CONGESTION MANAGEMENT REPORT

June 2002

RTC

Southwest Washington
Regional Transportation Council

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER I.
INTRODUCTION

A. PURPOSE

The purpose of the Congestion Management System (CMS) is to improve how transportation system performance is measured and analyzed. This is accomplished through comprehensive data collection, development of a system monitoring program, the identification of performance measures, development of system performance methodologies, and the preparation of a Congestion Management Report.

Traffic congestion negatively impacts the region's natural environment, economy, and quality of life. RTC's first CMS report was initiated as a result of the 1991 Intermodal Surface Transportation Efficiency Act which required regions like the Vancouver/Clark County urban area to develop congestion management systems. The federal interest in management systems was to have the regional planning process develop better analysis tools through the collection and monitoring of performance data. This Act required that any federally funded facility being considered for capacity expansion must be analyzed through the CMS process. The 1998 Transportation Equity Act for the 21st Century amended this requirement. This 1998 Act recognized the value of the CMS by directing regions like ours to continue the data collection and monitoring elements and have a process in place to assess transportation system performance and to evaluate alternative strategies for addressing traffic congestion problems.

The value of the CMS process is to improve the decision-making process by identifying the most congested parts of the transportation system now and in the future. To date, most of the monitoring of congestion in our region has focused on traffic count data. The traffic count data is used to determine the corridor congestion ratio for each of the congestion management corridors. The congestion ratio, similar to volume to capacity ratio, is then converted into a congestion index. The congestion index is like a level-of-service measure except that the index assesses the overall performance of a full corridor instead of the operation of specific intersections. The index is used as a means to classify each corridor according to its relative level of congestion, to identify the need for further evaluation, and to determine how alternative strategies are considered.

The congestion management network consists of 29 regional transportation corridors that are monitored as part of the CMS for the Clark County region.

The performance of the congestion management corridors has previously focused only on the corridor congestion index as a measure of transportation system performance. At the direction of the RTC Board, the 1999 Transportation System Monitoring and Congestion Management Report added several new data elements including travel time, speed, automobile occupancy, truck percentages, and transit ridership and capacity. In addition, the report included other transportation related information compiled and collected by RTC that is not part of the congestion management corridor summaries, but provides other measures of system performance.

This report continues to utilize the results of updated traffic count data, other data collection and the compilation of information from other data sources to provide an overall look at the performance of the regional transportation system.

The development of the 2001 congestion management report includes several components. The intent of the report is to continue existing traffic monitoring and providing transportation system performance information to decision-makers that must identify the most cost-effective strategies for addressing transportation congestion and improving mobility. The key goals of the congestion management monitoring project in 2001 consisted of transportation data collection, analysis of transportation system performance, and the preparation of a Congestion Management Report. The primary activities are summarized below:

Data Assessment/Data Collection: RTC reviewed the status of current data collection and identified additional data needed to enhance the monitoring of the congestion management corridors. Some of the needed data elements are currently collected by other transportation agencies within the Clark County region, such as traffic counts and transit ridership. RTC was responsible for setting up a process for collecting this data on a regular basis. RTC has also initiated and managed the collection of additional traffic counts, automobile occupancy information, travel time data, and transit capacity and ridership information. This included working with local transportation agencies for the collection, compilation, and receipt of data used for monitoring the regional transportation system.

Data Analysis/System Performance: The comprehensive transportation data was analyzed and validated for use in monitoring system performance. The collected data is being applied to develop system performance measures for the transportation corridors in the congestion management network. This system performance information is used to identify system needs and solutions and will be incorporated in the Metropolitan Transportation Plan. The transportation data is also being used to enhance the regional traffic count program, initiate the establishment of a comprehensive transportation data program, and improve the regional travel forecasting model.

Data Distribution/Reporting: The collected system data is distributed to local member agencies and the general public for congestion analysis and other transportation efforts. Regional traffic count data has already been made available through map object application and on the Internet at www.rtc.wa.gov/tc/explain.htm.

The traffic count data is currently used by local agencies for concurrency analysis and for other transportation-related analysis. This activity includes the production and distribution of this report. The detailed database established for this project is included in this report and is available online through RTC's web page.

B. SCOPE

The scope of the CMS originally began with an emphasis on traffic volumes and transportation facility capacity to monitor transportation system congestion through the development of a corridor congestion index. The corridor congestion index provides an aggregate picture on the capacity of the regional transportation system. It utilizes segment by segment traffic volume and capacity data for the congestion management corridors to develop a single congestion value. It was important to incorporate a wider range of data into the CMS process as monitoring the regional transportation system became more important.

1. CONGESTION MANAGEMENT SYSTEM

a. Foundation for Analysis of System Performance

The CMS serves as the foundation for monitoring the regional transportation system and for providing ongoing information. The monitoring element of the congestion management network is designed as an informational tool to be used within the decision-making process. It is also intended to provide an understanding of the transportation system's operating conditions and deficiencies and to assess the impacts of alternative improvement strategies. In this way, it will help to focus efforts while allowing flexibility in the project selection process. The keys to the approach used in developing the framework for the CMS were:

- focus upon congestion
- be practical and easy to apply
- emphasize regional travel characteristics

The initial approach to use roadway congestion as the foundation of the Vancouver/Clark County CMS was selected, in part, to maintain simplicity and because of the lack of a satisfactory multimodal measure. RTC has continued the annual data collection to enhance and update the existing traffic count data base. Traffic counts were collected primarily for the congestion management corridors. In addition, RTC has coordinated with Washington State Department of Transportation and local jurisdictions to compile traffic count data, including turn movements, throughout Clark County. This traffic count program builds the base for the CMS.

The second characteristic of the initial Vancouver/Clark County CMS is that it is practical and easy to apply. While a more complex system is ultimately more appropriate, a simpler system was implemented at first. As experience with the CMS is gained, more complexity and detail is being added. The 1999 CMS was the beginning of that process. The third point is that the CMS has been designed from a regional perspective. Certain elements of the CMS, such as the network, were designed from this perspective to provide a regional picture of the transportation system rather than focusing on local arterials. The potential exists to expand the CMS in the future to include more detail as is deemed necessary. Also, the CMS is a passive system that provides the information needed to support the decision-making process. Again, this approach was taken to ensure a more manageable system that, in the future, may be adapted to be more active.

The CMS has been evolving to incorporate time-based and other multimodal measures to improve knowledge regarding the operation of the transportation system and the characteristics of regional travel. Within the CMS, the new multimodal data elements described in part (b) of this section will allow better tools for the analysis and management of congestion.

b. Expansion of Existing CMS

Until the 1999 report, the CMS data monitoring, as mentioned previously, has focused only on congestion. In order to provide a more comprehensive analysis of the operation of the transportation system, the CMS was expanded to include additional data elements. The additional data provides better support for travel demand analysis and includes travel time, auto occupancy, and transit ridership and capacity. The expansion of the CMS data facilitates a more complete picture of the characteristics of the transportation system and better analysis and consideration of travel demand strategies.

Except for the traffic count program, there has been a lack of easily accessible transportation data available in the region for use in the CMS. In addition to coordination with other transportation agencies for the receipt of traffic count data, there were two key activities conducted since 1999 by Clark County transportation agencies that supported the expansion of the CMS monitoring element.

The City of Vancouver and Clark County initiated an extensive travel time data collection effort to support the concurrency program. This effort provided the groundwork for travel time and speed information incorporated in the CMS monitoring process. RTC reviewed the concurrency travel time data, which included most of the congestion management corridors and contracted to collect additional travel time information for the congestion management corridors that were not part of the City's or County's effort. RTC appended the local concurrency travel time data to match the congestion management corridors.

In 2000, RTC coordinated with C-TRAN for the collection of peak period passenger counts for every transit route along congestion management corridors. RTC utilized this detailed ridership information, along with route schedules and bus vehicle capacities to develop transit summary data for each of the congestion management corridors.

RTC also initiated a new effort for the collection of automobile occupancy information at key locations on various regional transportation facilities within the Vancouver urbanized area. A representative automobile occupancy rate by facility type and geographic area was developed based on analysis of the fifteen locations in the region for which data was collected. This information is critical in tracking and evaluating alternative and other multimodal strategies.

c. Description of CMS Corridor Concept and Network

1) CMS 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 for more than one transportation facility. The multi-facility corridors occur where there is more than one route within a corridor serving the same function and to support the concept that transit or transportation demand management services and improvements are likely to impact a corridor rather than a single facility. A corridor approach that incorporates parallel routes and transit services provides a regional orientation and responds to the multimodal and alternative travel themes of the Federal Transportation Act. In fact, when the corridor congestion index was the primary measure of corridor performance, parallel facilities within a given corridor were aggregated into a single value for reporting purposes. The evaluation of the congestion management corridors for this report has resulted in the reporting of the transportation data for each individual facility that comprises a corridor. This is due, in part, to the fact that the new performance measures provide a better understanding on transportation system performance when reported for individual facilities. In those cases where there is more than one facility in a corridor, the aggregate data will be reported for each of the facilities as the basic unit, rather than for individual links or intersections.

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. Examples of corridor endpoints can include:

- at the endpoints of a facility (e.g., where a major roadway ends)
- at a change in land use patterns
- at a point where the direction of peak flow changes
- at a location where transit service levels 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. Separate portions of a facility may be included in different corridors.

2) CMS Monitoring Network

The boundaries of the Vancouver/Clark County CMS 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. A first cut of the network was defined by those corridors that included one or more regionally significant facility. These regionally significant facilities were those included in the Regional Transportation System and are identified in the Metropolitan Transportation Plan (MTP).

The initial CMS monitoring 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. These corridors (and their component facilities) form a subset of the Vancouver/Clark County Regional Transportation System. As conditions or facilities change, corridors have been modified or refined.

The original CMS network was made up of twenty-one transportation corridors. The 2001 CMS is comprised of twenty-nine corridors. The primary reasons have been to provide more logical breakpoints, to connect to other significant urban areas, or recognize potential future connections. The initial CMS, for example, identified SR-14 as a single corridor from I-5 to 164th Avenue. A review of the data and traffic operations in the corridor and changes in the growth of travel on SR-14 resulted in dividing it into two corridors: I-5 to I-205 and I-205 to 164th Avenue. The existing CMS network is listed in Table 1 and illustrated in Figure 1.

2. Other Transportation System Performance

In addition to the congestion management corridor information, this report also includes other transportation-related information. The additional transportation system performance measures have been separated from the congestion management corridor data because: the data does not relate to the congestion management corridors or the raw CMS monitored data was applied in conjunction with other data to develop other information. The other transportation system elements include peak period vehicle volumes, truck percentages, high volume intersections within Clark County, Columbia River vehicle crossings, transit system passenger ridership, and park and ride capacity. A description of all the data elements including the CMS data is contained in the following section.

3. Description of Data Elements

This section is intended to serve as a glossary of data items and terms and an explanation of the information contained in the summary of transportation system performance in Chapter II and the detailed corridor data in Chapter III.

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

Vehicle Volumes - AM and PM peak hour vehicle volumes were compiled from the 2001 traffic count database and used to derive vehicle volumes for the congestion management corridors. Volumes represent traffic counts for the congestion management corridors and provide a good comparison of the relative differences in travel demand among the congestion management corridors.

Travel Time - In 2001, the City of Vancouver and Clark County collected pm peak period travel time for concurrency purposes along many congestion management corridors. RTC has collected additional travel time data in congestion management corridors that were not part of the 2001 concurrency data collection effort. The process of collecting the additional travel time data matched the local methodology and was used to develop region-wide travel time data for the System Performance Report.

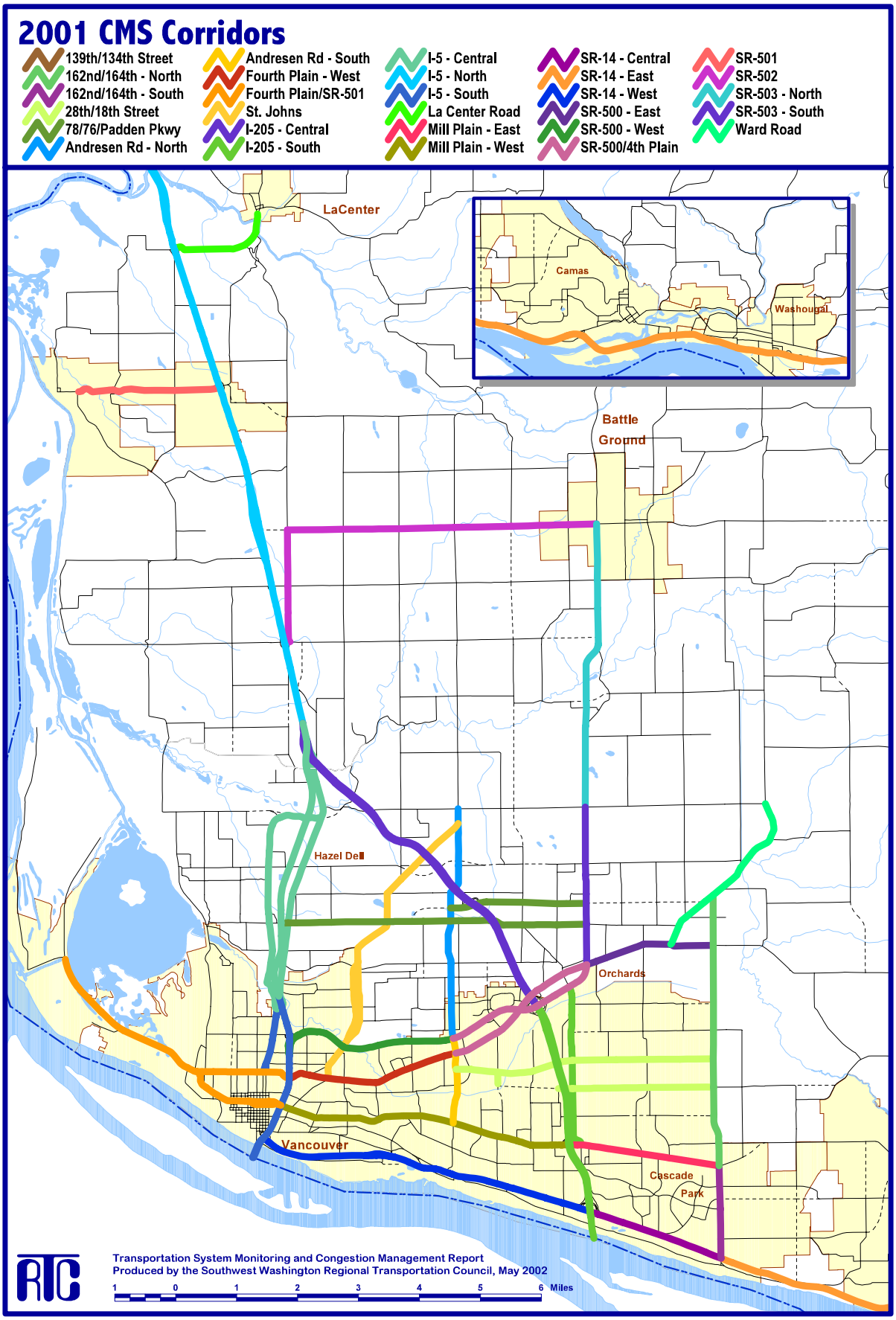
Speed as Percent of Posted Speed - Travel speed was computed from the travel time data calculated in the previous section. It consists of utilizing the travel time and distance information to calculate travel speed. Travel speed was then converted to a percent of posted speed for each of the congestion management corridors. This was intended to provide another measure of the delay along the corridor.

Automobile Occupancy – Average automobile occupancy was collected for the first time in 1999. Average automobile occupancy is calculated by counting 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 was collected for freeways and arterials during the AM, PM, and midday time periods.

Table 1 – Corridors in the CMS 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	State line
I-205 – Central	I-205	I-5 interchange	Fourth Pl./SR 500
I-205 – South	I-205, 112th/Chkalov Dr./Gher Road	Fourth Pl./SR 500	State line
Grand/St. Johns Blvd.	St. Johns Rd./St. James Rd., Fort Vancouver Way, Grand Blvd.	NE 72nd Ave.	Fourth Plain Blvd.
Andresen Road - North	Andresen Rd. / N.E. 72nd Avenue.	119th St	SR 500
Andresen Road - South	Andresen Rd.	SR 500	Mill Plain Blvd.
SR 503 South	SR 503	119th St.	Fourth Pl./SR 500
SR-503 North	SR 503	SR 502	119th St.
Ward Road	Ward Road	119th St.	SR 500
162nd Ave. North	162nd/164th Ave.	Ward Rd.	Mill Plain Blvd.
164th Ave. South	162nd/164th Ave.	Mill Plain Blvd.	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.	County Line
Mill Plain West	Mill Plain	I-5	I-205
Mill Plain East	Mill Plain	I-205	164th Ave.
Fourth Plain West	Fourth Plain	I-5	Andresen Rd.
SR 500 – West	SR 500	I-5	Andresen Rd.
SR 500/Fourth Plain Central	SR 500, Fourth Plain	Andresen Rd.	SR 503
SR 500 – East	SR 500	SR 503	162nd Ave.
78th/76th/Padden Parkway	78th St./76th St., Padden Parkway	I-5	SR 503
Fourth Plain/SR-501	SR-501/Mill Plain, Fourth Plain	I-5	TMA Boundary (Port of Vancouver)
28th St/18th Street	28th Street, 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 Rd.	La Center Rd.	I-5	E. Fork Lewis Rv.

Figure 1 – CMS Map



Transit Capacity Used - The percent of transit seat capacity that is occupied by passengers is calculated by identifying the peak ridership location for the segment within a corridor and calculating the bus capacity at the same location based on transit vehicle type and frequency. Transit capacity used includes all transit riders divided by the transit capacity at the peak location.

In 2000, individual line ridership information was collected by C-TRAN in peak periods for every transit line along congestion management corridor. RTC has compiled this data. In addition, "seat capacity" by line has been compiled based on C-TRAN's 2000 service schedule. This process has allowed the estimation of transit patronage and capacity for the congestion management corridors and individual transit lines.

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 travelling on the roadway. Trucks are defined as vehicles with more than two axles, such as typical tractor/trailer rigs, travelling on the roadway during the peak period.

Highest Volume Intersections - This measure identifies the busiest intersections in Clark County based on the 2001 average weekday traffic volumes entering an intersection.

Columbia River Crossings - Average weekday traffic volumes in both directions crossing the Interstate and Glenn Jackson Bridges between Washington and Oregon.

Transit Seats as Percentage of Vehicle Lane Capacity - A comparison of the seat capacity of transit in the corridor as a percentage of vehicle capacity per lane in the corridor.

