07	3800	1765	0.46	8%		64	60					
134th St.	- 99th St.	1.18	6000	3312	0.55	8%		67	63					
99th St.	- 78th St.	1.03	6000	3802	0.63	6%		61	61	105,134,157,199	635	984	64.5%	
78th St.	- Main St.	1.50	6000	3370	0.56	6%		89	61					
		4.78		**3802**	**0.57**	**7%**	**1.13**	**281**	**61**	**105,134,157,199**	**635**	**984**	**64.5%**	**24.6%**
Hwy 99														
134th St.	- 117th St.	0.89	1800	758	0.42	9%		140	23					
117th St.	- 99th St.	0.91	1800	393	0.22	7%		131	25					
99th St.	- 78th St.	1.03	1800	245	0.14	6%		150	25					
78th St.	- 63rd St.	0.75	1800	548	0.30	6%	1.15	91	30	37,78	92	456	20.2%	
63rd St.	- Ross St.	0.41	800	553	0.69	5%		37	40					
		3.99		**758**	**0.35**	**7%**	**1.15**	**549**	**26**	**37,78**	**92**	**456**	**20.2%**	**25.3%**
Hazel Dell														
117th St.	- 99th St.	1.67	900	302	0.34	3%		215	28					
99th St.	- 78th St.	0.99	1700	334	0.20	2%		159	22					
78th St.	- 63rd St.	0.73	900	324	0.36	3%		93	28	32	18	175	10.3%	
		3.39		**334**	**0.30**	**3%**	**1.13**	**467**	**26**	**32**	**18**	**175**	**10.3%**	**9.7%**
I-5														
Main St.	- 39th St.	0.71	5800	3290	0.57	6%		66	39	105,134,157,190,199	771	1,107	69.6%	
39th St.	- 4th Plain	0.73	6800	5270	0.78	6%	1.24	191	14					
4th Plain	- Mill Plain	0.33	6800	4895	0.72	6%		108	11					
Mill Plain	- SR 14	0.66	5400	4524	0.84	6%	1.14	177	13					
SR 14	- Jantzen Beach	1.21	5400	5094	0.94	7%		254	17	4,41,44,47,105,134,1	1286	1,704	75.5%	
		3.64		**5270**	**0.81**	**6%**	**1.19**	**796**	**16**	**4,41,44,47,105,13**	**1286**	**1,704**	**75.5%**	**47.3%**
Main Street														
Ross St.	- 39th St.	0.83	1700	1441	0.85	3%		61	49					
39th St.	- Fourth Plain	0.69	900	461	0.51	6%		98	25	37,78	92	456	20.2%	
Fourth Plain	- Mill Plain	0.57	900	416	0.46	0%		206	10					
		2.09		**1441**	**0.73**	**4%**	**1.13**	**365**	**21**	**32,37**	**156**	**386**	**40.4%**	**42.9%**



I-5 Corridor

PM Peak		Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
		Length	Capacity	PM - Nouthbound/Eastbound										
I-5														
County Line	- 319th St.	4.13	5800	2457	0.42	16%		211	70					
319th St.	- SR 501/Pioneer	2.54	5800	3036	0.52	13%		135	68					
SR-501/Pioneer	- SR 502/219th St.	2.98	5800	3153	0.54	13%		160	67					
179th St.	- I-205	1.47	5400	4420	0.82	9%	0.00	86	62	47, LC/Rid Connector	29	115	25.2%	
		12.81		**4420**	**0.56**	**12%**	**1.23**	**684**	**67**	**47, LC/Rid Conne**	**29**	**115**	**25.2%**	**3.0%**
I-5														
I-205	- 134th St.	0.75	3800	2250	0.59	9%		41	66					
134th St.	- 99th St.	1.92	6000	3000	0.50	9%	1.17	108	64					
99th St.	- 78th St.	1.08	6000	4020	0.67	5%		62	63	105,134,157,199	439	902	48.7%	
78th St.	- Main St.	1.33	6000	4660	0.78	6%		78	61					
		5.08		**4660**	**0.65**	**7%**	**1.17**	**289**	**63**	**105,134,157,199**	**439**	**902**	**48.7%**	**22.6%**
Hwy 99														
134th St.	- 117th St.	0.89	1800	1038	0.58	2%		174	18					
117th St.	- 99th St.	0.91	1800	766	0.43	2%		106	31					
99th St.	- 78th St.	1.03	1800	870	0.48	2%		150	25					
78th St.	- 63rd St.	0.75	1800	1074	0.60	2%	1.33	98	28	37,78	160	421	38.0%	
63rd St.	- Ross St.	0.41	1800	972	0.54	2%		75	20					
		3.99		**1074**	**0.53**	**2%**	**1.33**	**603**	**24**	**37,78**	**160**	**421**	**38.0%**	**23.4%**
Hazel Dell														
117th St.	- 99th St.	1.67	900	365	0.41	1%		187	32					
99th St.	- 78th St.	0.99	1700	700	0.41	1%		153	23					
78th St.	- 63rd St.	0.73	900	611	0.68	1%		108	24	32	47	140	33.6%	
		3.39		**700**	**0.48**	**1%**	**1.22**	**448**	**27**	**32**	**47**	**140**	**33.6%**	**7.8%**
I-5														
Main St.	- SR 500	0.70	5800	4990	0.86	5%		41	61	105,134,157,190,199	541	1,148	47.1%	
SR 500	- 4th Plain	0.16	6800	6260	0.92	4%	1.08	10	58					
4th Plain	- Mill Plain	0.97	6800	6243	0.92	4%		60	58					
Mill Plain	- SR 14	0.52	5700	5149	0.90	3%	1.22	32	59					
SR 14	- Jantzen Beach	0.65	5400	4821	0.89	5%		72	33	4,41,44,47,105,134,1	1,346	1,663	80.9%	
		3.00		**6260**	**0.90**	**4%**	**1.22**	**215**	**50**	**4,41,44,47,105,13**	**1,346**	**1,663**	**80.9%**	**46.2%**
Main Street														
Ross St.	- 39th St.	0.85	1700	727	0.43	3%		81	38					
39th St.	- Fourth Plain	0.69	900	551	0.61	2%		119	21	37,78	160	421	38.0%	
Fourth Plain	- Mill Plain	0.57	900	355	0.39	2%		140	15					
		2.11		**727**	**0.48**	**2%**	**1.22**	**340**	**22**	**32,37**	**221**	**386**	**57.3%**	**42.9%**

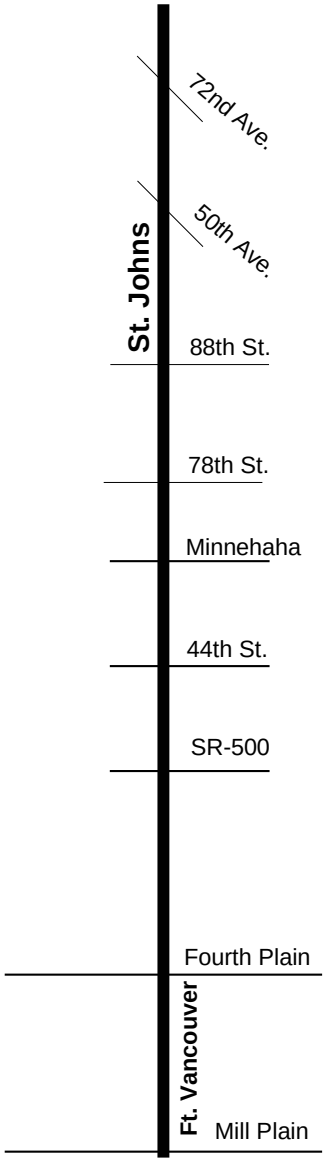


I-205 Corridor

AM Peak		Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
		Length	Capacity	AM - Nouthbound/Eastbound										
I-205														
I-5	- 134th St.	0.75	3800	1923	0.51	9%		45	60					
134th St.	- 83rd St.	2.89	3800	2696	0.71	7%		165	63					
83rd St.	- SR 500	1.99	3800	4000	1.05	6%	1.10	119	60					
		5.63		**4000**	**0.85**	**7%**	**1.10**	**329**	**62**	**0**	**0**	**0**	**0.0%**	**0.0%**
I-205														
SR 500	- Mill Plain	2.78	5800	5400	0.93	0%	1.08	162	62					
Mill Plain	- SR 14	1.00	6800	6300	0.93	0%	1.13	60	60					
SR 14	- Airport Way	2.65	8000	7500	0.94	4%		165	58	65,164,177	523	861	60.7%	
		6.43		**7500**	**0.93**	**4%**	**1.11**	**387**	**60**	**164, 165, 177**	**523**	**861**	**60.7%**	**16.1%**
112th Ave. NE / Chkalov Drive / Gher Road														
SR 500	- 49th St.	0.31	1700	1196	0.70	0%		44	25					
49th St.	- 28th St.	0.99	1700	712	0.42	0%		131	27	80	106	140	75.7%	
28th St.	- 18th St.	0.49	1700	596	0.35	5%		64	28					
18th St.	- 9th St.	0.50	1700	685	0.40	0%		55	33					
9th St.	- Mill Plain	0.57	1700	918	0.54	0%		97	21					
		2.86		**1196**	**0.48**	**5%**	**1.13**	**391**	**26**	**80**	**106**	**140**	**75.7%**	**8.2%**