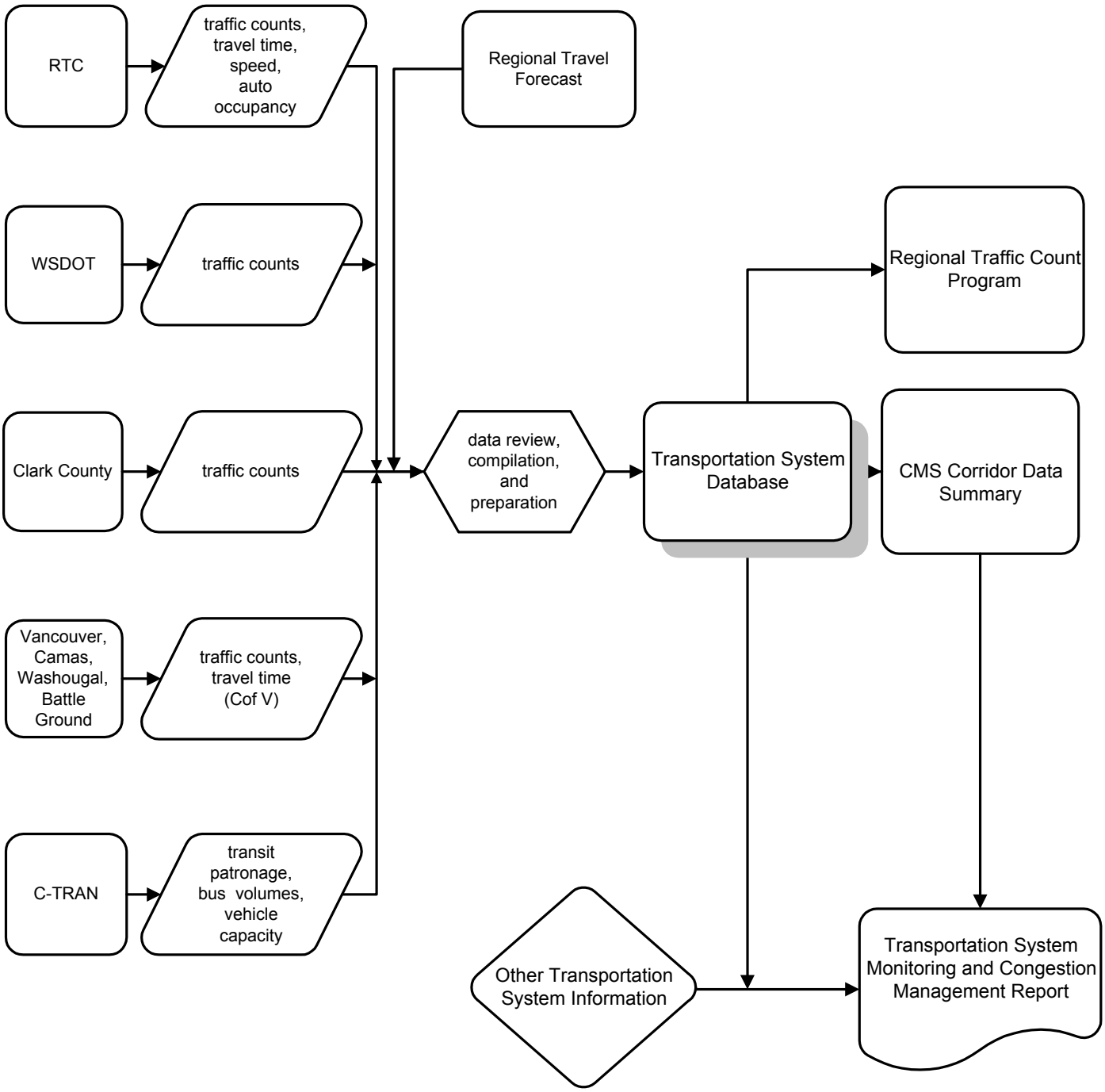
Transit System Ridership - Average weekday ridership by type of service (commuter, urban, and rural) and total weekday transit riders.

Park and Ride Capacity - Identifies vehicle capacity of park and ride lots in Clark County and for the individual facilities. Also includes a discussion of demand at the facilities.

4. TRANSPORTATION DATA COLLECTION AND DISTRIBUTION PROCESS

Figure 2 outlines the data collection and distribution process. Clark County agencies and jurisdictions including RTC collect a wide range of transportation data. Transportation information is reviewed and prepared by RTC for incorporation into the transportation system database. The database is used to develop the regional traffic count program and the CMS corridor summaries. The congestion management corridor data, in conjunction with other transportation system information, make up the information in this report.

Figure 2 - Transportation Data Flow



CHAPTER II.
SUMMARY OF PERFORMANCE

This section contains a discussion and display of information described in the previous chapter. Part A consists of the data compiled and collected for the Congestion Management System (CMS) 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.

A. CONGESTION MANAGEMENT CORRIDORS

1. CORRIDOR CONGESTION RATIO

Figures 3 and 4 display the congestion index for each corridor for both AM and PM periods. The PM period displays higher congestion on most corridors than that experienced in the AM period. The exceptions include the south legs of I-5 and I-205, SR-14, Ward Road, and north leg of 164th Avenue. Most of the AM period congestion can be attributed to the bottlenecks at the two Interstate Bridges. However, the congestion on Ward Road and 164th Avenue may be attributed to morning trip generates like schools. Both the AM and PM periods show congestion along major facilities such as I-5, I-205, SR-14, SR-500/Fourth Plain, Burton Road, 164th Avenue, and Ward Road. In the PM period, additional congestion is shown along Mill Plain-East, SR-503-South, and SR-502. Planned improvements along Ward Road and Burton Road are likely to reduce the congestion index in these corridors.

2. SPEED AS PERCENT OF SPEED LIMIT

In general, facilities with multiple at-grade intersections, display lower speed percentages. The speed percentages for the freeway facilities are close to 100% of the posted speed limit, except for the I-5 South and SR-14 Central corridors. The SR-500 corridor and SR-14 east corridor operated at less than 77% of the posted speed during the AM period. Unlike the other freeway facilities, SR-500 and SR-14 east have several at grade intersections, which affects the average travel speed in the corridor. In the AM period, the lowest percentages are displayed on Mill Plain east of I-205 and the eastern portion of SR-500. In the PM peak, arterials and freeways generally display lower percentages, due to higher congestion (Figure 6). In the PM period, the lowest percentages are displayed on Andresen Rd. south, 164th Av. south, Mill Plain east, SR-500 corridor, and Burton/28th St. corridor. The Fourth Plain, Andresen to SR-503 corridor operated at only 37% of the posted speed in the PM peak. However, the lower speed can be attributed to construction delays in the corridor, between 102nd Av. and SR-503.

3. AUTOMOBILE OCCUPANCY

The 2001 automobile occupancy data showed a decrease in vehicle occupancy on freeways in both AM and PM time periods, with the exception of I-5 South in the AM peak. The AM time period displays the lowest average automobile occupancy for all facility types, with the AM average automobile occupancy at 1.15 persons per vehicle or lower.

Figure 3 - AM Congestion Ratio

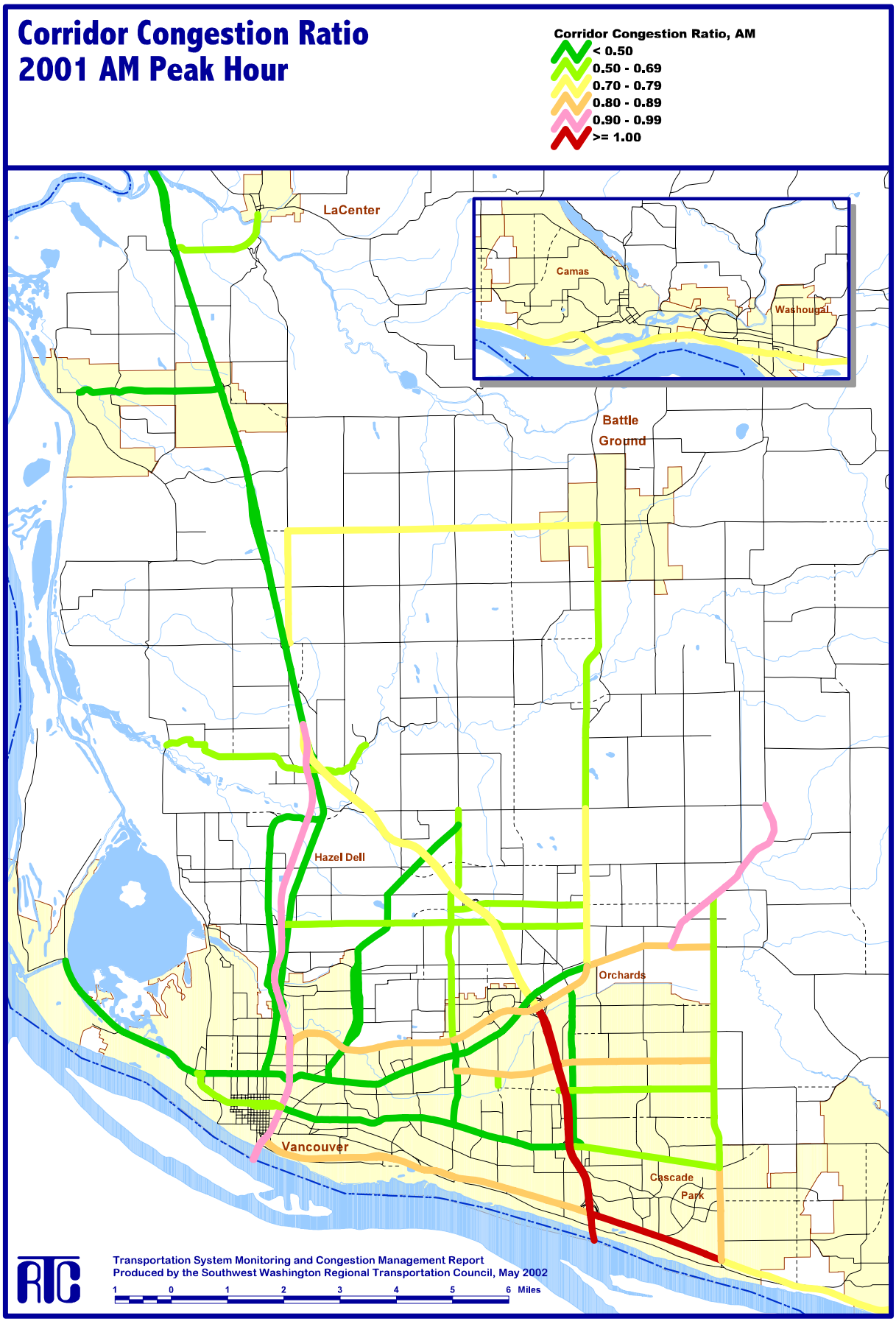


Figure 4 - PM Congestion Ratio

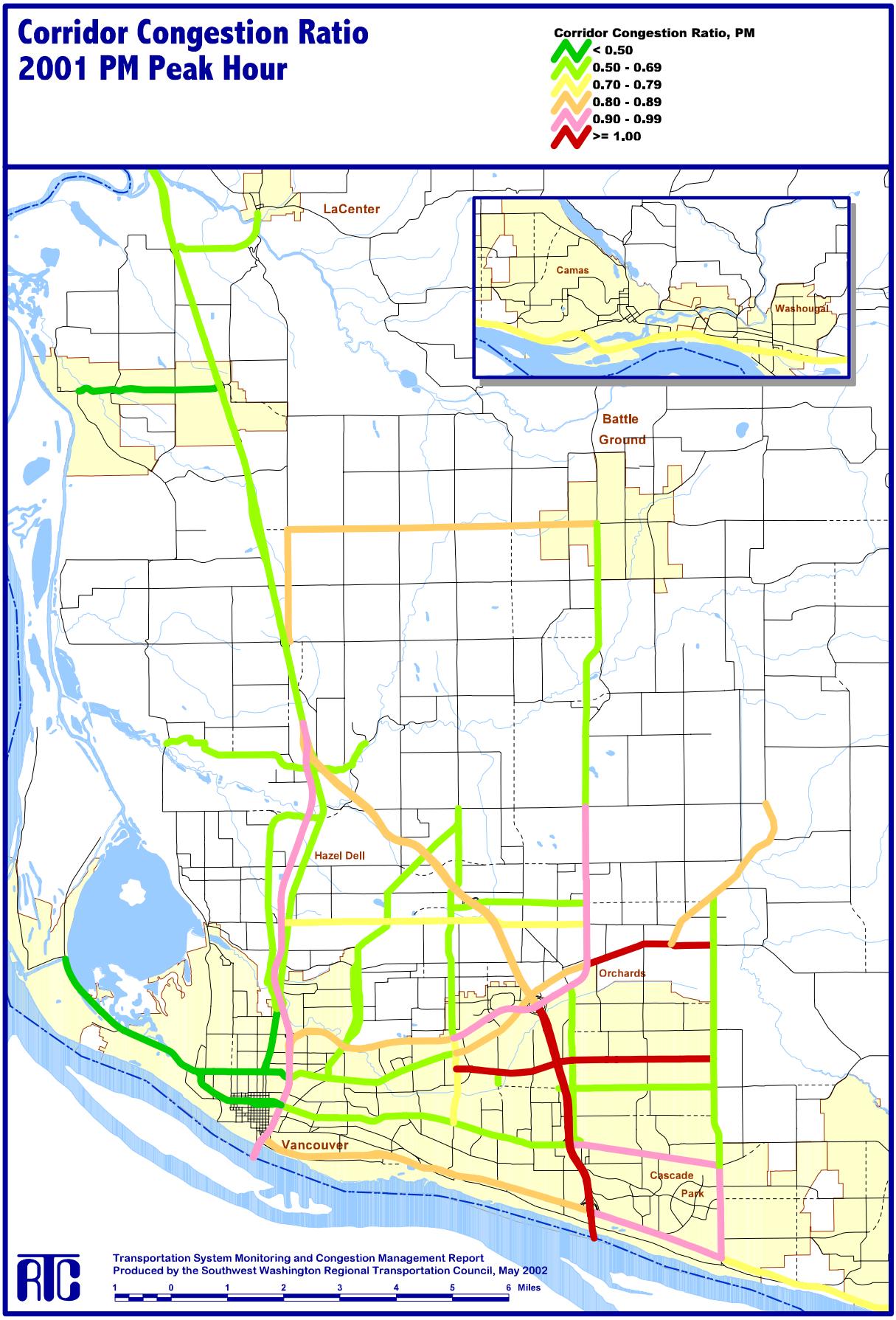


Figure 5 - AM Speed as Percent of Speed Limit

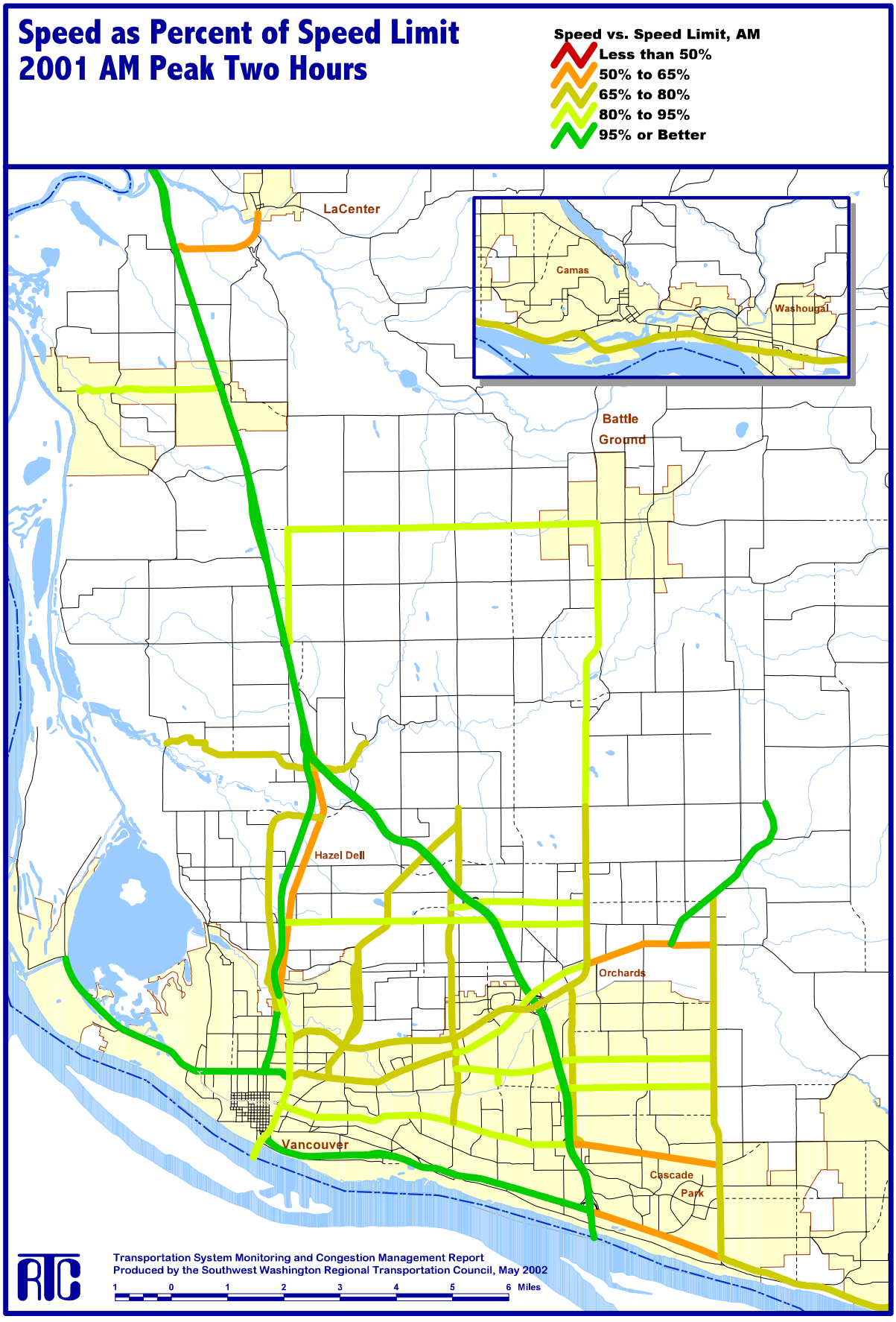
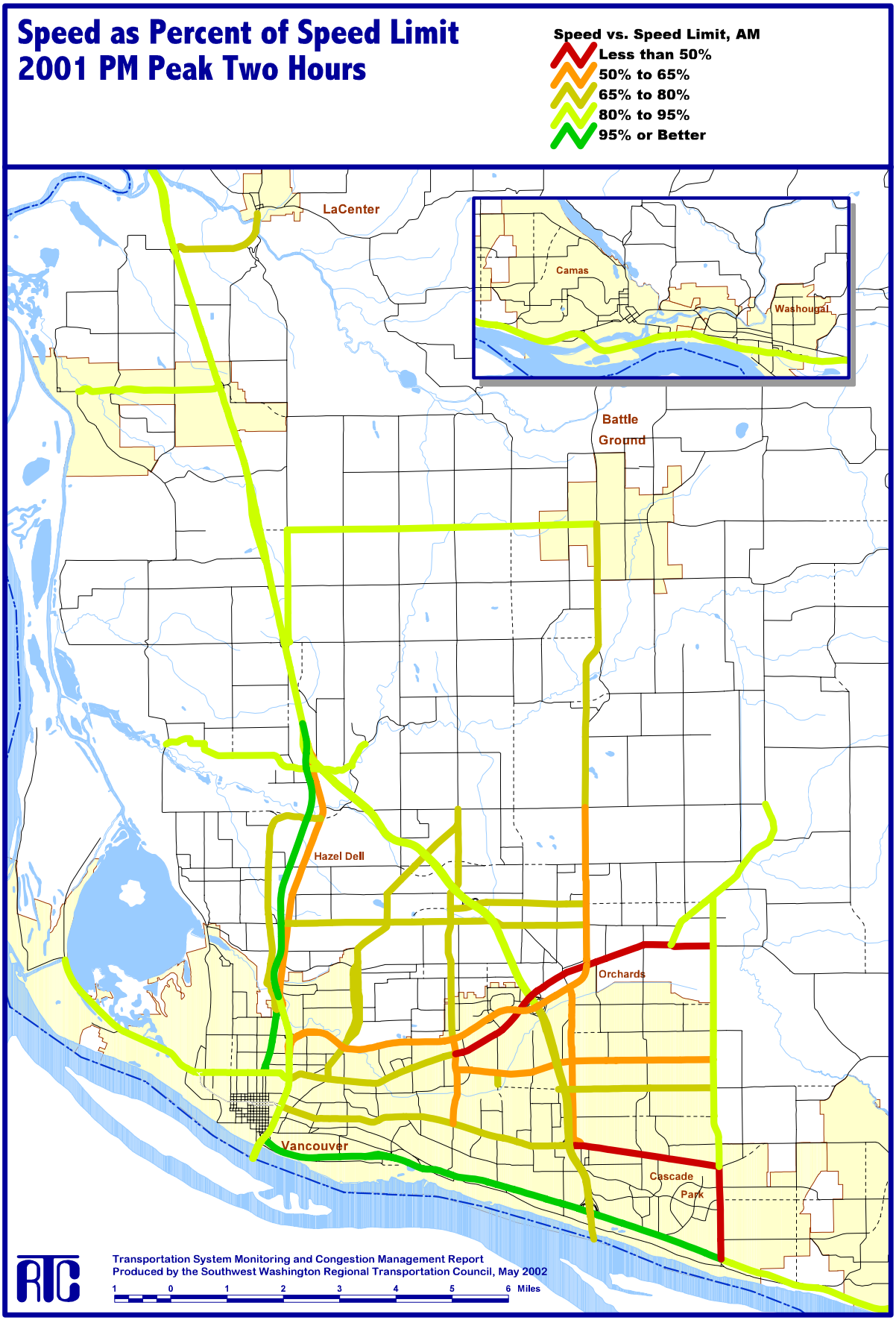


Figure 6 - PM Speed as Percent of Speed Limit



The I-205, SR-14 and Fourth Plain west corridors have the lowest AM automobile occupancy all at 1.03. The highest automobile occupancy is in the Mill Plain Corridor (1.15). In the PM peak, SR-14, I-205 south and I-5 south have the lowest average automobile occupancy rates (1.03 to 1.04). The two east/west arterials, Fourth Plain and Mill Plain have the highest average automobile occupancy rates (1.24-1.32) possibly due to a higher percentage of non-commute trips. Overall, the midday automobile occupancy rates are near 1.23, with a lower variation between corridors. It may be that the AM peak period is more of a traditional commute time. The PM and the midday time periods likely have a greater percentage of discretionary trips such as shopping where drive alone trips are less prominent. Figures 7, 8, and 9 display the average automobile occupancy information.

4. Truck Percentage

Overall, the freeway facilities, Fourth Plain/Mill Plain west of I-5 display the highest percentage of truck volumes during the PM peak period (Figure 10). The exception to this is on SR-500, which has truck percentages similar to major arterials, such as Andresen Road and 164th Avenue. SR-14, I-5 and I-205 corridors have truck percentages of 5% or higher. Fourth Plain Boulevard/SR-501 from I-5 to the Port of Vancouver has the highest percentage of PM peak vehicle volumes. I-5 North and I-205 Central also have significant truck percentages (13.8% and 10.3%).

5. Transit Seat Capacity Used

Transit seat capacity is based on 2000 bus service and represents the percentage of seats that are occupied during the two hour peak period. During the AM (Figure 11), I-5 south of 134th St., I-205 south, and SR-14 west of 164th utilize more than 70% of the available seats. In corridors without express service, 162nd Avenue North of Mill Plain and NE 28th Street corridors utilizes more than 50% of the available seats in the AM. PM trends (Figure 12) are similar to the AM except that PM percentages are generally higher. In addition, the Fourth Plain corridor west of Andresen uses more than 60% of the available seats in the PM, which is double the AM use.

B. Other Transportation Measures

1. Vehicle Volumes

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 congestion management corridors. During the AM peak (Figure 13), I-5, I-205, SR-14 and SR-500 display volumes greater than 3,000 vehicles per hour. Within the urban area, facilities carrying more than 1,500 vehicles per hour are primarily state facilities including other segments of SR-14 and SR-500 and SR-503. The only other facilities carrying more than 1,500 vehicles per hour are Mill Plain east of I-205 and 164th Avenue south of Mill Plain Blvd. PM peak hour (Figure 14) trends for traffic volumes for most of the congestion management corridors are similar. There are some notable exceptions; many congestion management corridors carry significantly higher volumes during the PM peak. The corridors with the highest peak hour volume difference (at least 400 additional vehicles) between the PM and AM peak include: I-5 North, Highway 99, I-205 Central, Andresen Road south, Mill Plain East, Fourth Plain West and Central corridors, and 78th/76th Street.