I-205 Corridor

PM Peak		Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
		Length	Capacity	PM - Nouthbound/Eastbound										
I-205														
I-5	- 134th St.	0.79	3800	2149	0.57	10%		48	60					
134th St.	- 83rd St.	3.73	3800	2800	0.74	9%		219	61					
83rd St.	- SR 500	2.27	3800	3800	1.00	9%	1.24	139	59					
		6.79		**3800**	**0.83**	**9%**	**1.24**	**406**	**60**	**N/A**	**0**	**0**	**0.0%**	**0.0%**
I-205														
SR 500	- Mill Plain	2.49	5800	5300	0.91	6%	1.23	166	54					
Mill Plain	- SR 14	0.91	6800	6300	0.93	9%	1.19	53	62					
SR 14	- Airport Way	2.03	8000	7300	0.91	4%		137	53	65,164,177	371	820	45.2%	
		5.43		**7300**	**0.92**	**6%**	**1.21**	**356**	**55**	**65,164,177**	**371**	**820**	**45.2%**	**15.4%**
112th Ave. NE / Chkalov Drive / Gher Road														
SR 500	- 49th St.	0.31	1700	1386	0.82	2%		70	16					
49th St.	- 28th St.	0.99	1700	975	0.57	3%		126	28	80	84	140	60.0%	
28th St.	- 18th St.	0.49	1700	939	0.55	1%		75	24					
18th St.	- 9th St.	0.50	1700	866	0.51	1%		320	6					
9th St.	- Mill Plain	0.57	1700	935	0.55	2%		79	26					
		2.86		**1386**	**0.59**	**2%**	**1.22**	**670**	**15**	**80**	**84**	**140**	**60.0%**	**8.2%**

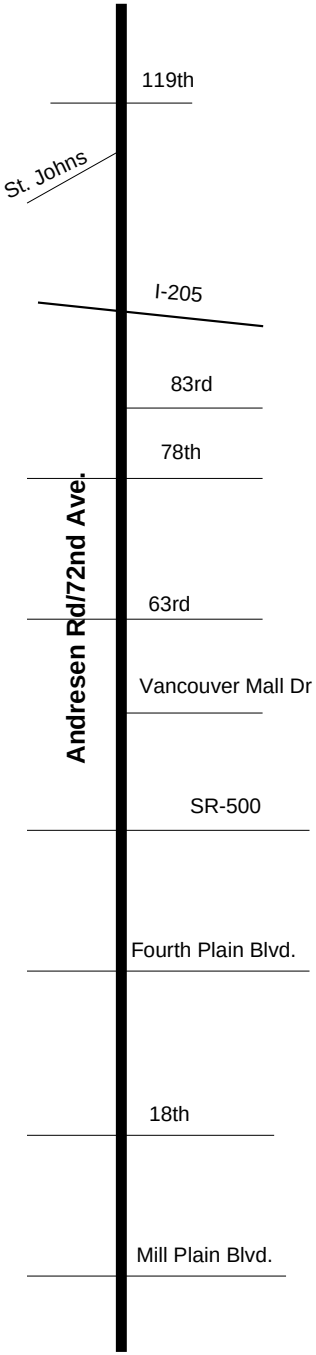


Grand/St. Johns Corridor

AM Peak	Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
	Length	Capacity	AM - Nouthbound/Eastbound										
St. Johns Rd.													
NE 72nd Ave. - 50th Ave.	1.38	1800	337	0.19	3%		112	44					
50th Ave. - NE 88th St.	0.34	1800	651	0.36	0%		44	28					
NE 88th St. - NE 78th St.	0.49	1800	896	0.50	6%		70	25					
NE 78th St. - NE Minnehaha St.	1.06	1800	676	0.38	8%		109	35					
St. Johns Rd./St. James Rd.													
NE Minnehaha St. - NE 49th St.	0.72	1800	866	0.48	0%		81	32	25	87	105	82.9%	
NE 49th St. - SR 500	0.74	1600	998	0.62	4%		123	22					
St. Johns Blvd.													
SR-500 - Ft. Vancouver	0.44	1000	1064	1.06	0%		63	25					
Ft. Vancouver Way													
St. Johns - Fourth Plain	0.22	700	619	0.88	0%		43	18	25	97	105	92.4%	
Fourth Plain - Mill Plain	0.86	1200	962	0.80	0%		142	22					
	6.25		**1064**	**0.58**	**7%**	**1.13**	**787**	**29**	**25**	**97**	**105**	**92.4%**	**7.5%**

Grand/St. Johns Corridor

PM Peak	Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
	Length	Capacity	PM - Nouthbound/Eastbound										
St. Johns Rd.													
NE 72nd Ave. - 50th Ave.	1.38	1800	358	0.20	4%		138	36					
50th Ave. - NE 88th St.	0.34	1800	737	0.41	3%		29	42					
NE 88th St. - NE 78th St.	0.49	1800	853	0.47	3%		68	26					
NE 78th St. - NE Minnehaha St.	1.07	1800	746	0.41	3%		153	25					
St. Johns Rd./St. James Rd.													
NE Minnehaha St. - NE 44th St.	0.93	1800	807	0.45	3%		148	23	25	54	105	51.4%	
NE 44th St. - SR 500	0.54	1600	798	0.50	3%		55	35					
St. Johns Blvd.													
SR 500 - Ft. Vancouver	0.44	1000	822	0.82	2%		177	9					
Ft. Vancouver Way													
St. Johns - Fourth Plain	0.22	700	414	0.59	2%		56	14	25	48	105	45.7%	
Fourth Plain - Mill Plain	0.86	1200	580	0.48	2%		181	17					
	6.27		**853**	**0.46**	**3%**	**1.22**	**1005**	**22**	**25**	**54**	**105**	**51.4%**	**2.9%**

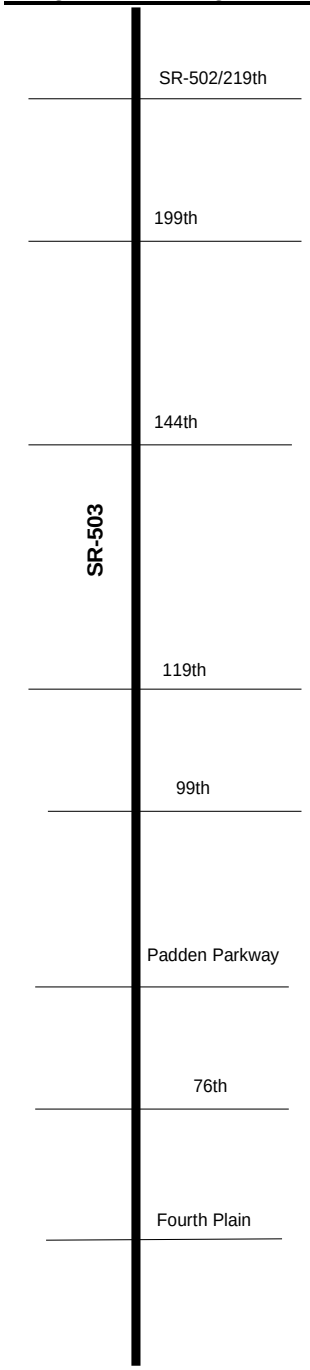


Andresen Rd./72nd Av. Corridor

AM Peak	Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
	Length	Capacity	AM - Nouthbound/Eastbound										
Andresen Rd. / N.E. 72nd Avenue.													
119th St. - St. Johns Rd.	0.31	800	845	1.06	4%		31	36					
St. Johns Rd. - 88th St.	1.21	1800	535	0.30	5%		115	38					
88th St. - Padden Parkway	0.27	1800	1064	0.59	4%		37	26					
Padden Parkway - 78th St.	0.24	1800	492	0.27	0%		67	13					
78th St. - 63rd St.	0.76	1800	498	0.28	7%		99	28	78	29	70	41.4%	
63rd St. - Vancouver Mall Dr.	0.70	1800	664	0.37	4%		81	31					
Vancouver Mall - SR 500	0.62	1800	1027	0.57	0%		96	23					
	4.11		**1064**	**0.47**	**4%**	**1.13**	**526**	**28**	**78**	**29**	**70**	**41.4%**	**3.9%**
Andresen Rd.													
SR 500 - Fourth Plain Blvd.	0.26	1800	1114	0.62	4%		46	20					
Fourth Plain Blvd. - 18th St.	0.55	1800	867	0.48	5%		78	25					
18th St. - Mill Plain Blvd.	0.68	1800	666	0.37	0%		108	23	32	49	140	35.0%	
	1.49		**1114**	**0.47**	**4%**	**1.13**	**232**	**23**	**32**	**49**	**140**	**35.0%**	**7.8%**