Figure 7 - AM Auto Occupancy

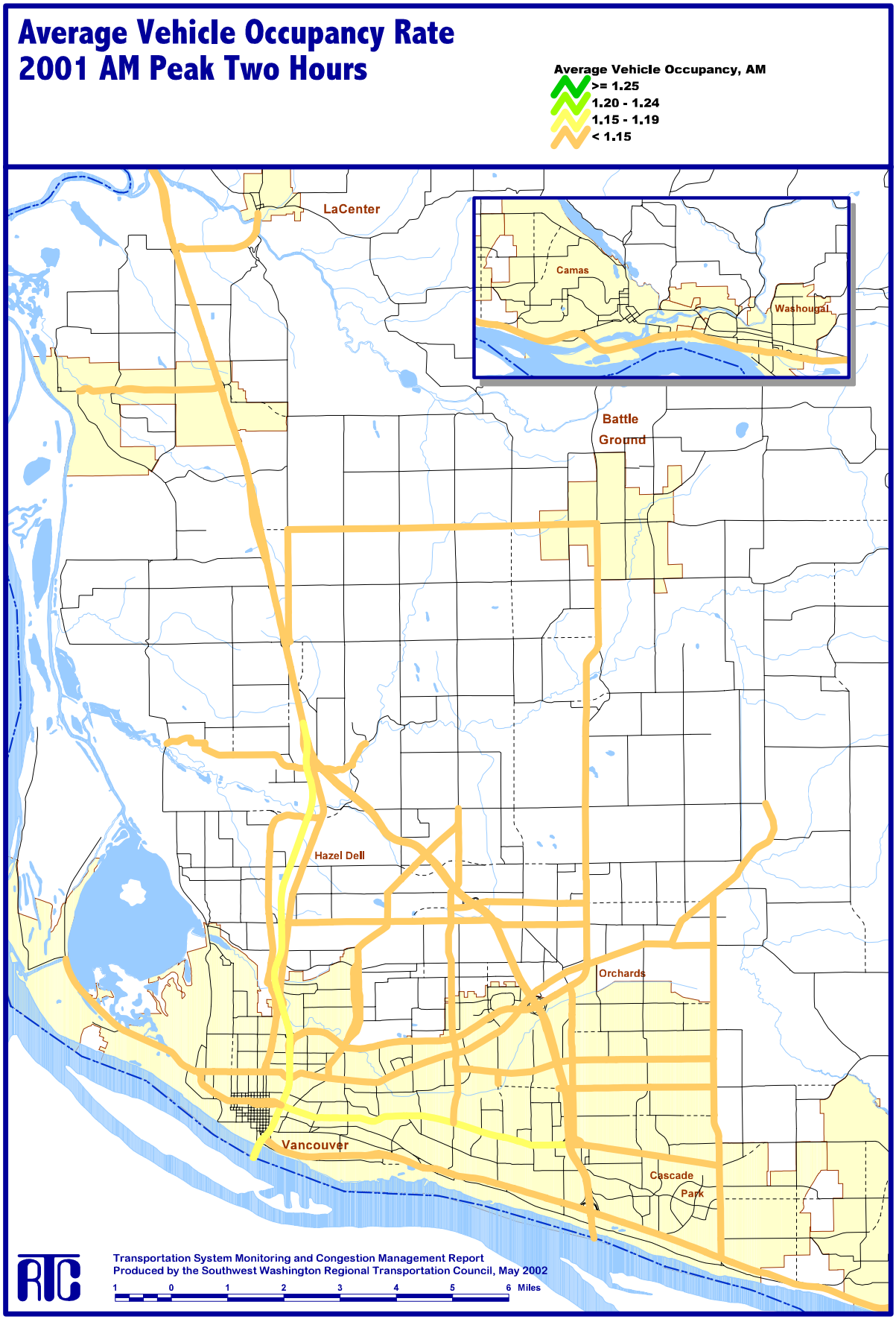


Figure 8 - PM Auto Occupancy

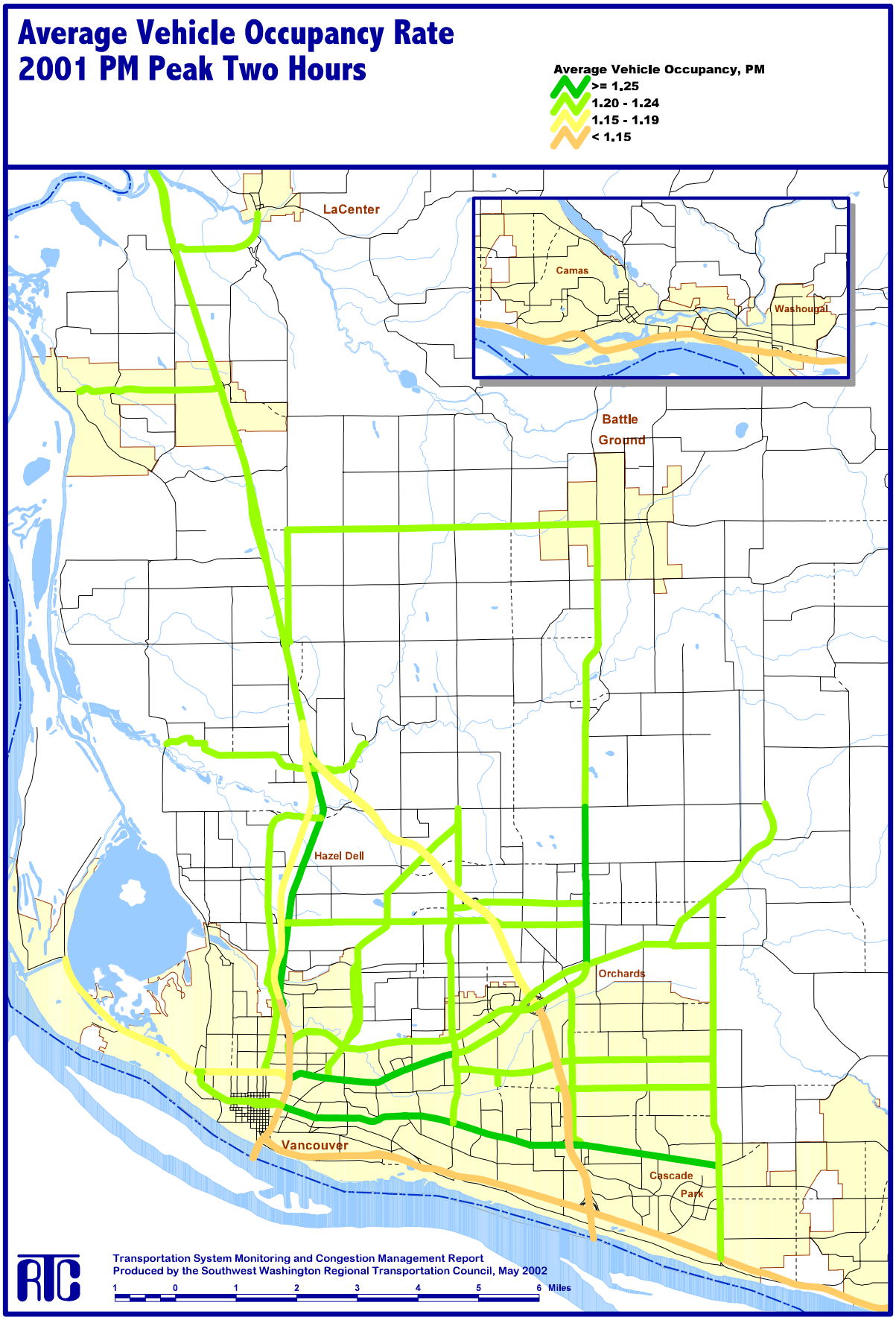


Figure 9 - Midday Auto Occupancy

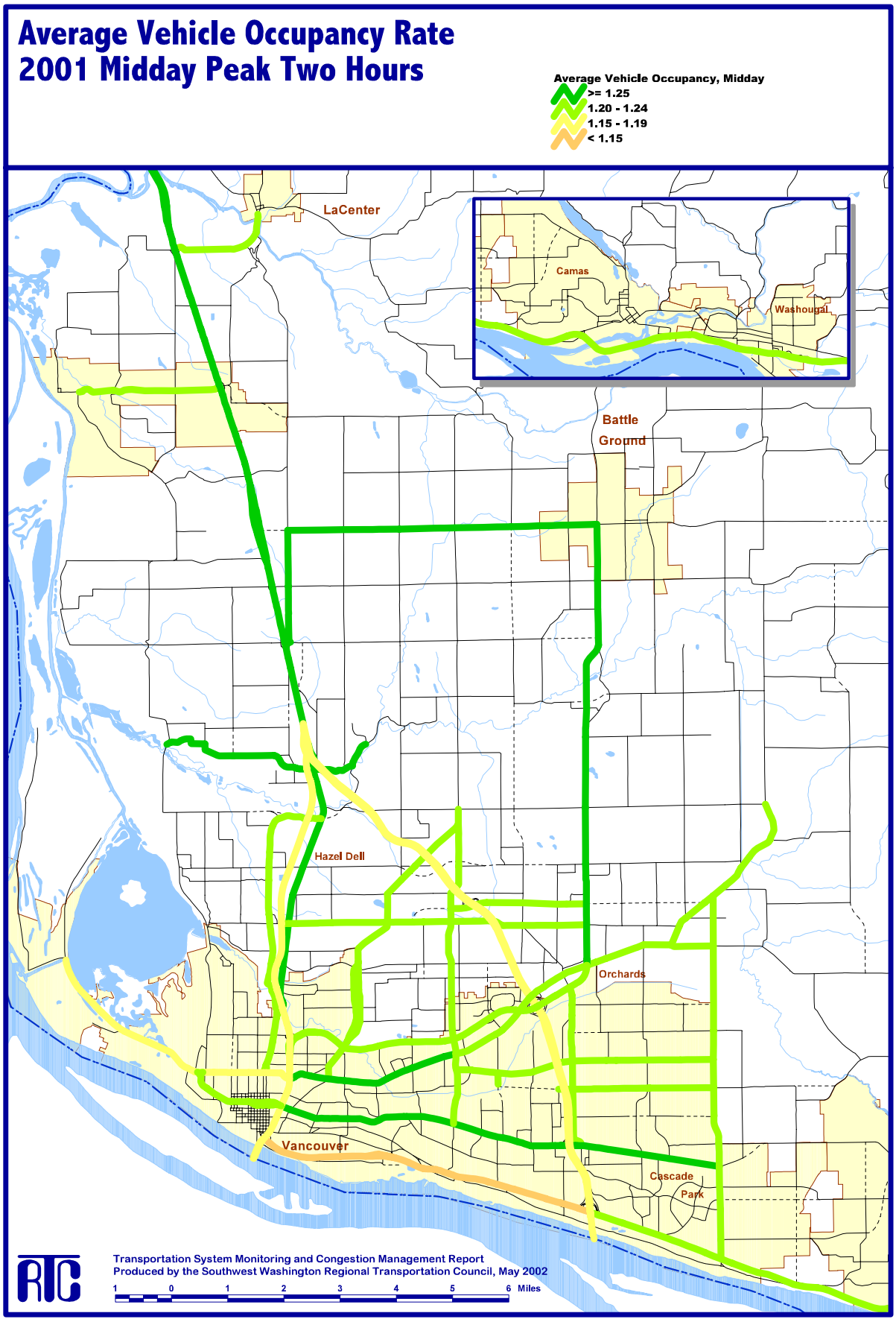


Figure 10 - PM Truck Percentage

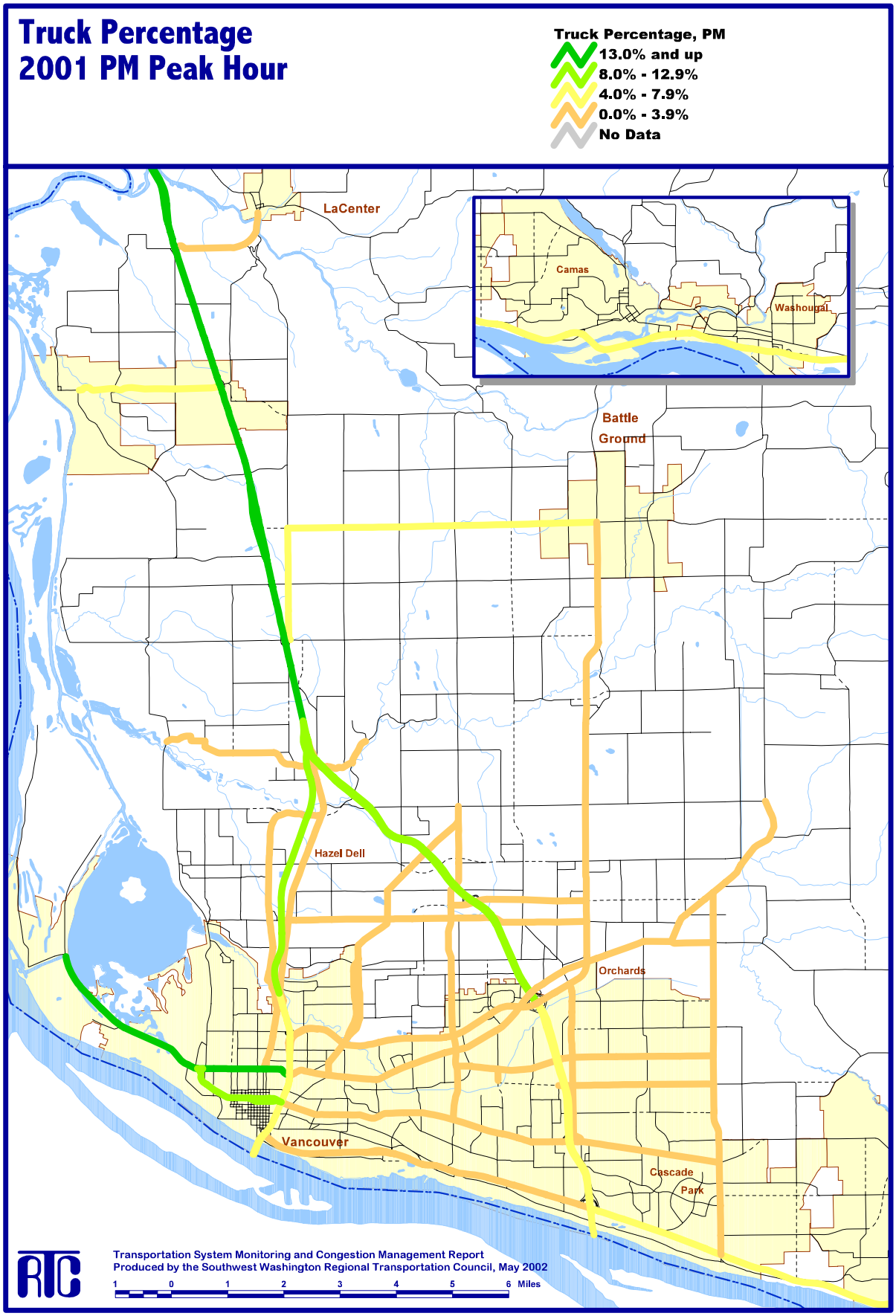


Figure 11 - AM Transit Seat Capacity Used

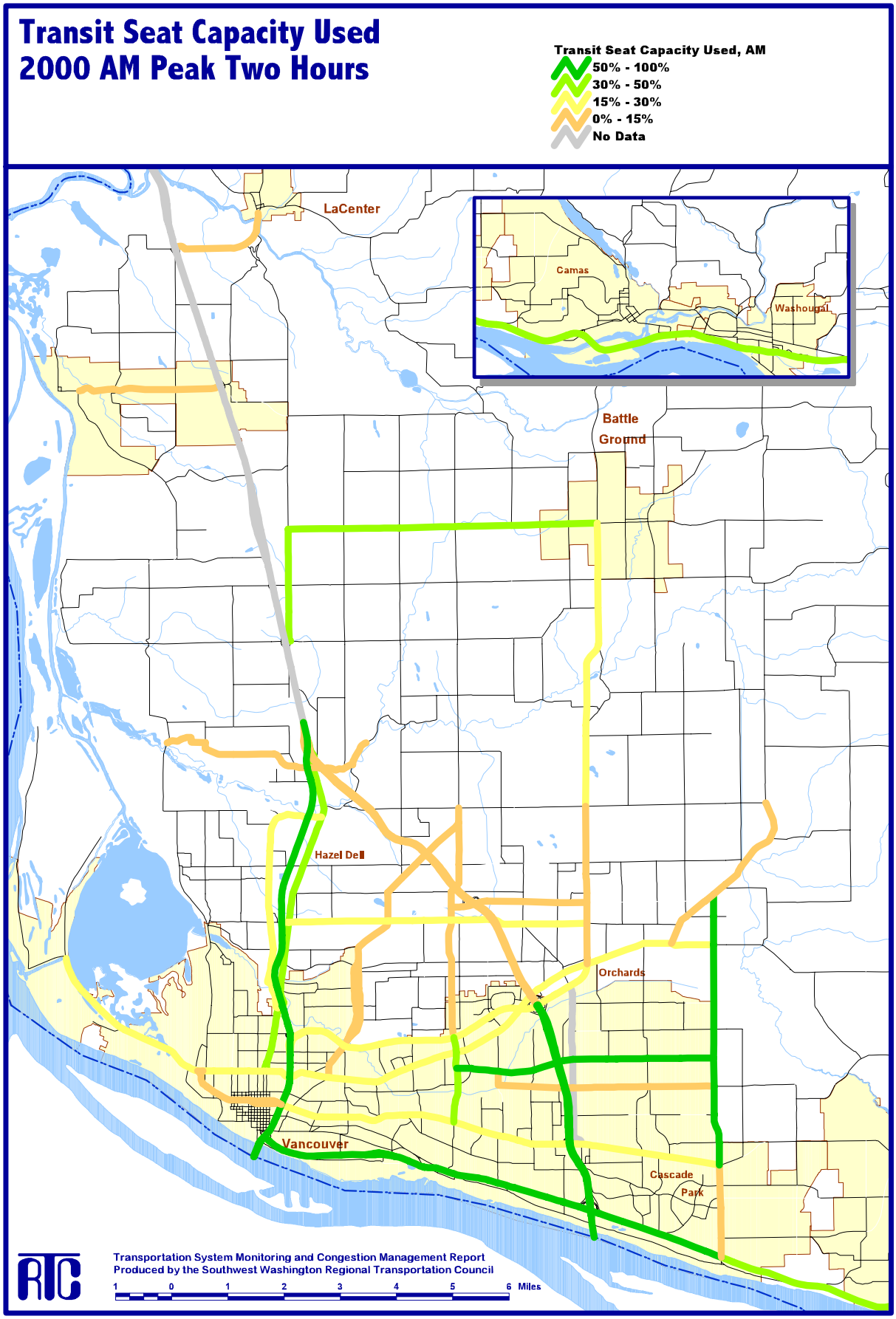


Figure 12- PM Transit Seat Capacity Used

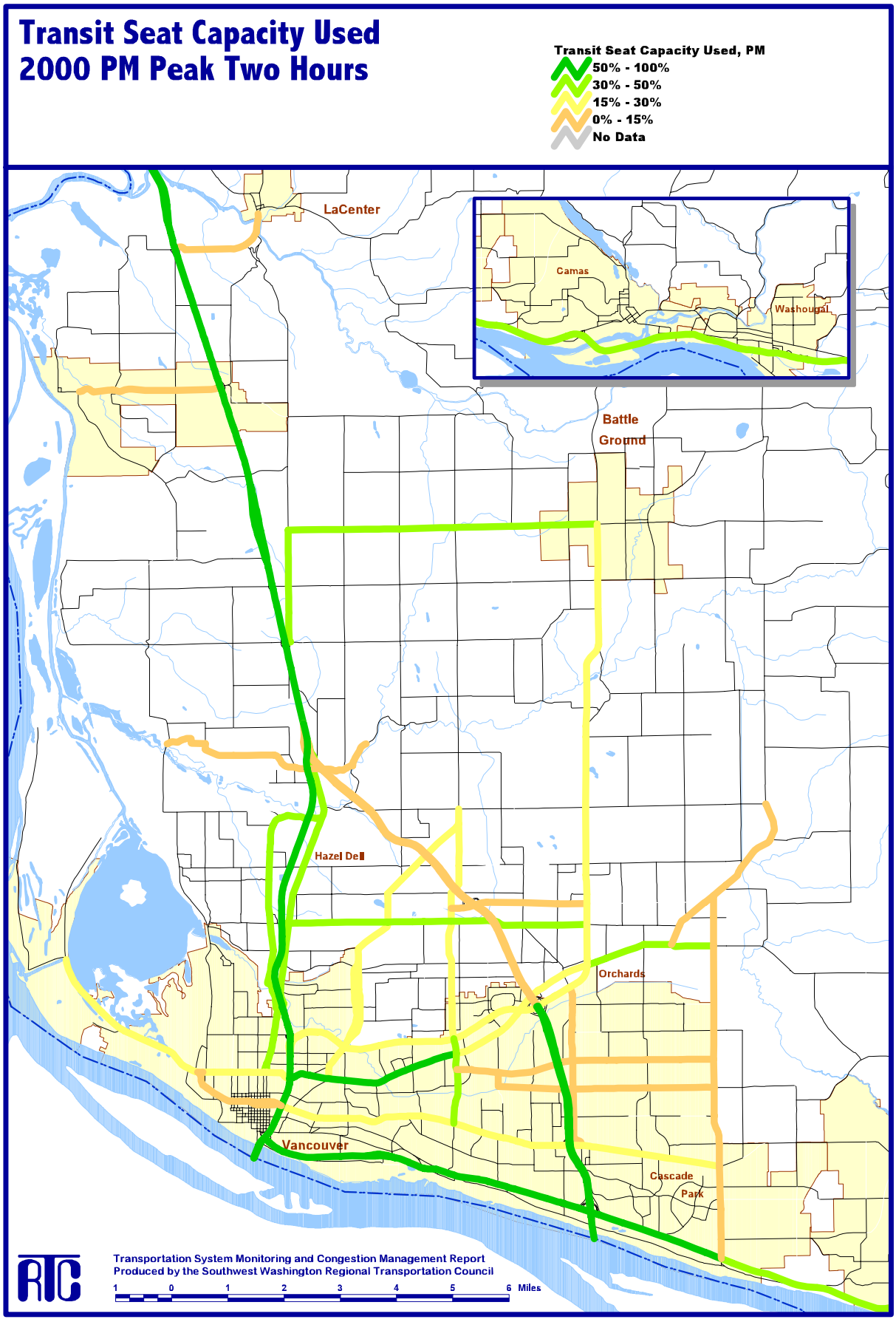


Figure 13 - AM Vehicle Volumes

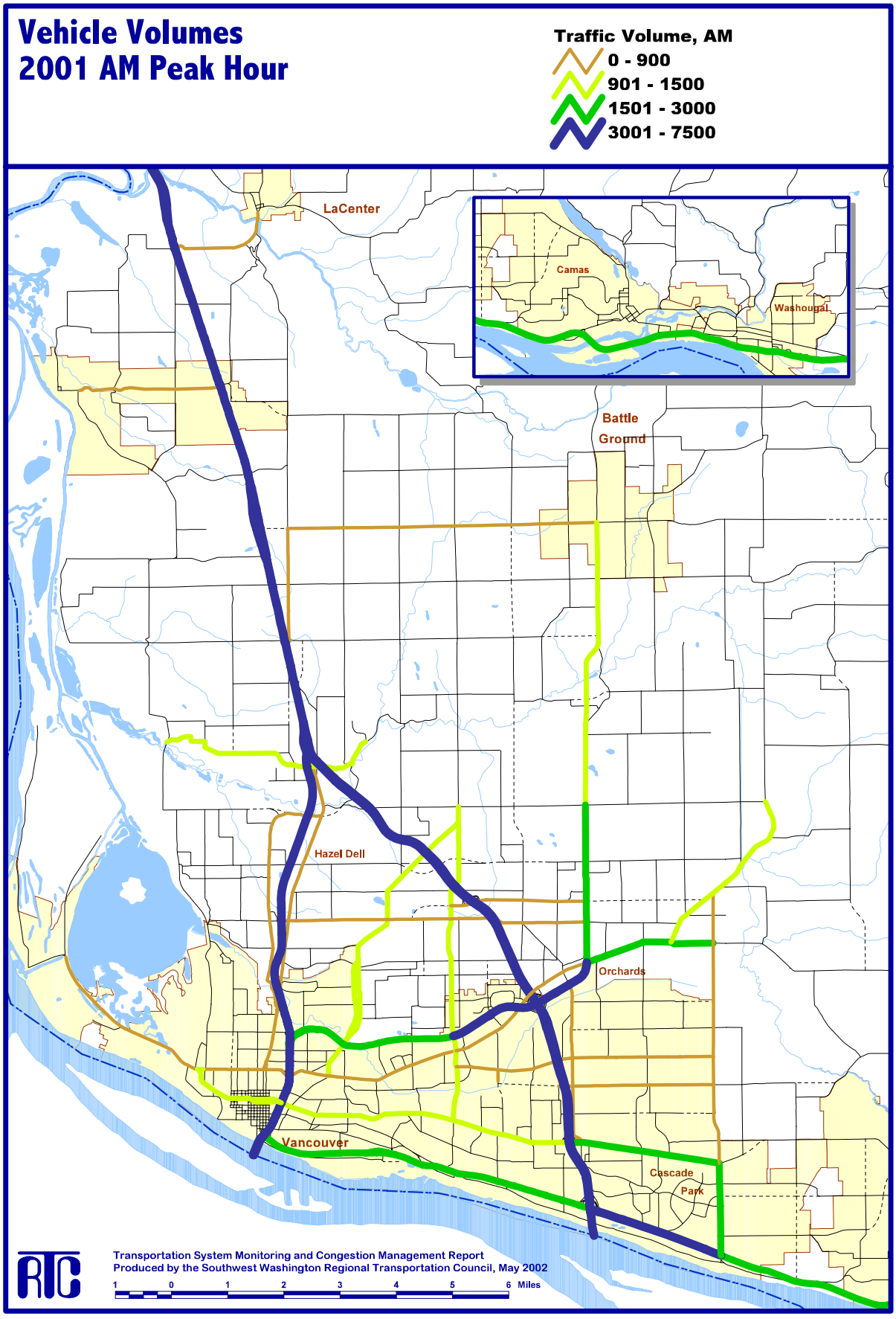
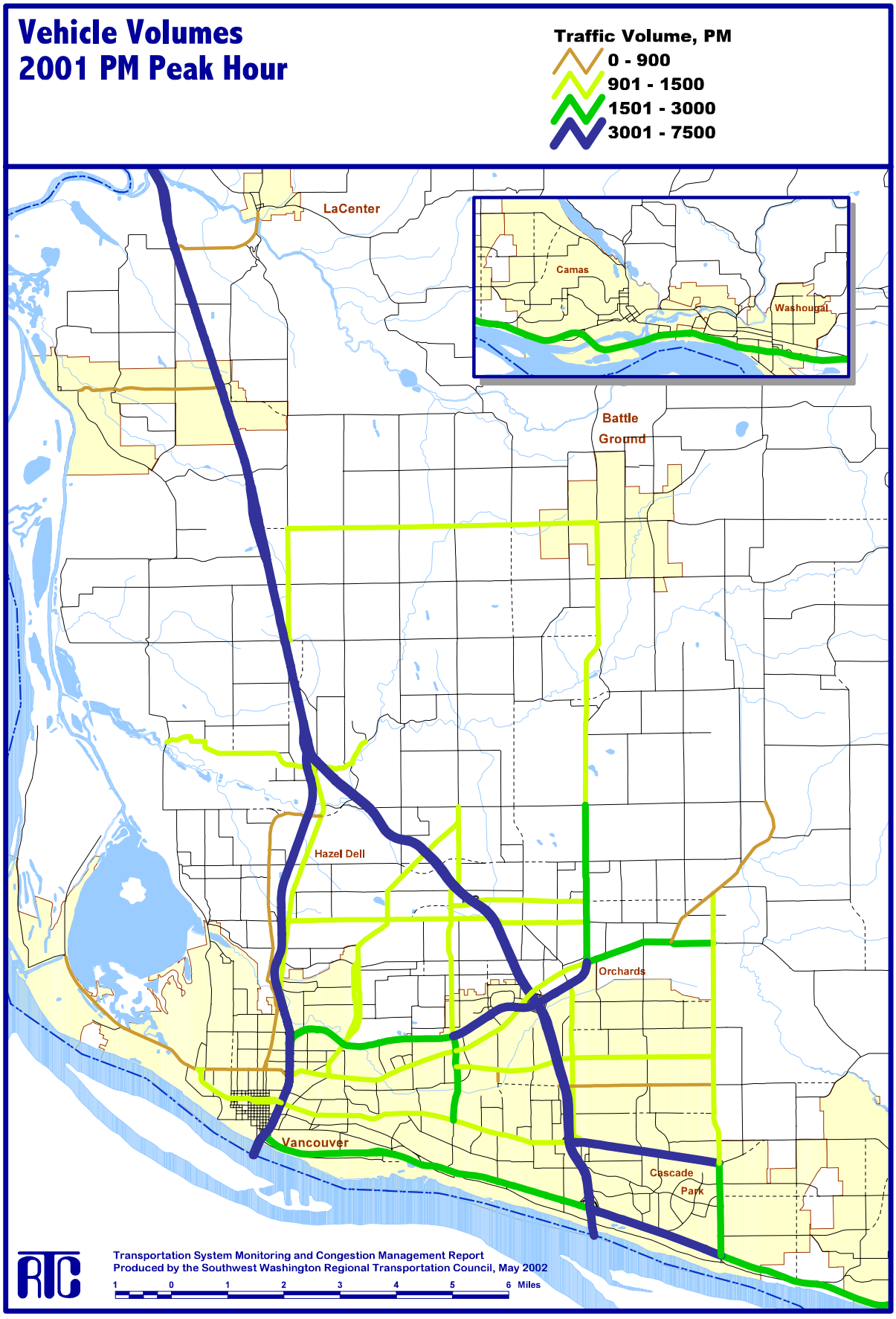


Figure 14 - PM Vehicle Volumes



2. HIGHEST VOLUME INTERSECTIONS

Table 2 displays the fifteen highest volume intersections in 2001. It is based on the total number of vehicles entering an intersection on an average weekday. At-grade intersections along SR-500, Mill Plain, and SR-503 dominate the list. The at-grade intersections along SR-500 make up more than a third of the sixteen intersections and also has six of the seven highest rankings. Mill Plain Boulevard has four of the top fifteen intersections. SR-503 in the Orchards area also has two intersections in the top fifteen.

Table 2 - Highest Volume Intersections

Rank	East/West	North/South	Volume
1	SR-500	Gher/112th	85,000
2	SR-500	Thurston Way	82,000
3	Mill Plain	Chkalov Dr	80,000
4	SR-500	SR-503	66,000
5	SR-500	St. Johns Rd.	64,000
6	SR-500	54th Ave.	58,000
7	SR-500	42nd Ave.	56,000
8	Fourth Plain	Andresen Rd.	55,000
9	76th Street	SR-503	54,000
10	Mill Plain	123rd/124th Ave.	52,000
11	78th St.	Hwy 99	50,000
12	Mill Plain	136th Ave.	50,000
13	SE 34th St.	SE 164th Ave.	47,000
14	Mill Plain	Andresen Rd.	47,000
15	134th Street	Highway 99	44,000

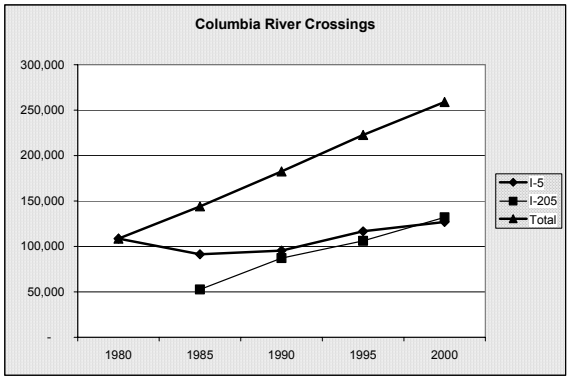
3. COLUMBIA RIVER BRIDGE VEHICLE VOLUMES

A good indicator of change to bi-state travel is the amount of vehicle travel across the Columbia River bridges. Table 3 and Figure 15 show the historical growth in Columbia River bridge crossings since 1980. In 1980, the only highway across the Columbia River was the Interstate Bridge that carried 108,600 vehicles a day. By 1985, with the opening of the Glenn Jackson Bridge in 1983, Interstate Bridge volumes decreased to 91,400 vehicles a day. However, the new Glenn Jackson Bridge carried 52,600 day for a combined river crossing of 144,000 vehicles a day. By 1995, total river crossings (222,700) had more than doubled compared to 1980 (108,600). While traffic on both bridges has continued to grow since 1990, the Interstate Bridge is at capacity about six hours a day. As a result, in 1999 the Glenn Jackson Bridge traffic volumes exceeded the Interstate Bridge traffic volumes on a daily basis. By 2001, total river crossings had reached 264,000. The 2001 decrease in Interstate Bridge traffic can be attributed to lack of additional capacity in peak hours and I-5 corridor construction. Future growth is expected to continue at a higher rate on the Glenn Jackson Bridge.

Table 3 - 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
2001	125,700	138,700	264,400

Figure 15 - Columbia River Crossings



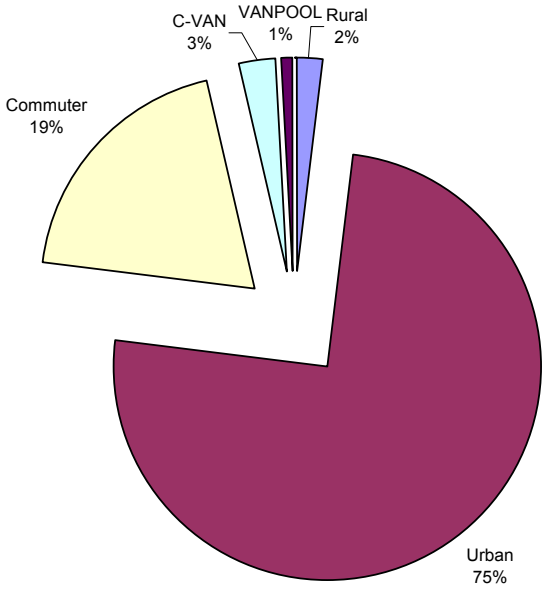
4. TRANSIT SEATS AS PERCENTAGE OF LANE CAPACITY

This measure is intended as a planning analysis tool. It utilizes information from the congestion management data to calculate transit seat capacity as a percentage of vehicle capacity per lane for the congestion management corridors. It provides a picture of how much transit service is in the corridors in relation to the road capacity and presents an idea of the potential of transit to mitigate or manage auto demand on the congestion management corridors. The AM and PM maps (Figures 17 and 18) are almost identical because of the similarities of the morning and evening peak transit service. SE 164th Avenue and I-5 south have the highest percentage of transit seats due to the high level of vehicles accessing the Fisher's Landing Transit Center and commuter service crossing the Interstate Bridge in the I-5 corridor. In contrast, SR-14 between I-5 and I-205 has only one bus during the two hour peak period.

5. TRANSIT SYSTEM RIDERSHIP

Figure 16 and Table 4 provide information on 2001 annual C-TRAN patronage by type of service. Almost all (96%) of C-TRAN system ridership was made up of fixed route service. Urban fixed route service carries three-quarters of C-TRAN's total annual ridership. This is followed by commuter service that carries approximately 19.5% of the total riders. Table 5 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 3% to 4.5% per year depending on the time period. At the same time, C-TRAN ridership growth rate has been higher than the population growth rate until year 2000. The passage of Initiative 695 had a serious impact on transit service in Clark County in 2000. The impact to operating revenue resulted in more than a 25% reduction in service levels from 1999.

Figure 16 - Ridership by Type of



Service

Table 4 - 2001 Ridership by Type of Service

Type of Service	Annual Riders	Percent of Total
Rural	117,167	2.0%
Urban	4,480,427	74.9%
Commuter	1,165,797	19.5%
C-VAN	174,531	2.9%
Vanpool	46,227	0.8%
Total	5,984,149	100.0%

Figure 17 - AM Transit Seats: Percent of Lane Capacity

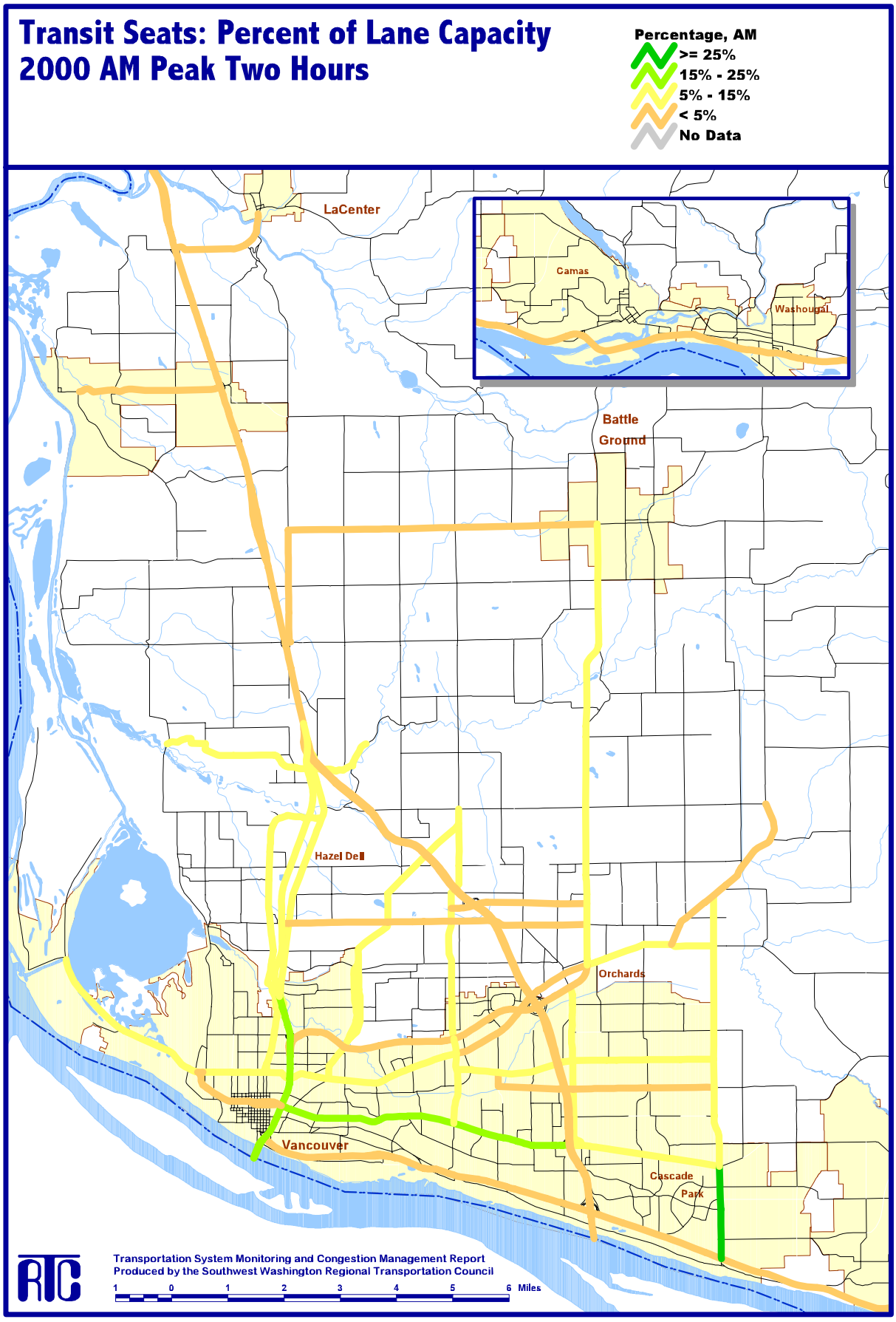


Figure 18 - PM Transit Seats: Percent of Lane Capacity

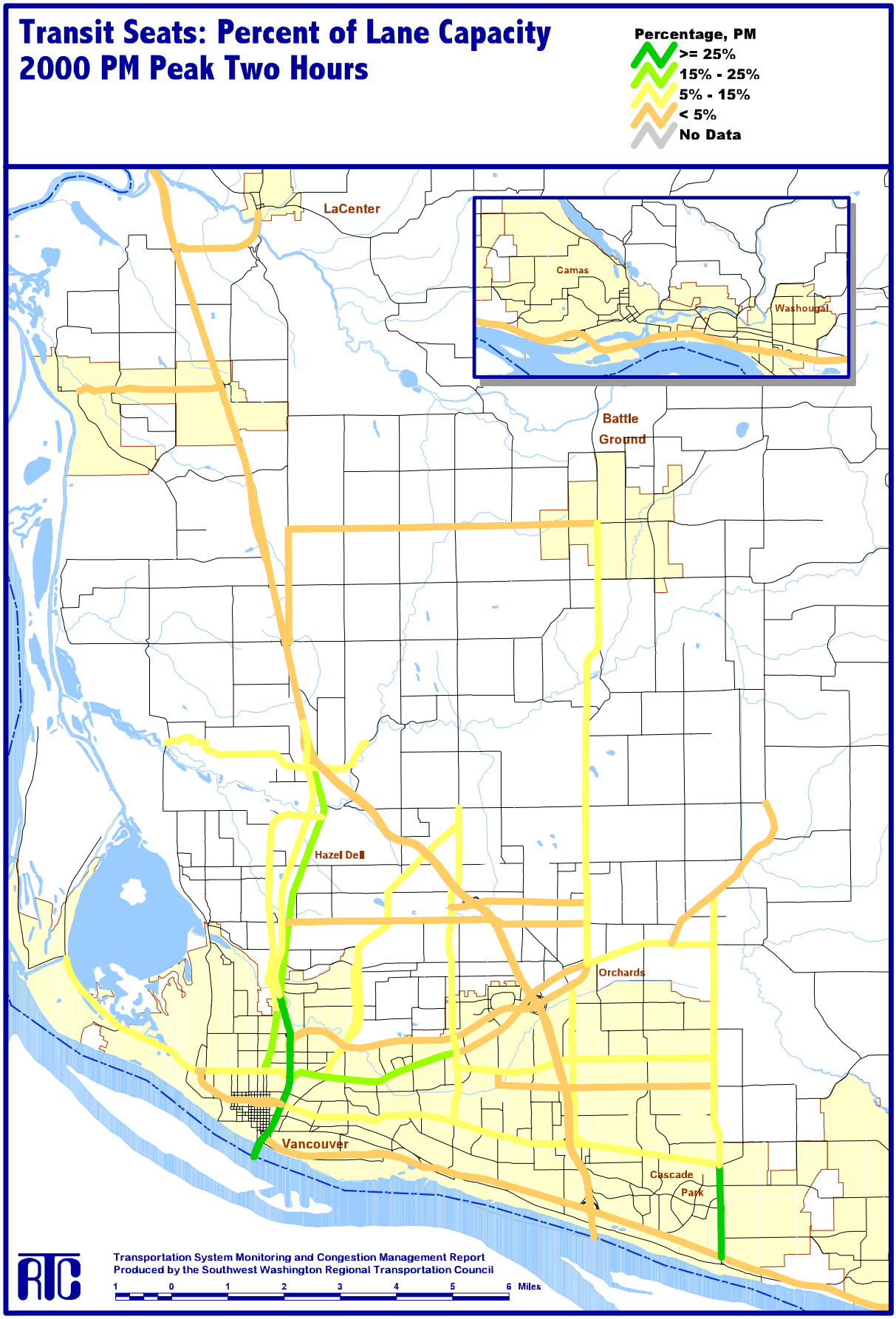


Table 5 - Historical Population and Patronage Growth

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%
2001	352,600	2.1%	5,984,149	10.1%

6. Park and Ride Capacity

In 2000, the opening of the Fisher's Landing park and ride lot added 560 spaces to the total park and ride spaces available through the County. However, as previously noted the reductions in service levels constrained total ridership, with standing passenger occurring on all commuter service. Clark County park and ride capacity is shown in Table 6.

Table 6 - Clark County Park and Ride Capacity

Facility	Lot Capacity
Battle Ground	50
Evergreen	390
Salmon Creek	438
BPA Ross	182
Ridgefield	42
Fisher's Landing	560
Total	1,662

C. 1999-2001 Trends

1. Corridor Congestion

Through the three-year period, both the AM and PM periods show congestion along major facilities, with additional congestion shown along a few arterial corridors. The 2001 data shows an overall flattening of traffic volumes, which could be reflective of the slowdown in the economy.

The I-205 corridor displayed a significant increase in corridor congestion. North of SR-500, the peak hour traffic volumes increased by 400 vehicles in the AM hour and 700 vehicles in the PM hour. Corridor congestion has been reduced in the 164th Avenue North corridor, with additional corridor capacity being added between Mill Plain and SE 1st Street.

2. Speed as Percent of Speed Limit

In the three-year period, speed as percent of posted speed limit remained relatively constant through the various corridors. Facilities with multiple at-grade intersections display lower speed percentages. While, freeway facilities display higher speed percentages.

Corridors that display a decrease in speed include I-5 North, I-205, SR-503 South, Fourth Plain Central, Padden Parkway, Burton Rd/28th St., and 18th Street. Some of these corridors include those corridors that have construction activity (Fourth Plain Blvd. and Burton Rd). Other corridors are likely approaching saturation levels.

3. Automobile Occupancy

The three-year period showed a similar trend for automobile occupancy. Automobile occupancy is lowest on freeways and in the AM Peak period.

The 2001 automobile occupancy data showed a decrease in vehicle occupancy on freeways in both AM and PM time periods, with the exception of I-5 South in the AM peak where an HOV Lane was implemented. The occupancy decrease elsewhere may be reflective of the economic slowdown, in that carpools were dissolved due to loss of jobs.

CHAPTER III.
INDIVIDUAL CMS CORRIDOR DATA

This chapter contains detailed transportation data for each of the congestion management corridors, for both the AM and PM peak periods. The detailed data was used to develop the congestion management corridor summaries in the previous chapter and provides a comprehensive set of transportation data for the individual segments and facilities that comprise the corridors. Information by corridor contains an individual data sheet and a schematic map of the corridor. The following corridors make up this section:

I-5

I-205

Grand/St. Johns

Andresen Road/72nd Avenue

SR-503

Ward Road

162nd/164th Avenue

SR-14

Mill Plain Boulevard

Fourth Plain Boulevard

SR-500

78th/76th/Padden Parkway

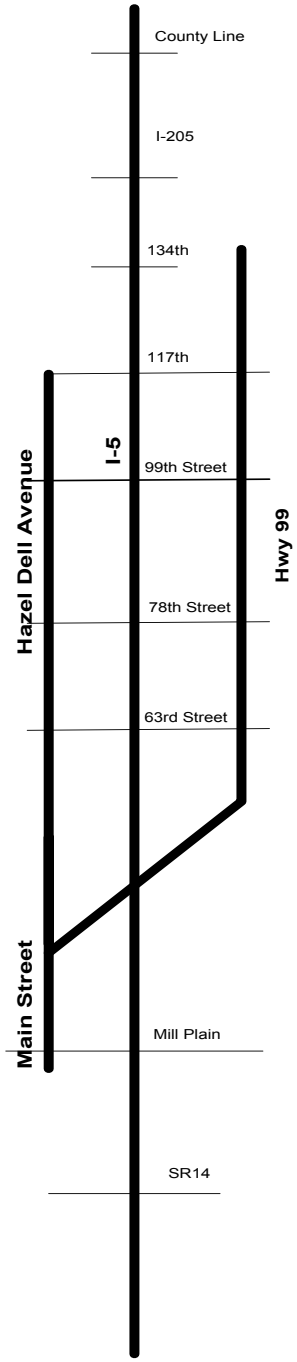
28th/18th

134th/139th Streets

SR-502/219th Street

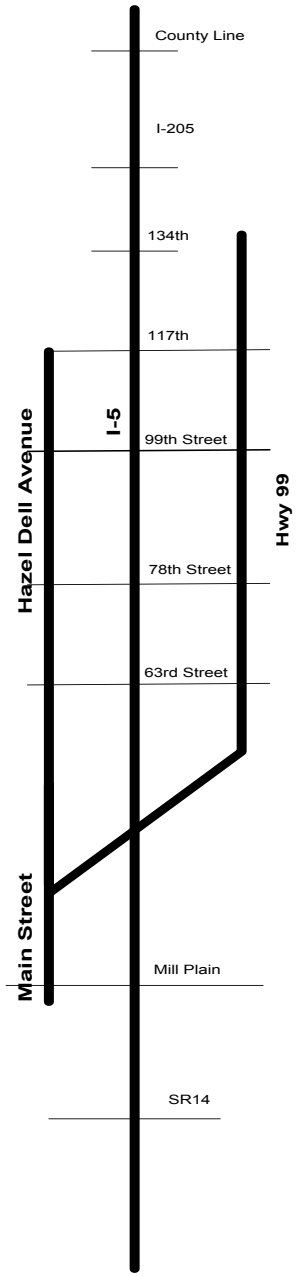
SR-501

La Center Road



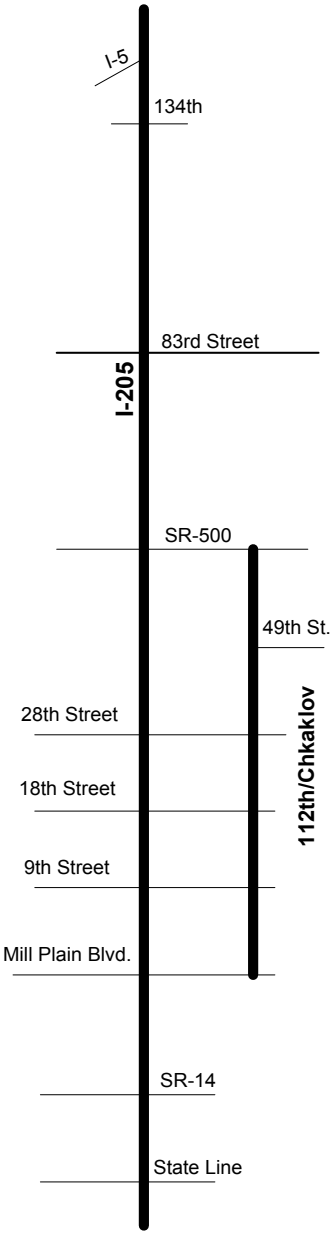
I-5 Corridor

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 - Southbound/Westbound										
I-5														
County Line	- 319th St.	2.91	5040	1689	0.34			149	70					
319th St.	- SR 501	2.63	5220	2442	0.47			135	70					
SR 501	- SR 502/179th St.	4.69	5280	2508	0.48		1.12	248	68					
SR 502/179th St.	- I-205	1.96	5280	3506	0.66			140	63					
		12.19		**3506**	**0.49**		**1.12**	**672**	**68**					
I-5														
I-205	- 134th St.	0.50	3520	2374	0.67			"	"	134,173				
134th St.	- 99th St.	1.49	3520	2635	0.75			89	60					
99th St.	78th St.	1.01	3520	3725	1.06			59	62					
78th St.	- Main St.	1.49	3400	3824	1.12	6%		95	56		236	470	50.2%	
		4.49		**3824**	**0.97**	**6%**	**1.15**	**243**	**59**	**134,173**	**236**	**470**	**53.33%**	**13.8%**
Hwy 99														
134th St.	- 119th St.	0.72	1700	391	0.23	5%		119	22	71	14	175	8.0%	
119th St.	- 99th St.	1.12	1700	162	0.10			120	34	71	18	175	10.3%	
99th St.	- 78th St.	1.04	1700	468	0.28	6%		158	24	71	28	175	16.0%	
78th St.	- 63rd St.	0.75	1700	834	0.49	6%	1.14	117	23	21,71	80	295	27.1%	
63rd St.	- Main St.	0.52	1700	803	0.47					21,71	88	295	29.8%	
		4.15		**834**	**0.36**	**6%**	**1.14**	**514**	**25**	**21,71**	**88**	**295**	**29.8%**	**17.4%**
Hazel Dell														
117th St.	- 99th St.	1.47	800	420	0.53			200	26	6	34	175	19.4%	
99th St.	- 78th St.	0.99	1700	318	0.19			155	23	6	38	175	21.7%	
78th St.	- 63rd St.	0.74	800	280	0.35			99	27	6				
63rd St.	- Main St.	0.93	800	109	0.14					6	48	175	27.4%	
		4.13		**420**	**0.35**		**1.11**	**454**	**25**	**6**	**48**	**175**	**27.4%**	**10.9%**
I-5														
Main St.	- SR 500	0.79	5280	3909	0.74	6%		52	55	134,154,155				
SR 500	- 4th Plain	0.70	5400	5222	0.97	6%	1.15	113	54	134,154,155				
4th Plain	- Mill Plain	0.56	5400	5222	0.97	6%		"	"	134,154,155				
Mill Plain	- SR 14	0.43	5400	5345	0.99	6%		"	"	134,154,155	294	600	49.0%	
SR 14	- State line	0.27	5400	5400	1.00	7%				105,134,154,155	558	1040	53.7%	
		2.48		**5400**	**0.92**	**6%**	**1.15**	**165**	**54**	**105,134,154,155**	**558**	**1040**	**53.7%**	**28.9%**
Main Street														
I-5	- 39th St.	0.67	1600	224	0.14			140	35	6,21,71,173	146	500	29.2%	
39th St.	- Fourth Plain	0.70	1200	619	0.52			"	"	3, 6,21,71,173	169	590	28.6%	
		1.37		**619**	**0.42**		**1.11**	**140**	**35**	**3, 6,21,71,173**	**169**	**590**	**28.6%**	**24.6%**



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.	3.81	5040	2267	0.45	16%		215	64					
319th St.	- SR 501	2.60	5220	2783	0.53	13%		156	60					
SR 501	- SR 502/179th St.	4.79	5280	3007	0.57	13%		269	64					
SR 502/179th St.	- I-205	1.73	5280	4021	0.76	13%	1.23	129	62					
		12.93		**4021**	**0.57**	**14%**	**1.23**	**769**	**61**					
I-5														
I-205	- 134th St.	0.50	3520	2735	0.78	9%		"	"					
134th St.	- 99th St.	1.94	3520	2748	0.78	9%	1.17	115	61					
99th St.	78th St.	1.13	3520	3735	1.06	9%		63	65					
78th St.	- Main St.	1.24	3400	4070	1.20	6%		69	65	134,173	144	270	53%	
		4.81		**4070**	**0.99**	**8%**	**1.17**	**247**	**63**	**134,173**	**144**	**270**	**53%**	**7.9%**
Hwy 99														
134th St.	- 119th St.	0.91	1700	668	0.39	2%		118	28	71	13	175	7%	
119th St.	- 99th St.	0.92	1700	820	0.48	2%		98	34	71	13	175	7%	
99th St.	- 78th St.	1.04	1700	998	0.59	3%		187	20	71	38	175	22%	
78th St.	- 63rd St.	0.75	1700	1285	0.76	2%	1.26	105	26	21,71	78	295	26%	
63rd St.	- Main St.	0.52	1700	1208	0.71	2%		72	26	21,71	92	295	31%	
		4.14		**1285**	**0.60**	**2%**	**1.26**	**580**	**26**	**21,71**	**92**	**295**	**31%**	**17.4%**
Hazel Dell														
117th St.	- 99th St.	1.69	800	585	0.73	3%		180	34	6	19	210	9%	
99th St.	- 78th St.	1.00	1700	530	0.31	2%		160	23	6	20	210	10%	
78th St.	- 63rd St.	0.74	800	719	0.90	1%		108	25	6	32	210	15%	
63rd St.	- Main St.	0.93	800	212	0.27	1%				6	32	210	15%	
		4.36		**719**	**0.63**	**2%**	**1.24**	**448**	**28**	6	**32**	**210**	**15%**	**13.1%**
I-5														
Main St.	- SR 500	0.77	5280	4541	0.86	5%		62	45	134,154,155				
SR 500	- 4th Plain	0.70	5400	5596	1.04	4%	1.04	106	58	134,154,155				
4th Plain	- Mill Plain	0.56	5400	5816	1.08	4%		"	"	134,154,155				
Mill Plain	- SR 14	0.45	5400	5019	0.93	6%		"	"	134,154,155	241	680	35%	
SR 14	- State line	0.27	5400	5138	0.95	5%				105,134,154,155	413	1120	37%	
		2.48		**5816**	**0.98**	**5%**	**1.04**	**168**	**53**	**105,134,154,155**	**413**	**1120**	**37%**	**31.1%**
Main Street														
I-5	- 39th St.	0.67	1600	584	0.37	2%		140	35	6,21,71,173	176	535	33%	
39th St.	- Fourth Plain	0.70	1200	689	0.57	2%		"	"	3, 6,21,71,173	199	595	33%	
		1.37		**689**	**0.48**	**2%**	**1.24**	**140**	**35**	**3, 6,21,71,173**	**199**	**595**	**33%**	**24.8%**

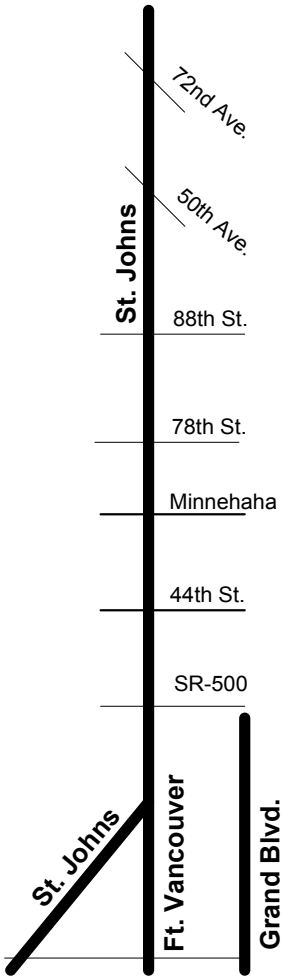


I-205 Corridor

AM Peak		Segment Length	Segment Capacity	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
		AM - Southbound/Westbound												
I-205														
I-5	- 134th St.	0.52	3200	1886	0.59			31	60					
134th St.	- 83rd St.	3.36	3600	2330	0.65			200	60					
83rd St.	- SR 500	2.00	3600	3387	0.94		1.10	117	62					
		5.88		**3387**	**0.77**		**1.10**	**348**	**61**					
I-205														
SR 500	- Mill Plain	2.79	5400	5166	0.96			164	61	176	35	200	18%	
Mill Plain	- SR 14	1.02	5400	5746	1.06		1.03	59	62	175,176,177	238	720	33%	
SR 14	- State line	0.51	6200	7119	1.15	4%				175,176,177	238	720	33%	
		4.32		**7119**	**1.01**	**4%**	**1.03**	**223**	**62**	**175,176,177**	**238**	**720**	**33%**	**20.0%**
112th Ave. NE / Chkalov Drive / Gher Road														
SR 500	- 49th St.	0.32	1600	793	0.50			35	33	12	21	140	15%	
49th St.	- 28th St.	1.00	1600	774	0.48			124	29	12	50	140	36%	
28th St.	- 18th St.	0.50	1600	682	0.43			60	30	12	49	140	35%	
18th St.	- 9th St.	0.50	1600	814	0.51			51	35	12	49	140	35%	
9th St.	- Mill Plain	0.58	1600	872	0.55			121	17	12	43	140	31%	
		2.90		**872**	**0.49**		**1.11**	**391**	**27**	**12**	**50**	**140**	**36%**	**8.8%**

I-205 Corridor

PM Peak		Segment Length	Segment Capacity	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
		PM - Nouthbound/Eastbound												
I-205														
I-5	- 134th St.	0.52	3200	2070	0.65	11%		34	55					
134th St.	- 83rd St.	3.82	3600	2534	0.70	11%		251	55					
83rd St.	- SR 500	2.28	3600	3909	1.09	9%	1.18	141	58					
		6.62		**3909**	**0.87**	**10%**	**1.18**	**426**	**56**					
I-205														
SR 500	- Mill Plain	2.55	5400	5360	0.99	6%		211	44	176	23	160	14%	
Mill Plain	- SR 14	0.95	5400	5415	1.00	9%	1.04	89	38	175,176,177	205	800	26%	
SR 14	- State line	0.51	6200	7361	1.19	4%				175,176,177	205	800	26%	
		4.01		**7361**	**1.03**	**6%**	**1.04**	**300**	**42**	**175,176,177**	**205**	**800**	**26%**	**22.2%**
112th Ave. NE / Chkalov Drive / Gher Road														
SR 500	- 49th St.	0.32	1600	1139	0.71	2%		130	9	12	40	140	29%	
49th St.	- 28th St.	1.00	1600	1121	0.70	2%		134	27	12	35	140	25%	
28th St.	- 18th St.	0.50	1600	922	0.58	2%		85	21	12	30	140	21%	
18th St.	- 9th St.	0.50	1600	984	0.62	2%		70	26	12	30	140	21%	
9th St.	- Mill Plain	0.58	1600	1090	0.68	1%		66	32	12	29	140	21%	
		2.90		**1139**	**0.67**	**2%**	**1.24**	**485**	**22**	**12**	**40**	**140**	**29%**	**8.8%**

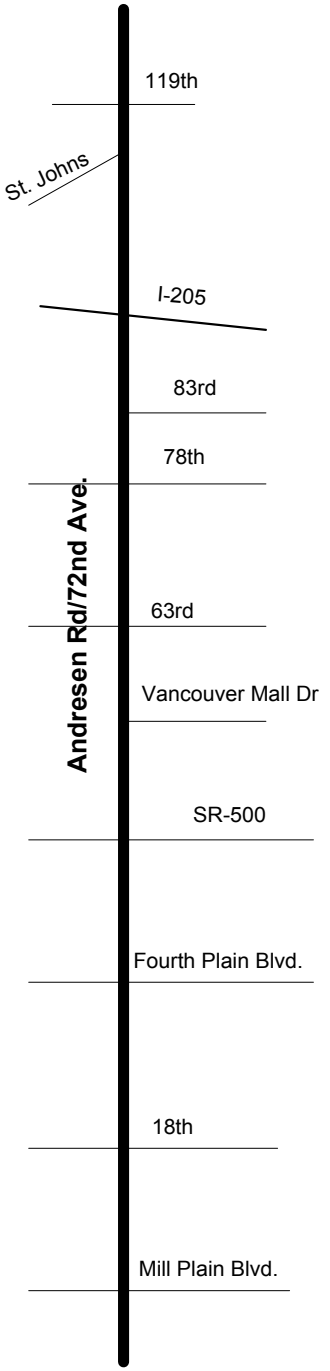


Grand/St. Johns Corridor

AM Peak	Segment Length	Segment Capacity	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
	AM - Southbound/Westbound												
St. Johns Rd.													
NE 72nd Ave. - 50th Ave.	1.44	800	393	0.49	3%		183	35					
50th Ave. - NE 88th St.	0.36	1700	859	0.51			"	"	25	18	120	15%	
NE 88th St. - NE 78th St.	0.50	1700	975	0.57	6%		83	22	25	22	120	18%	
NE 78th St. - NE Minnehaha St.	1.07	1800	796	0.44	8%		116	33	25	22	120	18%	
St. Johns Rd./St. James Rd.													
NE Minnehaha St. - NE 44th St.	0.93	1800	652	0.36			122	27	25	43	120	36%	
NE 44th St. - SR 500	0.55	1800	1141	0.63	4%		108	18	25	45	120	38%	
Fort Vancouver Way													
St. Johns Blvd. - Fourth Plain Blvd.	0.23	1200	118	0.10					25	41	120	34%	
Grand Blvd.													
St. Johns Blvd. - Fourth Plain Blvd.	0.58	1700	253	0.15					3	9	120	8%	
St. Johns Blvd.													
SR 500 - Ft. Vancouver Way	0.44	900	484	0.54			151	19	25	46	120	38%	
Ft. Vancouver Way - Fourth Plain Blvd.	0.37	900	451	0.50			"	"					
	5.66		**1141**	**0.53**	**5%**	**1.24**	**763**	**27**	**25**	**35**	**120**	**29%**	**6.7%**

Grand/St. Johns Corridor

PM Peak	Segment Length	Segment Capacity	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
	PM - Nouthbound/Eastbound												
St. Johns Rd.													
NE 72nd Ave. - 50th Ave.	1.44	800	550	0.69	3%		155	42					
50th Ave. - NE 88th St.	0.36	1700	863	0.51	3%		"	"	25	7	120	6%	
NE 88th St. - NE 78th St.	0.50	1700	963	0.57	5%		61	30	25	9	120	8%	
NE 78th St. - NE Minnehaha St.	1.07	1800	852	0.47	5%		163	24	25	8	120	7%	
St. Johns Rd./St. James Rd.													
NE Minnehaha St. - NE 44th St.	0.93	1800	901	0.50	2%		118	28	25	9	120	8%	
NE 44th St. - SR 500	0.55	1800	1043	0.58	2%		57	35	25	31	120	26%	
Fort Vancouver Way													
St. Johns Blvd. - Fourth Plain Blvd.	0.23	1200	176	0.15	2%				25	35	120	29%	
Grand Blvd.													
St. Johns Blvd. - Fourth Plain Blvd.	0.58	1700	481	0.28	1%				3	24	120	20%	
St. Johns Blvd.													
SR 500 - Ft. Vancouver Way	0.44	900	417	0.46	1%		197	15	25	34	120	28%	
Ft. Vancouver Way - Fourth Plain Blvd.	0.37	900	426	0.47	1%		"	"					
	5.66		**1043**	**0.53**	**3%**	**1.24**	**751**	**27**	**25**	**35**	**120**	**29%**	**6.7%**

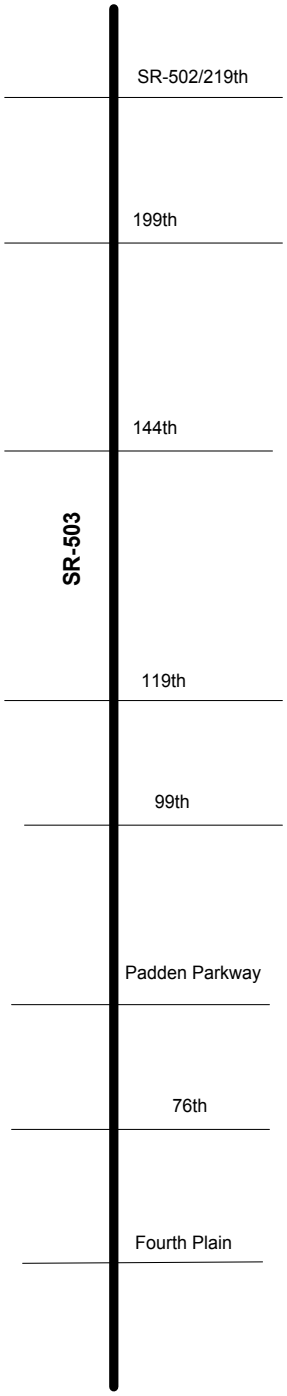


Andresen Rd./72nd Av. Corridor

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 - Southbound/Westbound										
Andresen Rd. / N.E. 72nd Avenue.													
119th St. - St. Johns Rd.	0.26	1600	968	0.61			173	38					
St. Johns Rd. - I-205	1.21	800	431	0.54			"	"					
I-205 overcrossing - 83rd St.	0.37	1800	1000	0.56			"	"					
83rd St. - 78th St.	0.23	1800	785	0.44			76	11	99	1	120	1%	
78th St. - 63rd St.	0.77	1800	564	0.31			76	36	7,78,99	32	360	9%	
63rd St. - Vancouver Mall Dr.	0.71	1800	870	0.48			76	34	7,78,99	32	360	9%	
Vancouver Mall Dr. - SR 500	0.63	1800	1049	0.58			87	26	32	19	140	14%	
	4.18		**1049**	**0.51**		**1.11**	**488**	**31**	**7,78,99**	**32**	**360**	**9%**	**20.0%**
Andresen Rd.													
SR 500 - Fourth Plain Blvd.	0.27	1800	1123	0.62			61	16	32	18	140	13%	
Fourth Plain Blvd. - 18th St.	0.56	1800	807	0.45			68	30	32	26	140	19%	
18th St. - Mill Plain Blvd.	0.69	1800	654	0.36			77	32	32	46	140	33%	
	1.52		**1123**	**0.46**		**1.11**	**206**	**27**	**32**	**46**	**140**	**33%**	**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.	0.29	1600	1143	0.71	4%		44	24	n/a				
St. Johns Rd. - I-205	1.24	800	693	0.87	3%		126	35	n/a				
I-205 overcrossing - 83rd St.	0.28	1800	1305	0.73	3%		52	19	n/a				
83rd St. - 78th St.	0.23	1800	1019	0.57	5%		26	32	99	17	120	14%	
78th St. - 63rd St.	0.77	1800	912	0.51	4%		102	27	7,78,99	67	360	19%	
63rd St. - Vancouver Mall Dr.	0.71	1800	1140	0.63	3%		92	28	7,78,99	66	360	18%	
Vancouver Mall Dr. - SR 500	0.63	1800	1198	0.67	2%		86	26	32	26	360	7%	
	4.15		**1305**	**0.68**	**3%**	**1.24**	**528**	**28**	**7,78,99**	**67**	**360**	**19%**	**20.0%**
Andresen Rd.													
SR 500 - Fourth Plain Blvd.	0.27	1800	1577	0.88	2%		44	22	32	29	140	21%	
Fourth Plain Blvd. - 18th St.	0.56	1800	1056	0.59	3%		174	12	32	31	140	22%	
18th St. - Mill Plain Blvd.	0.69	1800	1240	0.69	3%		87	29	32	33	140	24%	
	1.52		**1577**	**0.70**	**3%**	**1.24**	**305**	**18**	**32**	**33**	**140**	**24%**	**7.8%**