Andresen Rd./72nd Av. Corridor

PM Peak	Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
	Length	Capacity	PM - Nouthbound/Eastbound										
Andresen Rd. / N.E. 72nd Avenue.													
119th St. - St. Johns Rd.	0.31	1800	1006	0.56	4%		49	23					
St. Johns Rd. - 88th St.	1.21	1800	748	0.42	3%		105	41					
88th St. - Padden Parkway	0.27	1800	1490	0.83	3%		36	27					
Padden Parkway - 78th St.	0.24	1800	857	0.48	3%		71	12					
78th St. - 63rd St.	0.76	1800	797	0.44	3%		91	30	78	30	70	42.9%	
63rd St. - Vancouver Mall Dr.	0.70	1800	995	0.55	3%		130	19					
Vancouver Mall Dr. - SR 500	0.62	1800	1260	0.70	3%		99	23					
	4.11		**1490**	**0.56**	**3%**	**1.22**	**581**	**25**	**78**	**30**	**70**	**42.9%**	**3.9%**
Andresen Rd.													
SR 500 - Fourth Plain Blvd.	0.26	1800	1714	0.95	3%		35	27					
Fourth Plain Blvd. - 18th St.	0.55	1800	1131	0.63	2%		134	15					
18th St. - Mill Plain Blvd.	0.68	1800	882	0.49	2%		96	26	32	76	140	54.3%	
	1.49		**1714**	**0.67**	**2%**	**1.22**	**265**	**20**	**32**	**76**	**140**	**54.3%**	**7.8%**

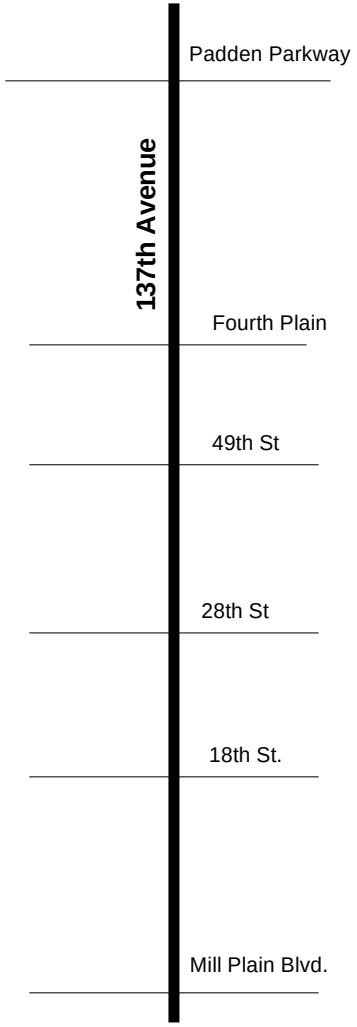


SR-503 Corridor

AM Peak	Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
	Length	Capacity	AM - Nouthbound/Eastbound										
SR 503													
119th St. - 99th St.	0.99	1800	1572	0.87	7%		111	32					
99th St. - Padden Parkway	0.77	1800	1672	0.93	7%		103	27	7,72	37	140	26.4%	
Padden Parkway - 76th St.	0.30	1800	1279	0.71	7%		31	35					
76th St. - Fourth Plain/SR 500	0.72	1800	1272	0.71	0%	1.06	209	12					
	2.78		**1672**	**0.84**	**7%**	**1.06**	**454**	**22**	**7,72**	**37**	**140**	**26.4%**	**7.8%**
SR 503													
SR-502 - 199th St.	0.99	1800	1099	0.61	5%		96	37	7,72	37	140	26.4%	
199th St. - 149th St.	2.54	1800	1419	0.79	4%	1.16	189	48					
149th St. - 119th St.	1.49	1800	1547	0.86	3%		118	45					
	5.02		**1547**	**0.78**	**4%**	**1.16**	**403**	**45**	**7,72**	**37**	**140**	**26.4%**	**7.8%**

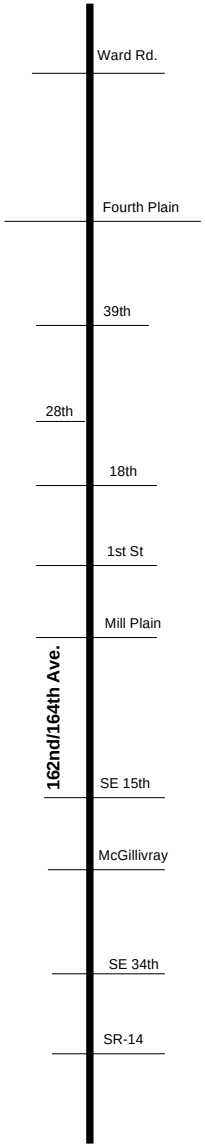
SR-503 Corridor

PM Peak	Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
	Length	Capacity	PM - Nouthbound/Eastbound										
SR 503													
119th St. - 99th St.	0.99	1800	1531	0.85	4%		92	39					
99th St. - Padden Parkway	0.77	1800	1774	0.99	3%		84	33	7,72	45	140	32.1%	
Padden Parkway - 76th St.	0.30	1800	1517	0.84	2%		34	32					
76th St. - Fourth Plain/SR 500	0.72	1800	1536	0.85	2%	1.23	160	16					
	2.78		**1774**	**0.89**	**3%**	**1.23**	**370**	**27**	**7,72**	**45**	**140**	**32.1%**	**7.8%**
SR 503													
SR-502 - 199th St.	0.99	1800	1242	0.69	4%		114	31	7,72	45	140	32.1%	
199th St. - 149th St.	2.54	1800	1404	0.78	4%	1.26	228	40					
149th St. - 119th St.	1.49	1800	1583	0.88	4%		112	48					
	5.02		**1583**	**0.80**	**4%**	**1.23**	**454**	**40**	**7,72**	**45**	**140**	**32.1%**	**7.8%**



136/137/138th Avenue Corridor														
AM Peak		**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
		Length	**Capacity**	**AM - Nouthbound/Eastbound**										
136/137/138th Ave.														
Padden Parkway	- Fourth Plain	0.70	900	454	0.50	5%		156	16					
Fourth Plain	- 49th St.	1.04	800	357	0.45	0%		111	34					
49th St.	- 28th St.	1.00	800	426	0.53	0%		161	22					
28th St.	- 18th St.	0.49	1800	620	0.34	4%		110	16	80	190	304	62.5%	
18th St.	- Mill Plain	1.27	1700	611	0.36	0%		188	24					
		4.50		**620**	**0.43**	**4%**	**1.13**	**726**	**22**	**80**	**190**	**304**	**62.5%**	**16.9%**

136/137/138th Avenue Corridor														
PM Peak		**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
		Length	**Capacity**	**PM - Nouthbound/Eastbound**										
136/137/138th Ave.														
Padden Parkway	- Fourth Plain	0.70	900	570	0.63	3%		147	17					
Fourth Plain	- 49th St.	1.04	800	529	0.66	2%		167	22					
49th St.	- 28th St.	1.00	800	635	0.79	5%		129	28					
28th St.	- 18th St.	0.49	1800	883	0.49	2%		86	21	80	190	304	62.5%	
18th St.	- Mill Plain	1.27	1700	916	0.54	2%		176	26					
		4.50		**916**	**0.62**	**3%**	**1.22**	**705**	**22**	**80**	**190**	**304**	**62.5%**	**16.9%**

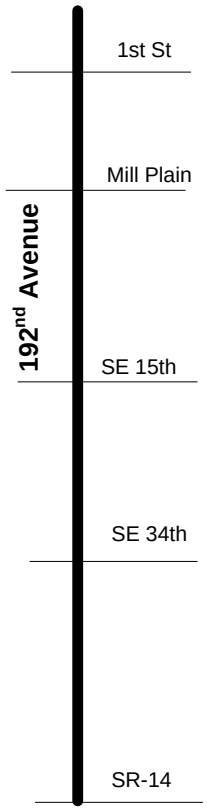


162nd/164th Avenue Corridor

AM Peak	Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
	Length	Capacity	AM - Nouthbound/Eastbound										
162nd/164th Ave.													
Ward Rd. - SR 500	0.87	1800	720	0.40	7%		101	31					
SR 500 - 39th St.	1.49	1800	811	0.45	7%		144	37					
39th St. - 28th St.	0.51	1800	904	0.50	5%		67	27					
28th St. - 18th St.	0.49	1800	1078	0.60	6%		54	33	30	69	164	42.1%	
18th St. - 1st St.	1.01	2400	1018	0.42	5%		90	40					
1st St. - Mill Plain	0.39	2400	980	0.41	6%		38	37					
	4.76		**1078**	**0.46**	**6%**	**1.13**	**494**	**35**	**30**	**69**	**164**	**42.1%**	**9.1%**
162nd/164th Ave.													
Mill Plain - 15th St.	0.36	2400	910	0.38	6%		41	32					
15th St. - McGillvray	0.40	2400	955	0.40	6%	1.14	34	42					
McGillvray - 34th St.	0.52	2400	910	0.38	5%		44	43	30,37	120	410	29.3%	
34th St. - SR 14	0.34	2400	1394	0.58	3%		35	35					
	1.62		**1394**	**0.44**	**5%**	**1.14**	**154**	**38**	**30,37**	**120**	**410**	**29.3%**	**25.6%**