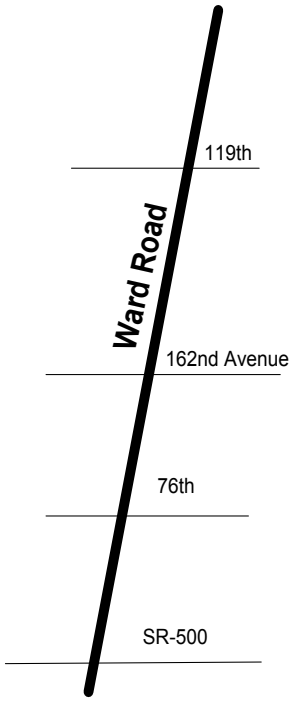


SR-503 Corridor

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 - Southbound/Westbound										
SR 503														
119th St.	- 99th St.	1.01	1800	1236	0.69	5%		97	37	7	21	90	23%	
99th St.	- Padden Parkway	0.76	1800	1621	0.90			84	33	7	21	90	23%	
Padden Parkway	- 76th St.	0.32	1800	1294	0.72	7%		60	19	7	21	90	23%	
76th St.	- Fourth Plain/SR 500	0.74	1800	1176	0.65		1.09	86	31	31	13	90	14%	
		2.83		**1621**	**0.75**	**6%**	**1.09**	**327**	**31**	**7**	**21**	**90**	**23%**	**5.0%**
SR 503														
SR-502	- 199th St.	1.00	1800	818	0.45	5%		70	51	7	22	90	24%	
199th St.	- 149th St.	2.82	1800	1247	0.69		1.11	185	55	7	22	90	24%	
149th St.	- 119th St.	1.27	1800	1218	0.68	3%		151	30	7	23	90	26%	
		5.09		**1247**	**0.66**	**4%**	**1.11**	**406**	**45**	**7**	**23**	**90**	**26%**	**5.0%**

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.	1.01	1800	1258	0.70	5%		100	36	7	31	90	34%	
99th St.	- Padden Parkway	0.79	1800	1850	1.03	3%		125	23	7	32	90	36%	
Padden Parkway	- 76th St.	0.30	1800	1762	0.98	2%		47	23	7	27	90	30%	
76th St.	- Fourth Plain/SR 500	0.73	1800	1707	0.95	3%	1.26	142	19	31				
		2.83		**1850**	**0.91**	**3%**	**1.26**	**414**	**25**	**7**	**32**	**90**	**36%**	**5.0%**
SR 503														
SR-502	- 199th St.	1.00	1800	901	0.50	3%		118	31	7	28	90	31%	
199th St.	- 149th St.	2.57	1800	1066	0.59	4%	1.23	201	46	7	28	90	31%	
149th St.	- 119th St.	1.51	1800	1257	0.70	4%		122	45	7	30	90	33%	
		5.08		**1257**	**0.61**	**4%**	**1.23**	**441**	**41**	**7**	**30**	**90**	**33%**	**5.0%**

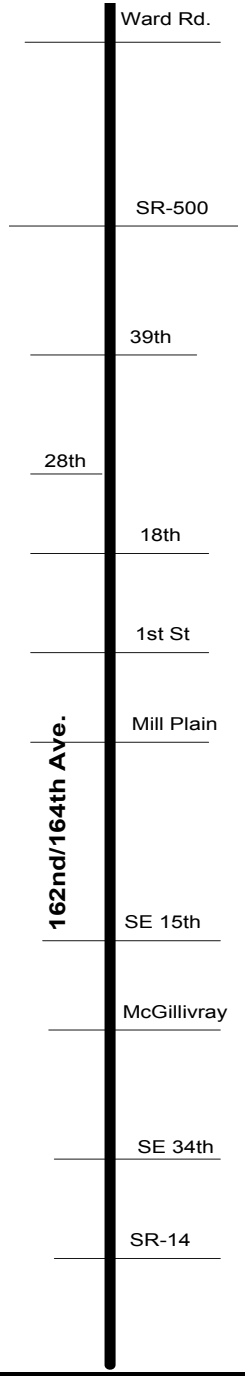


Ward Road Corridor

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										
Ward Road													
119th St. - 162nd Ave.	2.12	800	618	0.77			120	64					
162nd Ave. - 76th St.	0.81	800	973	1.22			80	36					
76th St. - SR 500	0.37	800	727	0.91			38	35					
	3.30		**973**	**0.94**		**1.11**	**238**	**50**					

Ward Road 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										
Ward Road													
119th St. - 162nd Ave.	2.12	800	606	0.76	3%		185	41					
162nd Ave. - 76th St.	0.80	800	885	1.11	3%		90	32					
76th St. - SR 500	0.37	800	717	0.90	3%		47	28					
	3.29		**885**	**0.88**	**3%**	**1.24**	**322**	**37**					



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 - Southbound/Westbound										
162nd/164th Ave.														
Ward Rd.	- SR 500	0.90	800	377	0.47			161	20					
SR 500	- 39th St.	0.61	800	788	0.99			129	17					
39th St.	- 28th St.	0.91	1800	875	0.49			57	57	18	7	90	8%	
28th St.	- 18th St.	0.41	1800	748	0.42			61	24	18	7	90	8%	
18th St.	- 1st St.	1.62	1800	814	0.45			113	52	18	7	90	8%	
1st St.	- Mill Plain	0.40	1800	876	0.49	7%		72	20	18				
		4.85		**876**	**0.53**	**7%**	**1.11**	**593**	**29**	**18**	**7**	**90**	**8%**	**5.0%**
162nd/164th Ave.														
Mill Plain	- 15th St.	0.37	1700	933	0.55	9%		44	30	41	18	120	15%	
15th St.	- McGillvray	0.40	1700	943	0.55		1.11	54	27	41	20	120	17%	
McGillvray	- 34th St.	0.53	1700	1585	0.93			76	25	41	19	120	16%	
34th St.	- SR 14	0.35	1800	2014	1.12			43	29	41	19	120	16%	
		1.65		**2014**	**0.87**	**9%**	**1.11**	**217**	**27**	**41**	**20**	**120**	**17%**	**7.1%**

162nd/164th Avenue Corridor

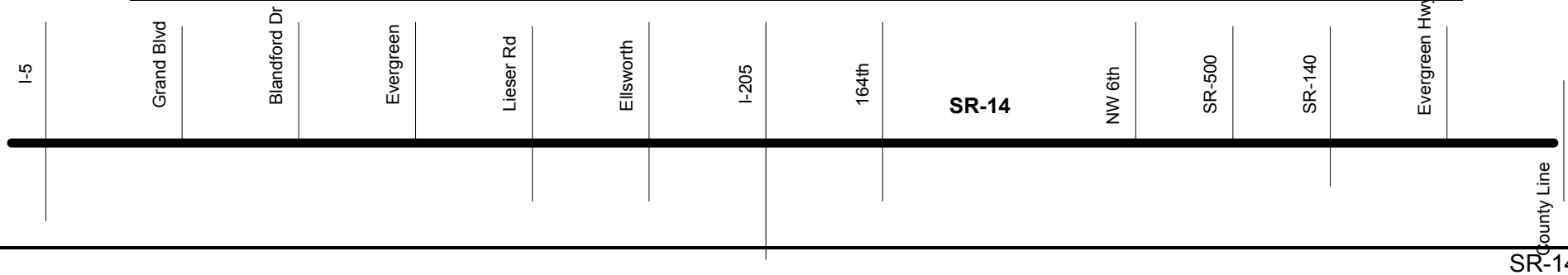
PM Peak		Segment		Traffic Volume	CCI	Truck Percent	AVO	Travel Time (Seconds)	Speed (MPH)	Transit Lines on CMS links	Transit Riders	Transit Seat Capacity	Transit Capacity Used	Transit Seats/Lane Capacity
		Length	Capacity	PM - Nouthbound/Eastbound										
162nd/164th Ave.														
Ward Rd.	- SR 500	0.90	800	497	0.62			89	36	n/a				
SR 500	- 39th St.	0.61	800	767	0.96	2%		76	29	n/a				
39th St.	- 28th St.	0.91	1800	852	0.47			72	46	18	10	100	10%	
28th St.	- 18th St.	0.41	1800	820	0.46			42	35	18	9	100	9%	
18th St.	- 1st St.	1.62	1800	891	0.50			152	38	18	8	100	8%	
1st St.	- Mill Plain	0.40	1800	1152	0.64	2%		72	20	18	3	100	3%	
		4.85		**1152**	**0.57**	**2%**	**1.24**	**503**	**35**	**18**	**10**	**100**	**10%**	**5.6%**
162nd/164th Ave.														
Mill Plain	- 15th St.	0.37	1700	1272	0.75	3%		66	20	18,41	32	220	15%	
15th St.	- McGillvray	0.40	1700	1236	0.73		1.20	77	19	18,41	32	220	15%	
McGillvray	- 34th St.	0.53	1700	1556	0.92	2%		77	25	18,41	32	220	15%	
34th St.	- SR 14	0.35	1800	1978	1.10	1%		77	16	41	29	120	24%	
		1.65		**1978**	**0.91**	**2%**	**1.20**	**297**	**20**	**18,41**	**32**	**220**	**15%**	**12.9%**

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 - Southbound/Westbound										
SR 14														
I-5	- Grand Blvd.	1.45	3000	2614	0.87	4%		362	60	114	16	40	40%	
Grand Blvd.	- Blandford Dr.	0.96	3400	2842	0.84			"	"	114	16	40	40%	
Blandford Dr.	- Evergreen Blvd.	0.55	3400	2842	0.84		1.03	"	"	114	16	40	40%	
Evergreen Blvd.	- Lieser Rd.	1.29	3400	2886	0.85			"	"	114	16	40	40%	
Lieser Rd.	- Ellsworth Rd.	1.23	3400	2979	0.88			"	"	114	16	40	40%	
Ellsworth Rd.	- I-205	0.51	3400	2428	0.71	3%		"	"	114	16	40	40%	
		5.99		**2979**	**0.85**	**4%**	**1.03**	**362**	**60**	**114**	**16**	**40**	**40%**	**1.2%**
SR 14														
I-205	- 164th Ave.	2.45	3400	3718	1.09	7%		237	37	114	16	40	40%	
		2.45		**3718**	**1.09**	**7%**	**1.04**	**237**	**37**	**114**	**16**	**40**	**40%**	**1.2%**
SR 14														
164th Ave.	- 6th Ave. NW	3.55	3400	2022	0.59			371	34	41,114	36	160	23%	
6th Ave. NW	- SR 500	2.18	1100	1121	1.02			157	50					
SR 500	- 32nd St.	2.42	1000	964	0.96	4%		197	44					
32nd St.	- Evergreen Hwy.	1.19	1000	256	0.26			69	62					
Evergreen Hwy.	- County Line	2.30	1000	121	0.12									
		11.64		**2022**	**0.73**	**4%**	**1.10**	**794**	**42**	**41,114**	**36**	**160**	**23%**	**4.7%**

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	- Grand Blvd.	1.45	3000	2701	0.90	4%		169	63	114	15	40	38%	
Grand Blvd.	- Blandford Dr.	0.96	3400	2821	0.83	4%		"	"	114	15	40	38%	
Blandford Dr.	- Evergreen Blvd.	0.55	3400	2897	0.85	4%	1.03	"	"	114	15	40	38%	
Evergreen Blvd.	- Lieser Rd.	1.29	3400	2855	0.84	4%		172	63	114	15	40	38%	
Lieser Rd.	- Ellsworth Rd.	1.23	3400	2921	0.86	4%		"	"	114	15	40	38%	
Ellsworth Rd.	- I-205	0.51	3400	2341	0.69	3%		"	"	114	15	40	38%	
		5.99		**2921**	**0.85**	**4%**	**1.03**	**341**	**63**	**114**	**15**	**40**	**38%**	**1.2%**
SR 14														
I-205	- 164th Ave.	2.45	3400	3260	0.96	5%		139	63	114	15	40	38%	
		2.45		**3260**	**0.96**	**5%**	**1.04**	**139**	**63**	**114**	**15**	**40**	**38%**	**1.2%**
SR 14														
164th Ave.	- 6th Ave. NW	3.99	3400	2023	0.60	5%		248	58	41,114	42	160	26%	
6th Ave. NW	- SR 500	2.59	1100	1014	0.92	8%		170	55					
SR 500	- 32nd St.	2.45	1000	1150	1.15	5%		192	46					
32nd St.	- Evergreen Hwy.	2.20	1000	287	0.29	7%		322	50					
Evergreen Hwy.	- County Line	2.30	1000	256	0.26	8%		"	"					
		13.53		**2023**	**0.73**	**7%**	**1.04**	**932**	**52**	**41,114**	**42**	**160**	**26%**	**4.7%**

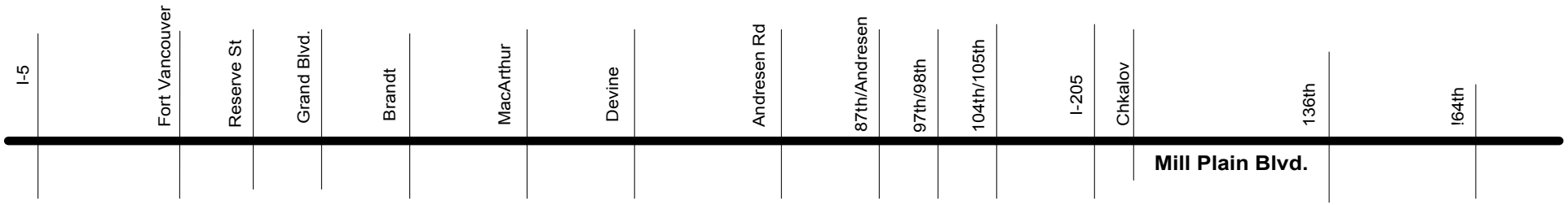


Mill Plain Blvd. Corridor

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 - Southbound/Westbound										
Mill Plain														
I-5	- Ft. Vancouver	0.16	1800	758	0.42	2%		24	24	37	54	240	23%	
Ft. Vancouver	- Reserve St.	0.47	1800	623	0.35	3%		59	29	37,38	115	380	30%	
Reserve St.	- Grand Blvd.	0.58	1800	658	0.37	1%		56	37	37,38	125	380	33%	
Grand Blvd.	- Brandt Rd.	0.58	1800	599	0.33	6%		54	39	37,38	118	380	31%	
Brandt Rd.	- MacArthur Blvd.	0.51	1800	662	0.37	3%		51	36	37,38	115	380	30%	
MacArthur Blvd.	- Devine Rd.	0.25	1800	655	0.36	4%		37	24	37	66	240	28%	
Devine Rd.	- Andresen Rd.	0.60	1800	687	0.38	3%	1.15	52	42	37	73	240	30%	
Andresen Rd.	- 87th/Leiser Rd.	0.82	1800	637	0.35	3%		106	28	37	69	240	29%	
87th/Leiser Rd.	- 97/98th Ave.	0.64	1800	1096	0.61	3%		66	35	37	38	240	16%	
97/98th Ave.	- 104/105th Ave.	0.41	1800	986	0.55	3%		43	34	37	34	240	14%	
104/105th Ave.	- I-205	0.26	1800	1015	0.56	3%		30	31	37	27	240	11%	
		5.28		**1096**	**0.44**	**3%**	**1.15**	**578**	**33**	**37,38**	**125**	**380**	**33%**	**21.1%**
Mill Plain														
I-205	- Chkalov Drive	0.21	2400	2348	0.98			42	18	37,175	52	440	12%	
Chkalov Drive	136th Ave.	1.09	2400	1372	0.57		1.13	207	19	37,175	48	440	11%	
136th Ave.	- 164th Ave.	1.40	1800	1232	0.68			186	27	41	19	120	16%	
		2.70		**2348**	**0.68**		**1.13**	**435**	**22**	**37,175**	**52**	**440**	**12%**	**27.5%**