162nd/164th Avenue Corridor

PM Peak	Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
	Length	Capacity	PM - Nouthbound/Eastbound										
162nd/164th Ave.													
Ward Rd. - Fourth Plain	0.87	1800	881	0.49	3%		119	26					
Fourth Plain - 39th St.	1.49	1800	1136	0.63	2%		170	32					
39th St. - 28th St.	0.51	1800	1113	0.62	2%		56	33					
28th St. - 18th St.	0.49	1800	1293	0.72	3%		47	38	30	74	164	45.1%	
18th St. - 1st St.	1.01	2400	1346	0.56	3%		132	28					
1st St. - Mill Plain	0.39	2400	1117	0.47	2%		52	27					
	4.76		**1346**	**0.59**	**3%**	**1.22**	**576**	**30**	**30**	**74**	**164**	**45.1%**	**9.1%**
162nd/164th Ave.													
Mill Plain - 15th St.	0.36	2400	1374	0.57	2%		44	29					
15th St. - McGillvray	0.40	2400	1447	0.60	3%	1.27	51	28					
McGillvray - 34th St.	0.52	2400	1312	0.55	2%		54	35	30,37	183	410	44.6%	
34th St. - SR 14	0.38	2400	1732	0.72	2%		70	20					
	1.66		**1732**	**0.61**	**2%**	**1.27**	**219**	**27**	**30,37**	**183**	**410**	**44.6%**	**25.6%**



192nd Avenue Corridor														
AM Peak	**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
	Length	**Capacity**	**AM - Southbound/Westbound**										
192nd Ave.													
SE 1st St. - Mill Plain	0.30	1800	463	0.26	4%		35	31					
Mill Plain - SE 15th St.	0.47	1800	671	0.37	4%		55	31					
SE 15th St. - 34th St.	0.93	1800	488	0.27	4%		130	26					
34th St. - SR 14	0.91	1800	1268	0.70	4%		110	30					
	2.61		**1268**	**0.53**	**4%**	**1.13**	**330**	**28**	**N/A**	**0**	**0**	**0.0%**	**0.0%**

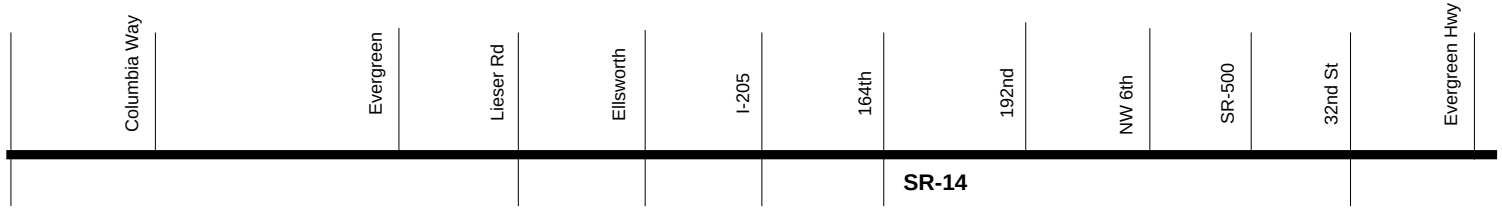
192nd Avenue Corridor														
PM Peak	**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
	Length	**Capacity**	**AM - Southbound/Westbound**										
192nd Ave.													
SE 1st St. - Mill Plain	0.30	1800	684	0.38	2%		51	21					
Mill Plain - SE 15th St.	0.47	1800	833	0.46	3%		58	29					
SE 15th St. - 34th St.	0.93	1800	844	0.47	2%		103	33					
34th St. - SR 14	0.91	1800	1154	0.64	2%		133	25					
	2.61		**1154**	**0.53**	**2%**	**1.22**	**345**	**27**	**N/A**	**0**	**0**	**0.0%**	**0.0%**

SR-14 Corridor

AM Peak		Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
		Length	Capacity	AM - Nouthbound/Eastbound										
SR 14														
I-5	- Columbia Way	1.89	3800	2218	0.58	4%		126	54					
Columbia Way	- Evergreen Blvd.	1.70	3800	2902	0.76	0%	1.09	111	55					
Evergreen Blvd.	- Lieser Rd.	0.84	3800	2980	0.78	0%		55	55	41	17	41	41.5%	
Lieser Rd.	- Ellsworth Rd.	0.76	3800	3220	0.85	0%		48	57					
Ellsworth Rd.	- I-205	0.77	3800	2340	0.62	4%		48	58					
		5.96		**3220**	**0.72**	**4%**	**1.09**	**388**	**55**	**41**	**17**	**41**	**41.5%**	**1.1%**
SR 14														
I-205	- 164th Ave.	2.76	3800	3470	0.91	4%	1.04	253	39	41,65,164	519	820	63.3%	
		2.76		**3470**	**0.91**	**4%**	**1.04**	**253**	**39**	**41,65,164**	**519**	**820**	**63.3%**	**21.6%**
SR 14														
164th Ave.	- 192nd Ave.	1.40	5000	2610	0.52	0%		92	55					
192nd Ave.	- 6th Ave. NW	2.06	3800	1984	0.52	0%	1.12	125	59	41	55	181	30.4%	
6th Ave. NW	- SR 500	2.13	1200	1316	1.10	8%		148	52					
SR 500	- 32nd St.	2.39	1200	999	0.83	4%		231	37					
32nd St.	- Evergreen Hwy.	1.82	900	190	0.21	10%		124	53					
		9.80		**2610**	**0.69**	**7%**	**1.12**	**720**	**49**	**41**	**55**	**181**	**30.4%**	**4.8%**

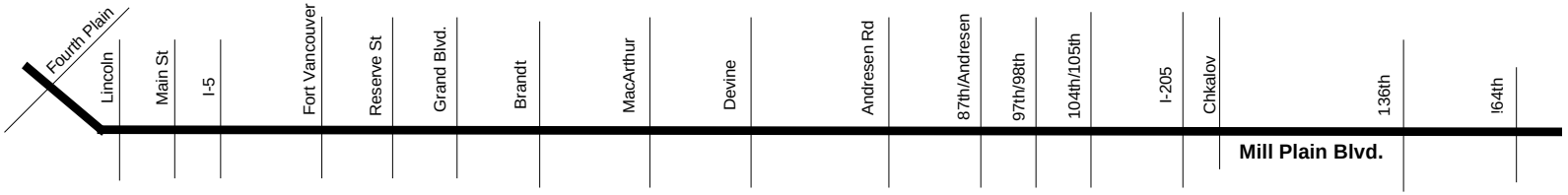
SR-14 Corridor

PM Peak		Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
		Length	Capacity	PM - Nouthbound/Eastbound										
SR 14														
I-5	- Columbia Way	0.67	3800	2582	0.68	4%		40	60					
Columbia Way	- Evergreen Blvd.	2.31	3800	2927	0.77	4%	1.15	133	63					
Evergreen Blvd.	- Lieser Rd.	1.12	3800	3070	0.81	4%		66	61	41	0	0	0.0%	
Lieser Rd.	- Ellsworth Rd.	1.12	3800	3180	0.84	4%		68	59					
Ellsworth Rd.	- I-205	0.77	3800	2600	0.68	3%		43	64					
		5.99		**3180**	**0.77**	**4%**	**1.15**	**350**	**62**	**41**	**0**	**0**	**0.0%**	**0.0%**
SR 14														
I-205	- 164th Ave.	2.03	3800	3790	1.00	3%	1.11	129	57	41,65,164	336	738	45.5%	
		2.03		**3790**	**1.00**	**3%**	**1.11**	**129**	**57**	**41,65,164**	**336**	**738**	**45.5%**	**19.4%**
SR 14														
164th Ave.	- 192nd Ave.	1.68	5000	2650	0.53	5%		97	62					
192nd Ave.	- 6th Ave. NW	2.07	3800	2007	0.53	5%	1.17	122	61	41	39	140	27.9%	
6th Ave. NW	- SR 500	2.56	1200	1291	1.08	8%		176	52					
SR 500	- 32nd St.	2.39	1200	1233	1.03	5%		193	45					
32nd St.	- Evergreen Hwy.	1.82	900	200	0.22	10%		130	50					
		10.52		**2650**	**0.74**	**6%**	**1.17**	**718**	**53**	**41**	**39**	**140**	**27.9%**	**3.7%**



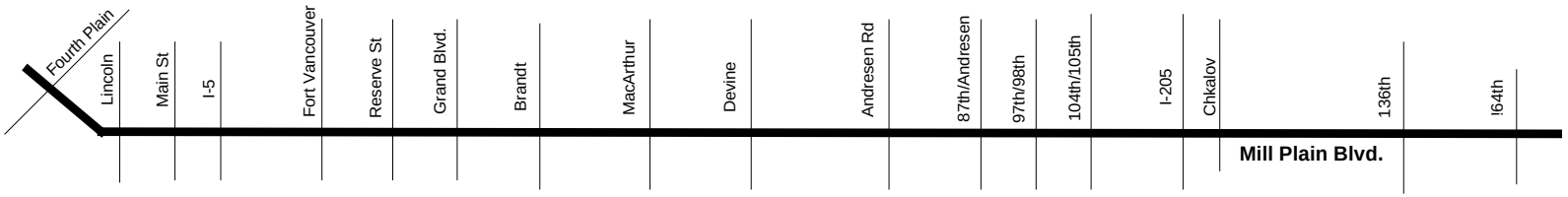
Mill Plain Blvd. Corridor

AM Peak		Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
		Length	Capacity	AM - Nouthbound/Eastbound										
Mill Plain/SR 501														
I-5	- Main St.	0.33	2400	1179	0.49	9%		60	20					
Main St.	- Lincoln	0.57	2400	826	0.34	16%		90	23	25	45	140	32.1%	
Lincoln	- Fourth Plain	0.82	1800	356	0.20	26%	1.10	87	34					
		1.72		**1179**	**0.36**	**15%**	**1.10**	**237**	**26**	**25**	**45**	**140**	**32.1%**	**6%**
Mill Plain														
I-5	- Ft. Vancouver	0.17	1800	635	0.35	2%		31	20					
Ft. Vancouver	- Reserve St.	0.46	1800	584	0.32	3%		82	20					
Reserve St.	- Grand Blvd.	0.57	1800	527	0.29	1%		58	35	37	280	246	113.8%	
Grand Blvd.	- Brandt Rd.	0.57	1800	527	0.29	6%		56	37					
Brandt Rd.	- MacArthur Blvd.	0.50	1800	570	0.32	3%		50	36					
MacArthur Blvd.	- Devine Rd.	0.24	1800	502	0.28	4%		30	29					
Devine Rd.	- Andresen Rd.	0.58	1800	720	0.40	3%	1.10	55	38					
Andresen Rd.	- 87th/Leiser Rd.	0.89	1800	568	0.32	3%		87	37	37	205	246	83.3%	
87th/Leiser Rd.	- 97/98th Ave.	0.52	1800	689	0.38	3%		68	28					
97/98th Ave.	- 104/105th Ave.	0.36	1800	772	0.43	3%		38	34					
104/105th Ave.	- I-205	0.29	1800	853	0.47	3%		70	15					
		5.15		**853**	**0.35**	**3%**	**1.10**	**625**	**30**	**37**	**205**	**246**	**83.3%**	**13.7%**
Mill Plain														
I-205	- Chkalov Drive	0.21	3000	1837	0.61	0%		19	40	37	158	246	64.2%	
Chkalov Drive	- 124th Ave.	0.48	2400	1263	0.53	0%	1.14	55	31					
124th Ave.	- 136th Ave.	0.60	2400	1189	0.50	0%		91	24					
136th Ave.	- Park Crest Ave.	0.49	2400	1286	0.54	0%		47	38					
Park Crest Ave.	- 164th Ave.	0.88	2400	698	0.29	5%		110	29					
		2.66		**1837**	**0.48**	**5%**	**1.14**	**322**	**30**	**37**	**116**	**240**	**48.3%**	**12.3%**

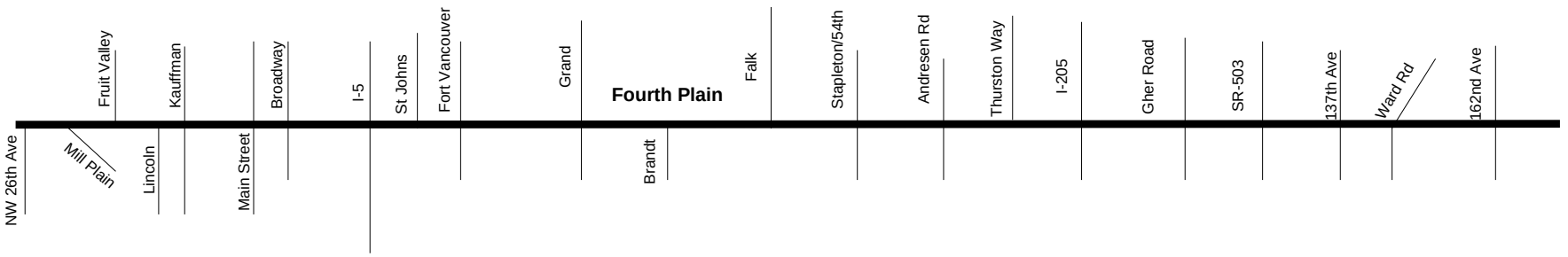


Mill Plain Blvd. Corridor

PM Peak			Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
			Length	Capacity	PM - Nouthbound/Eastbound										
Mill Plain/SR 501															
I-5	-	Main St.	0.32	2400	1638	0.68	2%		50	23					
Main St.	-	Lincoln	0.63	2400	1001	0.42	9%		97	23	25	44	105	41.9%	
Lincoln	-	Fourth Plain	0.76	1800	368	0.20	13%	1.13	79	35					
			1.71		**1638**	**0.47**	**6%**	**1.13**	**226**	**27**	**25**	**44**	**105**	**41.9%**	**4%**
Mill Plain															
I-5	-	Ft. Vancouver	0.17	1800	1180	0.66	1%		31	20					
Ft. Vancouver	-	Reserve St.	0.46	1800	705	0.39	2%		45	37					
Reserve St.	-	Grand Blvd.	0.57	1800	611	0.34	1%		74	28	37	206	246	83.7%	
Grand Blvd.	-	Brandt Rd.	0.57	1800	602	0.33	2%		62	33					
Brandt Rd.	-	MacArthur Blvd.	0.50	1800	714	0.40	2%		57	32					
MacArthur Blvd.	-	Devine Rd.	0.24	1800	584	0.32	1%		47	18					
Devine Rd.	-	Andresen Rd.	0.58	1800	861	0.48	1%	1.23	70	30					
Andresen Rd.	-	87th Ave.	0.89	1800	898	0.50	1%		97	33	37	221	246	89.8%	
87th Ave.	-	98th Ave.	0.52	1800	993	0.55	1%		87	22					
98th Ave.	-	105th Ave.	0.40	1800	940	0.52	1%		88	16					
105th Ave.	-	I-205	0.25	1800	1192	0.66	1%		60	15					
			5.15		**1192**	**0.47**	**1%**	**1.23**	**718**	**26**	**37**	**221**	**246**	**89.8%**	**13.7%**
Mill Plain															
I-205	-	Chkalov Drive	0.21	3000	2713	0.90	1%		82	9	37	192	246	78.0%	
Chkalov Drive	-	124th Ave.	0.48	2400	1926	0.80	2%	1.30	79	22					
124th Ave.	-	136th Ave.	0.60	2400	1754	0.73	2%		87	25					
136th Ave.	-	Park Crest Ave.	0.49	2400	1790	0.75	2%		60	29					
Park Crest Ave.	-	164th Ave.	0.88	2400	992	0.41	2%		152	21					
			2.66		**2713**	**0.71**	**2%**	**1.30**	**460**	**21**	**37**	**192**	**240**	**80.0%**	**12.3%**

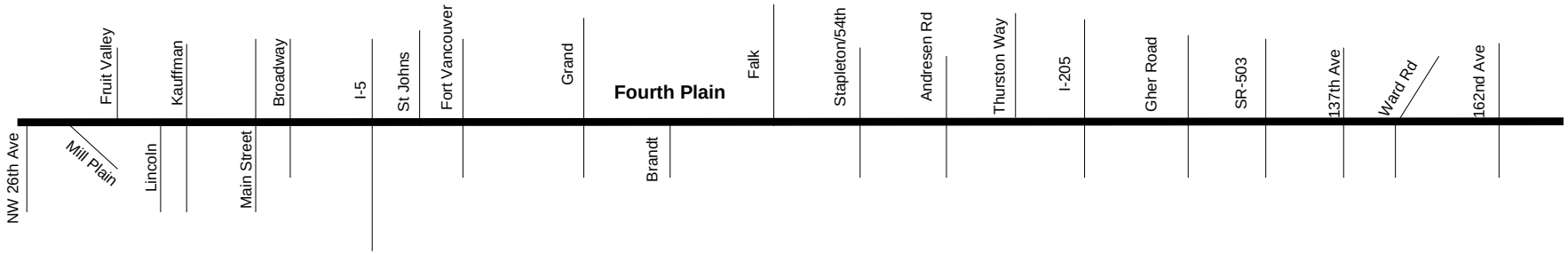


Fourth Plain Blvd. Corridor															
AM Peak		**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
		Length	**Capacity**	**AM - Nouthbound/Eastbound**										
Fourth Plain/SR 501														
I-5	- Main St.	0.49	900	659	0.73	9%		90	20	4	255	328	77.7%	
Main St.	- Kaufman	0.45	900	547	0.61	13%		56	29					
Kaufman	- Fruit Valley Rd.	0.56	900	349	0.39	15%	1.09	66	31					
Fruit Valley Rd.	- Mill Plain	0.14	900	553	0.61	10%	1.03	31	16					
Mill Plain	- Port of Vancouver	0.20	900	402	0.45	36%		16	45					
		1.84		**659**	**0.59**	**15%**	**1.06**	**259**	**26**	**4**	**255**	**328**	**77.7%**	**18.2%**
Fourth Plain														
I-5	- St. Johns Blvd.	0.36	1800	456	0.25	0%		46	28					
St. Johns Blvd.	- Ft. Vancouver	0.34	1800	496	0.28	0%		42	29					
Ft. Vancouver	- Grand Blvd.	0.29	1800	460	0.26	4%		44	24	4,39,44	252	538	46.8%	
Grand Blvd.	- Brandt Rd.	0.56	1800	522	0.29	0%		84	24					
Brandt Rd.	- Falk Rd.	0.21	1700	455	0.27	0%		22	34					
Falk Rd.	- Stapleton Rd.	0.49	1700	403	0.24	0%		68	26					
Stapleton Rd.	- Andresen Rd.	0.79	1700	698	0.41	6%	1.18	105	27					
		3.04		**698**	**0.32**	**5%**	**1.18**	**411**	**27**	**4,39,44**	**252**	**538**	**46.8%**	**29.9%**
Fourth Plain														
Andresen Rd.	- Thurston Way	0.92	1800	530	0.29	5%		135	25					
Thurston Way	- I-205	0.77	1800	448	0.25	4%		87	32					
I-205	- Gher Rd.	0.68	1800	427	0.24	7%		75	33	4,7,44,80	278	702	39.6%	
Gher Rd.	- SR 503	0.45	1800	515	0.29	0%		62	26					
		2.82		**530**	**0.27**	**5%**	**1.13**	**359**	**28**	**4,7,44,80**	**278**	**702**	**39.6%**	**39.0%**
Fourth Plain														
SR 503	- 137th Ave.	1.06	1800	1632	0.91	3%		135	28	44,72	36	234	15.4%	
137th Ave.	- Ward Rd.	0.49	1800	1102	0.61	0%		62	28					
Ward Rd.	- 162nd Ave.	0.73	1800	700	0.39	3%		71	37					
		2.28		**1632**	**0.75**	**3%**	**1.13**	**268**	**31**	**44,72**	**36**	**234**	**15.4%**	**13.0%**



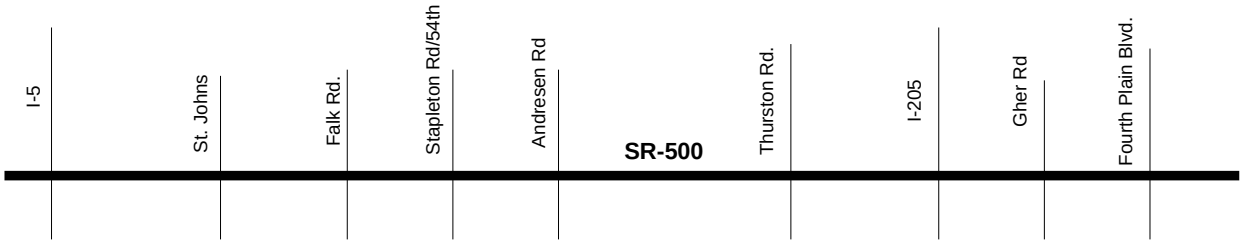
Fourth Plain Blvd. Corridor

PM Peak		Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
		Length	Capacity	PM - Nouthbound/Eastbound										
Fourth Plain/SR 501														
I-5	- Broadway	0.44	900	763	0.85	4%		64	25	4	334	328	101.8%	
Broadway	- Kaufman	0.50	900	603	0.67	5%		145	12					
Kaufman	- Fruit Valley Rd.	0.56	900	366	0.41	5%	1.22	76	27					
Fruit Valley Rd.	- Mill Plain Blvd.	0.14	900	480	0.53	5%		18	28					
Mill Plain Blvd.	- NW 26th Av.	0.19	900	387	0.43	7%	1.18	29	24					
		1.83		**763**	**0.65**	**5%**	**1.20**	**332**	**20**	**4**	**334**	**328**	**101.8%**	**18.2%**
Fourth Plain														
I-5	- St. Johns Blvd.	0.36	1800	760	0.42	2%		40	32					
St. Johns Blvd.	- Ft. Vancouver	0.34	1800	691	0.38	2%		86	14					
Ft. Vancouver	- Grand Blvd.	0.29	1800	766	0.43	2%		68	15	4,39,44	436	497	87.7%	
Grand Blvd.	- Brandt Rd.	0.56	1800	741	0.41	2%		78	26					
Brandt Rd.	- Falk Rd.	0.21	1700	863	0.51	2%		28	27					
Falk Rd.	- Stapleton Rd.	0.49	1700	808	0.48	2%		114	15					
Stapleton Rd.	- Andresen Rd.	0.79	1700	1192	0.70	2%	1.34	148	19					
		3.04		**1192**	**0.53**	**2%**	**1.34**	**562**	**19**	**4,39,44**	**436**	**497**	**87.7%**	**27.6%**
Fourth Plain														
Andresen Rd.	- Thurston Way	0.92	1800	1006	0.56	2%		163	20					
Thurston Way	- I-205 Mid	0.77	1800	836	0.46	2%		112	25					
I-205 Mid	- Gher Rd.	0.68	1800	883	0.49	2%		112	22	4,7,44,80	338	661	51.1%	
Gher Rd.	- SR 503	0.45	1800	942	0.52	2%		111	15					
		2.82		**1006**	**0.51**	**2%**	**1.22**	**498**	**20**	**4,7,44,80**	**338**	**661**	**51.1%**	**36.7%**
Fourth Plain														
SR 503	- 137th Ave.	1.06	2000	1967	0.98	3%		160	24	44,72	26	193	13.5%	
137th Ave.	- Ward Rd.	0.49	1800	1352	0.75	2%		53	33					
Ward Rd.	- 162nd Ave.	0.73	1800	1013	0.56	2%		113	23					
		2.28		**1967**	**0.85**	**2%**	**1.22**	**326**	**25**	**44,72**	**26**	**193**	**13.5%**	**9.7%**

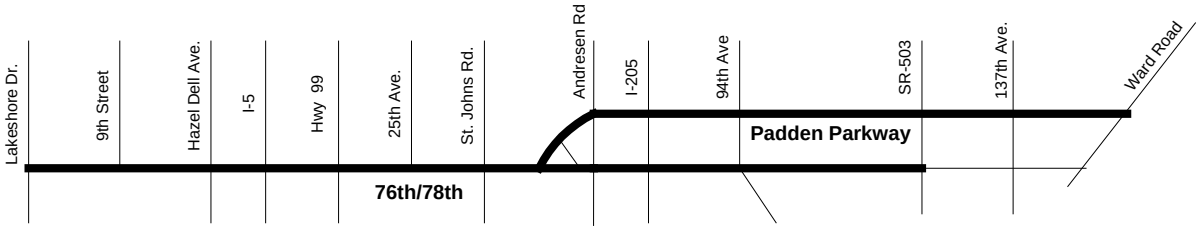


SR-500 Corridor														
AM Peak		**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
		Length	**Capacity**	**AM - Nouthbound/Eastbound**										
SR 500														
I-5	- St. Johns/Grand	1.20	2400	1866	0.78	5%		87	50					
St. Johns/Grand	- Falk Rd.	0.65	2400	2091	0.87	4%		54	43	190	69	82	84.1%	
Falk Rd.	- Stapleton Rd./54th	0.57	2400	2135	0.89	0%		59	35					
Stapleton Rd./54th	- Andresen Rd.	1.13	2400	1821	0.76	0%	1.14	83	49					
		3.55		**2135**	**0.81**	**5%**	**1.14**	**283**	**45**	**190**	**69**	**82**	**84.1%**	**3.4%**
SR 500														
Andresen Rd.	- Thurston Way	0.66	4000	2370	0.59	0%		42	57					
Thurston Way	- I-205	0.52	4800	2829	0.59	3%		33	57					
I-205	- Gher Rd.	1.00	4000	3493	0.87	5%		65	55					
Gher Rd.	- SR 503	0.22	5800	2277	0.39	0%		18	44					
		2.40		**3493**	**0.72**	**4%**	**1.13**	**158**	**55**	**N/A**	**0**	**0**	**0.0%**	**0.0%**

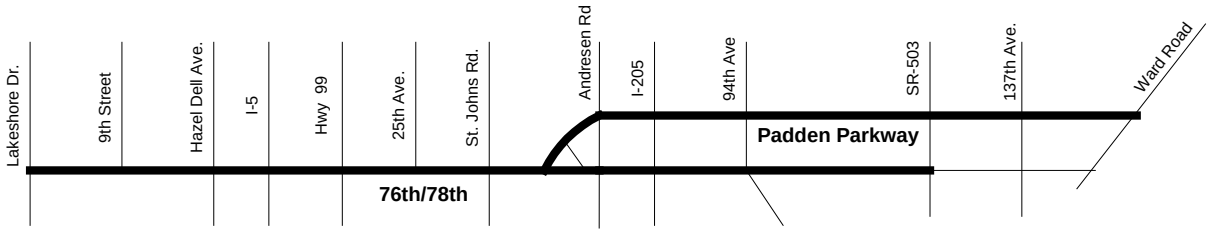
SR-500 Corridor														
PM Peak		**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
		Length	**Capacity**	**PM - Nouthbound/Eastbound**										
SR 500														
I-5	- St. Johns/Grand	1.09	2400	1919	0.80	3%		147	27					
St. Johns/Grand	- Falk Rd.	0.65	2400	2088	0.87	3%		55	43	190	44	164	26.8%	
Falk Rd.	- Stapleton Rd./54th	0.57	2400	2112	0.88	2%		59	35					
Stapleton Rd./54th	- Andresen Rd.	0.26	2400	2201	0.92	2%	1.21	19	49					
		2.57		**2201**	**0.85**	**2%**	**1.21**	**280**	**33**	**190**	**44**	**164**	**26.8%**	**6.8%**
SR 500														
Andresen Rd.	- Thurston Way	0.90	4000	2558	0.64	2%		56	58					
Thurston Way	- I-205	0.81	4800	3064	0.64	2%		51	57					
I-205	- Gher Rd.	0.42	4000	2219	0.55	5%		27	56					
Gher Rd.	- SR 503	1.15	5800	2534	0.44	3%		95	44					
		3.28		**3064**	**0.56**	**3%**	**1.22**	**229**	**52**	**N/A**	**0**	**0**	**0.0%**	**0.0%**



78th/76th/Padden Parkway Corridor														
AM Peak		**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
		Length	**Capacity**	**AM - Nouthbound/Eastbound**										
78th St./76th St.														
Lake Shore Av.	- NW 9th Av.	0.60	1800	494	0.27	7%		84	26					
NW 9th Av.	- Hazel Dell Av.	0.51	1800	773	0.43	7%		56	33					
Hazel Dell Av.	- I-5	0.21	2400	854	0.36	6%		44	17					
I-5	- Hwy 99	0.12	2400	866	0.36	7%		27	16					
Hwy 99	- 25th Ave.	0.76	1800	616	0.34	8%		116	24	78	18	70	25.7%	
25th Ave.	- St. Johns Rd.	0.98	1800	665	0.37	7%		89	40					
St. Johns Rd.	- Padden Parkway	0.46	1800	995	0.55	7%		64	26					
Padden Parkway	- Andresen Rd.	0.69	900	307	0.34	6%		96	26					
Andresen Rd.	- Covington/94th	1.27	900	422	0.47	5%		132	35	0	0	0	0.0%	
Covington/94th	- SR-503 (117th)	1.12	900	261	0.29	5%		140	29					
		6.72		**995**	**0.39**	**7%**	**1.13**	**848**	**29**	**7**	**31**	**70**	**44.3%**	**3.9%**
Padden Parkway														
78th St.	- Andresen Rd.	0.71	2600	644	0.25	0%		56	46					
Andresen Rd.	- I-205	0.52	2600	1465	0.56	0%		104	18					
I-205	- 94th Av.	0.76	2600	1383	0.53	3%		60	46					
94th Av.	- SR 503 (117th)	1.12	2600	1449	0.56	0%		103	39					
SR-503	- 137th Av.	0.99	2600	816	0.31	0%		129	28					
Ward Rd.	- 162nd Ave.	0.16	1800	482	0.27	0%		14	41					
		5.36		**1465**	**0.45**	**3%**	**1.13**	**571**	**34**	**N/A**	**0**	**0**	**0.0%**	**0.0%**

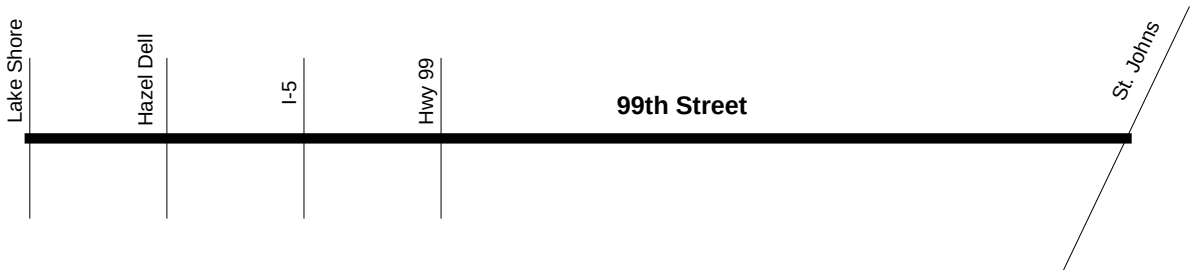


78th/76th/Padden Parkway Corridor														
PM Peak		**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
		Length	**Capacity**	**PM - Nouthbound/Eastbound**										
78th St./76th St.														
Lake Shore Av.	- NW 9th Av.	0.60	1800	404	0.22	3%		74	29					
NW 9th Av.	- Hazel Dell Av.	0.51	1800	1083	0.60	3%		63	29					
Hazel Dell Av.	- I-5	0.21	2400	1219	0.51	3%		68	11					
I-5	- Hwy 99	0.12	2400	1510	0.63	3%		37	12					
Hwy 99	- 25th Ave.	0.76	1800	1127	0.63	3%		73	37	78	21	70	30.0%	
25th Ave.	- St. Johns Rd.	0.98	1800	1058	0.59	3%		118	30					
St. Johns Rd.	- Padden Parkway	0.46	1800	1600	0.89	4%		44	38					
Padden Parkway	- Andresen Rd.	0.69	900	542	0.60	6%		132	19					
Andresen Rd.	- Covington/94th	1.27	900	764	0.85	4%		145	32	7	36	70	51.4%	
Covington/94th	- SR-503	1.12	900	477	0.53	5%		208	19					
		6.72		**1600**	**0.66**	**4%**	**1.22**	**962**	**25**	**7**	**36**	**70**	**51.4%**	**3.9%**
Padden Parkway														
78th St.	- Andresen Rd.	0.71	2600	847	0.33	3%		94	27					
Andresen Rd.	- I-205	0.21	2600	1763	0.68	4%		34	22					
I-205	- 94th Av.	1.07	2600	1556	0.60	3%		120	32					
94th Av.	- SR-503 (117th)	1.12	2600	1348	0.52	3%		124	33					
SR-503	- 137th Ave.	0.99	2600	1000	0.38	3%		97	37					
137th Ave.	- 162nd Ave.	1.10	2600	830	0.32	3%		91	44					
		4.49		**1763**	**0.48**	**3%**	**1.22**	**466**	**35**	**N/A**	**0**	**0**	**0.0%**	**0.0%**



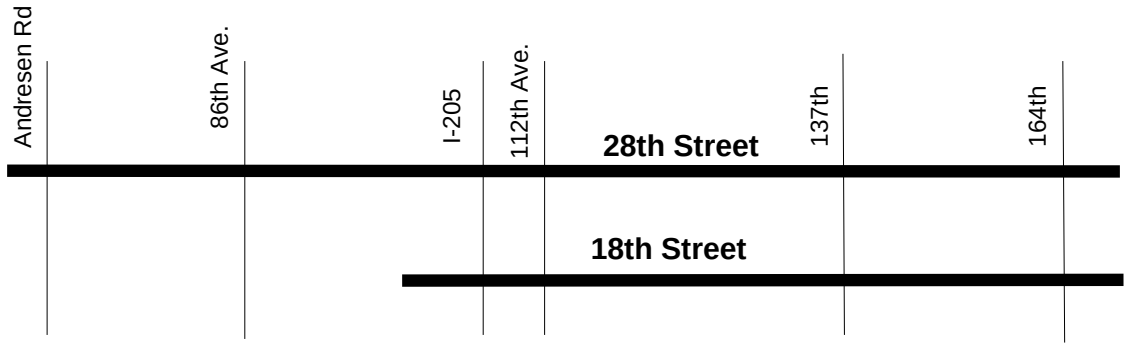
99th Street Corridor														
AM Peak	**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
	Length	**Capacity**	**AM - Nouthbound/Eastbound**										
99th Street													
Lake Shore Av. - NW 9th Av.	1.09	1200	669	0.56	2%		135	29					
NW 9th Av. - Hazel Dell Av.	0.49	1700	617	0.36	2%		68	26					
Hazel Dell Av. - I-5	0.37	1700	988	0.58	4%		58	23					
I-5 - Hwy 99	0.22	1800	825	0.46	4%		34	23					
Hwy 99 - 25th Ave.	0.50	1800	516	0.29	3%		79	23					
25th Ave. - St. Johns Rd.	1.43	900	424	0.47	2%		164	31	25	49	105	46.7%	
	4.09		**988**	**0.48**	**3%**	**1.13**	**538**	**27**	**25**	**49**	**105**	**46.7%**	**5.8%**

99th Street Corridor														
PM Peak	**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
	Length	**Capacity**	**PM - Nouthbound/Eastbound**										
99th Street													
Lake Shore Av. - NW 9th Av.	1.09	1200	748	0.62	2%		112	35					
NW 9th Av. - Hazel Dell Av.	0.49	1700	776	0.46	2%		61	29					
Hazel Dell Av. - I-5	0.37	1700	1452	0.85	1%		98	14					
I-5 - Hwy 99	0.22	1800	1084	0.60	2%		81	10					
Hwy 99 - 25th Ave.	0.50	1800	789	0.44	2%		52	35					
25th Ave. - St. Johns Rd.	1.43	900	614	0.68	2%		181	28	25	39	140	27.9%	
	4.10		**1452**	**0.63**	**2%**	**1.22**	**585**	**25**	**25**	**39**	**140**	**27.9%**	**7.8%**



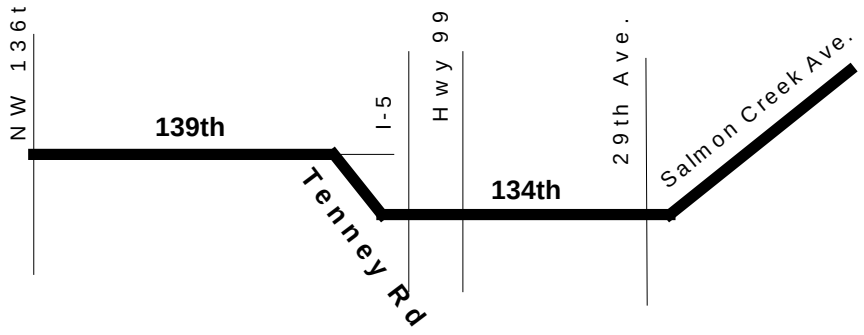
28th/18th Street Corridor														
AM Peak	**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
	Length	**Capacity**	**AM - Nouthbound/Eastbound**										
28th Street													
Andresen Rd. - 86th Ave.	0.73	1200	679	0.57	0%		115	23	30	124	164	75.6%	
86th Ave. - 112th Ave.	1.35	1800	500	0.28	3%		150	32					
112th Ave. - 137th Ave.	1.31	1800	842	0.47	0%		209	23					
137th Ave. - 164th Ave.	1.18	900	322	0.36	5%		179	24					
	4.57		**842**	**0.42**	**4%**	**1.13**	**653**	**25**	**30**	**124**	**164**	**75.6%**	**6.8%**
18th Street													
112th Ave. - 137th Ave.	1.30	800	680	0.85	3%		168	28	177	52	82	63.4%	
137th Ave. - 164th Ave.	1.17	800	750	0.94	5%		167	25					
	2.47		**750**	**0.89**	**4%**	**1.13**	**335**	**27**	**177**	**52**	**82**	**63.4%**	**5.1%**

28th/18th Street Corridor													
PM Peak	**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
	Length	**Capacity**	**PM - Nouthbound/Eastbound**										
28th Street													
Andresen Rd. - 86th Ave.	0.73	900	711	0.79	2%		155	17	30	110	164	67.1%	
86th Ave. - 112th Ave.	1.35	1800	714	0.40	2%		189	26					
112th Ave. - 137th Ave.	1.31	1800	1017	0.57	3%		210	22					
137th Ave. - 164th Ave.	1.18	900	393	0.44	2%		160	27					
	4.57		**1017**	**0.53**	**2%**	**1.22**	**714**	**23**	**30**	**110**	**164**	**67.1%**	**9.1%**
18th Street													
112th Ave. - 138th Ave.	1.30	800	898	1.12	2%		134	35	177	35	123	28.5%	
138th Ave. - 164th Ave.	1.17	800	870	1.09	2%		206	20					
	2.47		**898**	**1.11**	**2%**	**1.22**	**340**	**26**	**177**	**35**	**123**	**28.5%**	**7.7%**



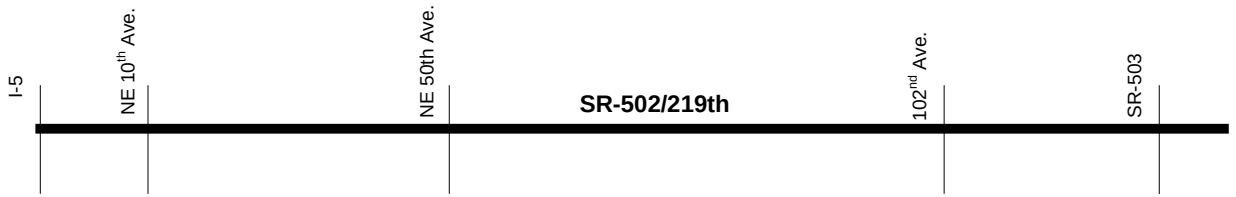
134th/139th Street Corridor													
AM Peak	**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
	Length	**Capacity**	**AM - Nouthbound/Eastbound**										
134th St./139th St./Salmon Creek Ave.													
NW 36th Ave. - NW 11th Ave.	1.23	800	592	0.74	3%	1.27	173	26					
NW 11th Ave. - NE 10th Ave.	1.13	1800	822	0.46	6%		144	28	9	1	46	2.2%	
NE 10th Ave. - I-5	0.28	1800	1315	0.73	5%		42	24					
I-5 - I-205 NB Ramp	0.38	1800	1051	0.58	5%		77	18	19	3	92	3.3%	
I-205 NB Ramp - Salmon Cr. Ave.	0.44	900	498	0.55	4%		44	36					
Salmon Cr. Ave. - 50th Ave.	1.48	900	253	0.28	4%		161	33					
	4.94		**1315**	**0.56**	**5%**	**1.27**	**641**	**28**	**9**	**1**	**46**	**2.2%**	**2.6%**

134th/139th Street Corridor													
PM Peak	**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
	Length	**Capacity**	**PM - Nouthbound/Eastbound**										
134th St./139th St./Salmon Creek Ave.													
NW 36th Ave. - NW 11th Ave.	1.23	800	546	0.68	2%	1.27	118	38					
NW 11th Ave. - NE 10th Ave.	1.13	1800	1031	0.57	2%		152	27	9	3	46	6.5%	
NE 10th Ave. - I-5	0.28	1800	1459	0.81	2%		61	17					
I-5 - I-205 NB off-ramp	0.38	1800	1509	0.84	2%		115	12	19	7	92	7.6%	
I-205 NB off-ramp - Salmon Cr. Ave.	0.44	900	759	0.84	2%		53	30					
Salmon Cr. Ave. - 50th Ave.	1.48	900	418	0.46	1%		142	38					
	4.94		**1509**	**0.66**	**2%**	**1.27**	**641**	**28**	**9**	**3**	**46**	**6.5%**	**2.6%**



SR-502/219th St. Corridor														
AM Peak		**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
		Length	**Capacity**	**AM - Nouthbound/Eastbound**										
SR 502														
I-5	- 10th Ave.	0.26	2400	244	0.10	5%		19	49					
10th Ave.	- 50th Ave.	1.96	800	468	0.59	7%		152	46					
50th Ave.	- 102nd Ave	1.97	800	669	0.84	6%	1.09	173	41					
102nd Ave.	- SR-503	1.51	1800	690	0.38	5%		154	35	47	12	23	52.2%	
		5.70		**690**	**0.61**	**6%**	**1.09**	**498**	**41**	**47**	**12**	**23**	**52.2%**	**0.6%**

SR-502/219th St. Corridor														
PM Peak		**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
		Length	**Capacity**	**PM - Nouthbound/Eastbound**										
SR 502														
I-5	- 10th Ave.	0.26	2400	428	0.18	5%		29	32					
10th Ave.	- 50th Ave.	1.96	800	540	0.68	6%		149	47					
50th Ave.	- 102nd Ave	1.97	800	825	1.03	7%	1.22	196	36					
102nd Ave.	- SR-503	1.51	1800	1185	0.66	3%		223	24	47	12	23	52.2%	
		5.70		**1185**	**0.78**	**5%**	**1.22**	**597**	**34**	**47**	**12**	**23**	**52.2%**	**0.6%**



SR-501 & La Center Road Corridors														
AM Peak		**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
		Length	**Capacity**	**AM - Nouthbound/Eastbound**										
SR 501														
I-5	- 45th Ave.	0.80	800	529	0.66	8%		83	35	LC/Rid. Connector	9	23	39.1%	
45th Ave.	- 9th St.	1.75	800	376	0.47	7%		151	42					
		2.55		**529**	**0.54**	**8%**	**1.13**	**234**	**39**	**LC/Rid. Connect**	**9**	**23**	**39.1%**	**1.4%**
La Center Rd.														
I-5	- E. Fork Lewis Rv.	1.79	1000	557	0.56	3%		148	44	LC/Rid. Connector	8	23	34.8%	
		1.79		**557**	**0.56**	**3%**	**1.13**	**148**	**44**	**LC/Rid. Connect**	**8**	**23**	**34.8%**	**1.2%**

SR-501 & La Center Road Corridors														
PM Peak		**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
		Length	**Capacity**	**PM - Nouthbound/Eastbound**										
SR 501														
I-5	- 45th Ave.	0.80	800	548	0.69	10%		74	39	LC/Rid. Connector	9	23	39.1%	
45th Ave.	- 9th St.	1.75	800	462	0.58	7%		152	41					
		2.55		**548**	**0.62**	**9%**	**1.22**	**226**	**41**	**LC/Rid. Connect**	**9**	**23**	**39.1%**	**1.4%**
La Center Rd.														
I-5	- E. Fork Lewis Rv.	1.79	1000	641	0.62	3%		148	44	LC/Rid. Connector	8	23	34.8%	
		1.79		**641**	**0.62**	**3%**	**1.22**	**148**	**44**	**LC/Rid. Connect**	**8**	**23**	**34.8%**	**1.2%**