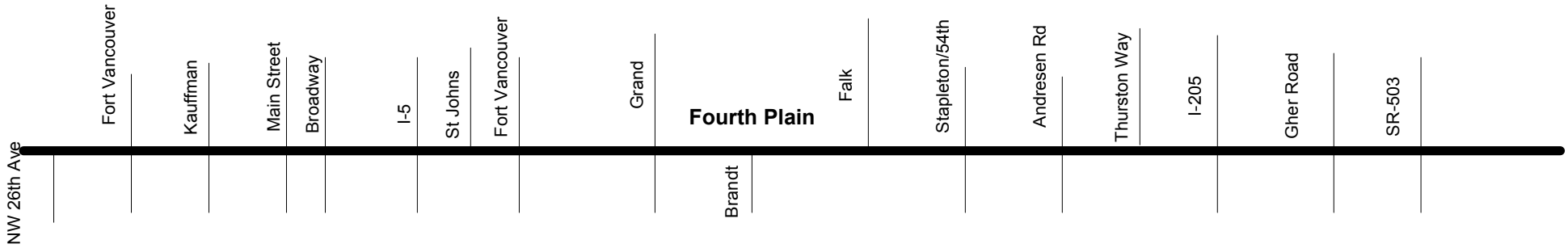
Mill Plain Blvd. Corridor

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														
I-5	- Ft. Vancouver	0.16	1800	837	0.47	1%		33	17	37	108	240	45%	
Ft. Vancouver	- Reserve St.	0.47	1800	831	0.46	1%		47	36	37,38	151	380	40%	
Reserve St.	- Grand Blvd.	0.58	1800	772	0.43	1%		77	27	37,38	142	380	37%	
Grand Blvd.	- Brandt Rd.	0.58	1800	713	0.40	2%		57	37	37,38	137	380	36%	
Brandt Rd.	- MacArthur Blvd.	0.51	1800	880	0.49	2%		58	32	37,38	137	380	36%	
MacArthur Blvd.	- Devine Rd.	0.25	1800	1162	0.65	1%		29	31	37	102	240	43%	
Devine Rd.	- Andresen Rd.	0.60	1800	1230	0.68	1%	1.28	87	25	37	100	240	42%	
Andresen Rd.	- 87th/Leiser Rd.	0.82	1800	1025	0.57	1%		132	22	37	86	240	36%	
87th/Leiser Rd.	- 97/98th Ave.	0.64	1800	1279	0.71	1%		102	23	37	69	240	29%	
97/98th Ave.	- 104/105th Ave.	0.41	1800	1215	0.68	1%		88	17	37	54	240	23%	
104/105th Ave.	- I-205	0.26	1800	1199	0.67	1%		85	11	37	58	240	24%	
		5.28		**1279**	**0.58**	**1%**	**1.28**	**795**	**24**	**37,38**	**151**	**380**	**40%**	**21.1%**
Mill Plain														
I-205	- Chkalov Drive	0.21	3000	3148	1.05	2%		97	8	37,175	80	440	18%	
Chkalov Drive	136th Ave.	1.09	2400	2003	0.83	2%	1.25	195	20	37,175	69	440	16%	
136th Ave.	- 164th Ave.	1.40	1800	1651	0.92	2%		200	25	41	35	120	29%	
		2.70		**3148**	**0.90**	**2%**	**1.25**	**492**	**20**	**37,175**	**80**	**440**	**18%**	**27.5%**



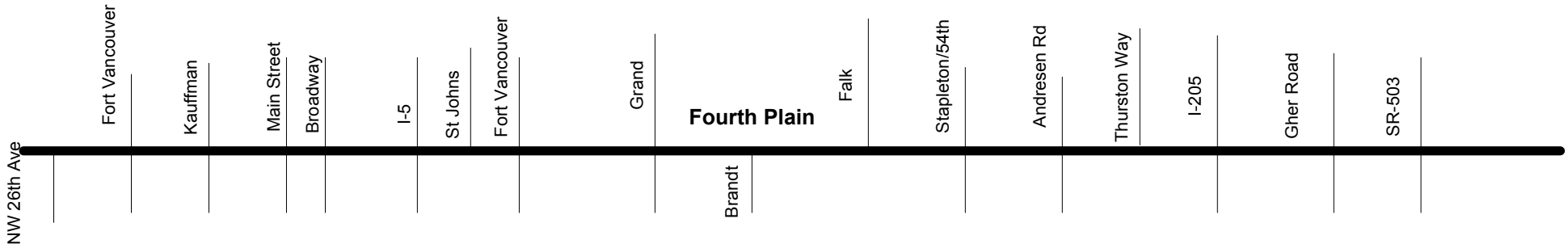
Fourth Plain Blvd. Corridor

AM Peak		Segment Length	Segment Capacity	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
		AM - Southbound/Westbound												
Fourth Plain/SR 501														
I-5	- Broadway	0.55	1700	694	0.41	8%		49	40					
Main St.	- Kaufman	0.46	1700	678	0.40			63	26					
Kaufman	- Fruit Valley Rd.	0.57	1700	623	0.37			64	32	1	17	105	16%	
Fruit Valley Rd.	- Port Office	0.60	1700	527	0.31	12%	1.03	57	38					
NW 26th St.	- TMA Boundary	1.85	1800	511	0.28									
		4.03		**694**	**0.34**	**10%**	**1.03**	**233**	**34**	**1**	**17**	**105**	**16%**	**6.2%**
Mill Plain/SR 501														
I-5	- Broadway	0.27	1800	1070	0.59	3%								
Main St.	- Lincoln	0.63	1800	859	0.48	4%								
Lincoln	- Fourth Plain	0.86	1800	0										
		1.76		**1070**	**0.52**	**4%**	**1.11**							
Fourth Plain														
I-5	- St. Johns Blvd.	0.36	1600	784	0.49			85	15	4	148	320	46%	
St. Johns Blvd.	- Ft. Vancouver	0.32	1600	429	0.27			37	31	4	142	320	44%	
Ft. Vancouver	- Grand Blvd.	0.30	1600	577	0.36			43	25	4	145	320	45%	
Grand Blvd.	- Brandt Rd.	0.58	1600	540	0.34			55	38	4	142	320	44%	
Brandt Rd.	- Falk Rd.	0.22	1700	504	0.30			29	27	4	132	320	41%	
Falk Rd.	- Stapleton Rd.	0.50	1700	475	0.28			59	31	4	104	320	33%	
Stapleton Rd.	- Andresen Rd.	0.81	1700	704	0.41		1.14	99	29	4	91	320	28%	
		3.09		**784**	**0.37**		**1.14**	**407**	**27**	**4**	**148**	**320**	**46%**	**18.8%**
Fourth Plain														
Andresen Rd.	- Thurston Way	0.95	1800	612	0.34			119	29	4	72	320	23%	
Thurston Way	- 54th St.	0.93	1800	365	0.20			103	33	31	16	90	18%	
54th St.	- Gher Rd.	0.70	800	439	0.55			86	29	31	20	90	22%	
Gher Rd.	- SR 503	0.46	800	462	0.58			64	26	31	17	90	19%	
		3.04		**612**	**0.39**		**1.11**	**372**	**29**	**4**	**72**	**320**	**23%**	**17.8%**



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	0.55	1700	855	0.50	8%		80	25					
Main St.	- Kaufman	0.46	1700	810	0.48	8%		97	17					
Kaufman	- Fruit Valley Rd.	0.57	1700	706	0.42	8%		58	35	1	14	140	10%	
Fruit Valley Rd.	- Port Office	0.60	1700	540	0.32	34%	1.18	60	36					
NW 26th St.	- TMA Boundary	1.85	1000	473	0.47	34%		168	40					
		4.03		**855**	**0.45**	**18%**	**1.18**	**463**	**31**	**1**	**14**	**140**	**10%**	**8.2%**
Mill Plain/SR 501														
I-5	- Broadway	0.27	1800	1292	0.72	3%								
Main St.	- Lincoln	0.63	1800	750	0.42	3%								
Lincoln	- Fourth Plain	0.86	1800	175	0.10	19%								
		1.76		**1292**	**0.48**	**8%**	**1.24**	**0**	**0**					
Fourth Plain														
I-5	- St. Johns Blvd.	0.36	1600	939	0.59	4%		45	29	4	179	320	56%	
St. Johns Blvd.	- Ft. Vancouver	0.32	1600	753	0.47	2%		70	16	4	187	320	58%	
Ft. Vancouver	- Grand Blvd.	0.30	1600	972	0.61	2%		45	24	4	190	320	59%	
Grand Blvd.	- Brandt Rd.	0.58	1600	958	0.60	2%		63	33	4	179	320	56%	
Brandt Rd.	- Falk Rd.	0.22	1700	1026	0.60	2%		22	36	4	178	320	56%	
Falk Rd.	- Stapleton Rd.	0.50	1700	1023	0.60	2%		80	23	4	151	320	47%	
Stapleton Rd.	- Andresen Rd.	0.81	1700	1252	0.74	2%	1.32	163	18	4	138	320	43%	
		3.09		**1252**	**0.63**	**2%**	**1.32**	**488**	**23**	**4**	**190**	**320**	**59%**	**18.8%**
Fourth Plain														
Andresen Rd.	- Thurston Way	0.95	1800	1205	0.67	2%		135	25	4	108	320	34%	
Thurston Way	- 54th St.	0.93	1800	867	0.48	2%		103	33	31	48	120	40%	
54th St.	- Gher Rd.	0.53	800	955	1.19	1%		409	5	31	42	120	35%	
Gher Rd.	- SR 503	0.45	800	1055	1.32	1%		146	11	31	34	120	28%	
		2.86		**1205**	**0.81**	**1%**	**1.24**	**793**	**13**	**4**	**108**	**320**	**34%**	**17.8%**

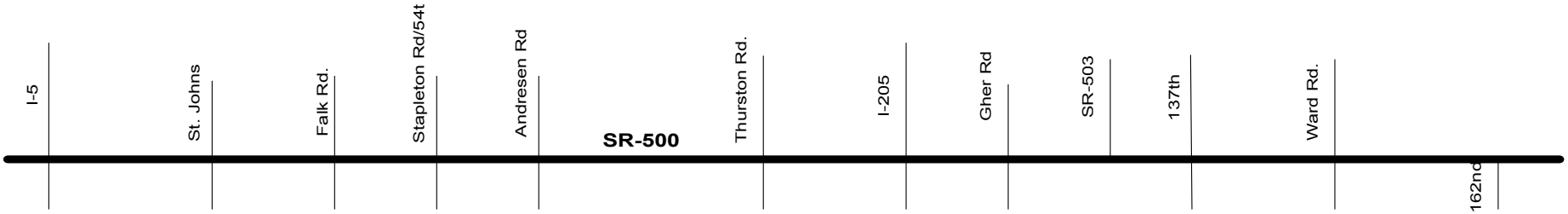


SR-500 Corridor

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 - Southbound/Westbound										
SR 500														
I-5	- St. Johns/Grand	1.08	2400	1967	0.82			70	56					
St. Johns/Grand	- Falk Rd.	0.66	2400	1922	0.80	4%		60	40					
Falk Rd.	- Stapleton Rd./54th	0.58	2400	1934	0.81			46	45					
Stapleton Rd./54th	- Andresen Rd.	0.75	2400	1999	0.83		1.14	131	21					
		3.07		**1999**	**0.82**	**4%**	**1.14**	**307**	**36**					
SR 500														
Andresen Rd.	- Thurston Way	0.95	2400	1897	0.79			56	61	190				
Thurston Way	- I-205	0.92	3000	2414	0.80	3%		124	46	12	22	140	15.7%	
I-205	- Gher Rd.	0.65	3000	3140	1.05			"	"	12	20	140	14.3%	
Gher Rd.	- SR 503	0.54	3000	2407	0.80			86	23					
		3.06		**3140**	**0.87**	**3%**	**1.11**	**266**	**41**	**12**	**22**	**140**	**15.7%**	**4.7%**
SR 500														
SR 503	- 137th Ave.	1.08	1800	1639	0.91			160	24	31				
137th Ave.	- Ward Rd.	0.50	1800	1208	0.67			64	28	31				
Ward Rd.	- 162nd Ave.	0.75	800	648	0.81			71	38					
		2.33		**1639**	**0.84**		**1.11**	**295**	**28**	**31**				

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	1.08	2400	1919	0.80	3%		193	20	190,191	16	80	20%	
St. Johns/Grand	- Falk Rd.	0.66	2400	2109	0.88	3%		62	38		16	80	20%	
Falk Rd.	- Stapleton Rd./54th	0.58	2400	2064	0.86	2%		59	35		16	80	20%	
Stapleton Rd./54th	- Andresen Rd.	0.75	2400	2133	0.89	2%	1.21	79	34		16	80	20%	
		3.07		**2133**	**0.85**	**2%**	**1.21**	**393**	**28**	**190,191**	**16**	**80**	**20%**	**3.3%**
SR 500														
Andresen Rd.	- Thurston Way	0.95	2400	2214	0.92	2%		136	25	190,191	16	80	20%	
Thurston Way	- I-205	0.92	3000	3004	1.00	2%		135	42	12	57	140	41%	
I-205	- Gher Rd.	0.65	3000	3172	1.06	3%		"	"	12	57	140	41%	
Gher Rd.	- SR 503	0.54	3000	2374	0.79	3%		67	29					
		3.06		**3172**	**0.96**	**2%**	**1.24**	**338**	**33**	**12**	**57**	**140**	**41%**	**4.7%**
SR 500														
SR 503	- 137th Ave.	1.08	1800	1909	1.06	2%		146	27	31	34	120	28%	
137th Ave.	- Ward Rd.	0.50	1800	1299	0.72	3%		47	38	31	29	120	24%	
Ward Rd.	- 162nd Ave.	0.75	800	852	1.07	4%		154	18					
		2.33		**1909**	**1.00**	**3%**	**1.24**	**347**	**24**	**31**	**34**	**120**	**28%**	**6.7%**

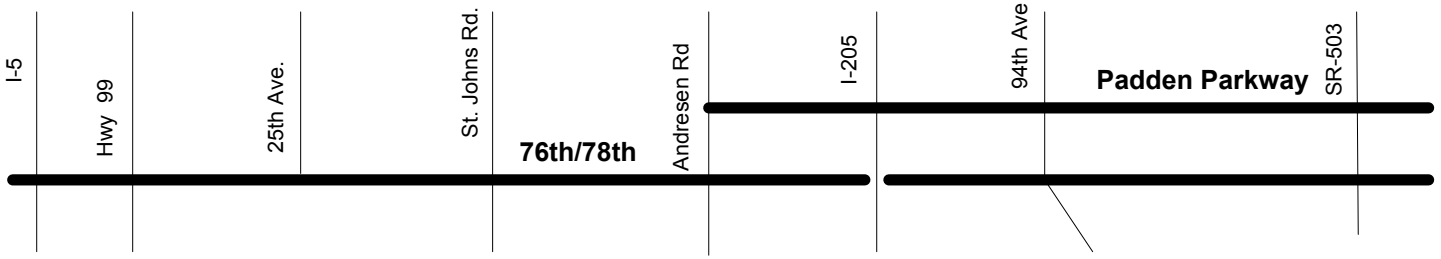


78th/76th/Padden Parkway Corridor

AM Peak		Segment Length	Segment Capacity	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
		AM - Southbound/Westbound												
78th St./76th St.														
I-5	- Hwy 99	0.11	1700	586	0.34	7%		12	33	78	12	150	8%	
Hwy 99	- 25th Ave.	0.77	1700	505	0.30	8%		84	33	78	13	150	9%	
25th Ave.	- St. Johns Rd.	1.00	1700	522	0.31	7%		86	42	78	11	150	7%	
St. Johns Rd.	- Andresen Rd.	1.13	800	597	0.75	6%		181	22	78	11	150	7%	
Andresen Rd.	- Covington/94th	1.30	800	416	0.52			166	28	7	22	90	24%	
Covington/94th	- SR 503 (117th)	1.14	800	460	0.58	5%		135	30	7	22	90	24%	
		5.45		**597**	**0.51**	**7%**	**1.11**	**664**	**30**	**7**	**22**	**90**	**24%**	**5.6%**
Padden Parkway														
Andresen Rd.	- I-205	0.41	1800	824	0.46			81	18					
I-205	- 94th Av.	0.88	1000	793	0.79			65	49					
94th Av.	- SR 503 (117th)	1.13	2000	721	0.36			95	43					
		2.42		**824**	**0.54**		**1.11**	**241**	**36**					

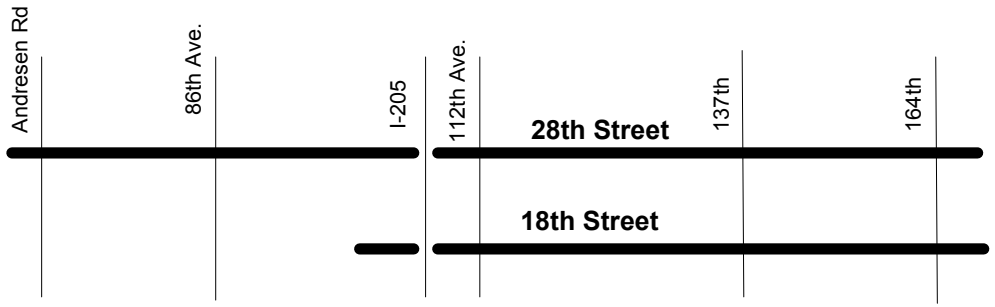
78th/76th/Padden Parkway Corridor

PM Peak		Segment Length	Segment Capacity	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
		PM - Nouthbound/Eastbound												
78th St./76th St.														
I-5	- Hwy 99	0.09	1700	1094	0.64	4%		83	4	78	8	150	5%	
Hwy 99	- 25th Ave.	0.78	1700	836	0.49	4%		69	41	78	16	150	11%	
25th Ave.	- St. Johns Rd.	0.99	1700	737	0.43	3%		112	32	78	11	150	7%	
St. Johns Rd.	- Andresen Rd.	1.13	800	886	1.11	4%		164	25	78	16	150	11%	
Andresen Rd.	- Covington/94th	1.30	800	560	0.70	3%		151	31	7	29	90	32%	
Covington/94th	- SR 503 (117th)	1.14	800	566	0.71	2%		201	20	7	31	90	34%	
		5.43		**1094**	**0.72**	**3%**	**1.24**	**780**	**25**	**7**	**31**	**90**	**34%**	**5.6%**
Padden Parkway														
Andresen Rd.	- I-205	0.41	1800	1009	0.56	4%		41	36					
I-205	- 94th Av.	0.78	1000	802	0.80	3%		73	38					
94th Av.	- SR 503 (117th)	1.15	2000	729	0.36	3%		138	30					
		2.34		**1009**	**0.55**	**3%**	**1.24**	**252**	**33**					



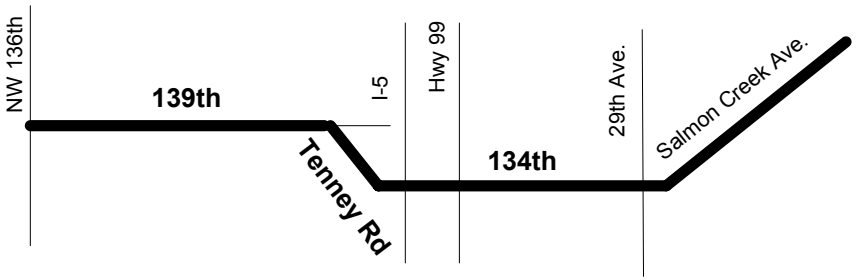
28th/18th Street Corridor														
AM Peak		**Segment**		**Traffic Volume**	**CCI**	**Truck Percent**	**AVO**	**Travel Time (Seconds)**	**Speed (MPH)**	**Transit Lines on CMS links**	**Transit Riders**	**Transit Seat Capacity**	**Transit Capacity Used**	**Transit Seats/Lane Capacity**
		Length	**Capacity**	**AM - Southbound/Westbound**										
28th Street														
Andresen Rd.	- 86th Ave.	0.70	800	650	0.81			63	40	30	42	175	24%	
86th Ave.	- 112th Ave.	1.36	800	569	0.71			148	33	30	34	175	19%	
112th Ave.	- 137th Ave.	1.32	800	814	1.02			167	28	30	24	175	14%	
137th Ave.	- 164th Ave.	1.18	800	515	0.64			189	22					
		4.56		**814**	**0.83**		**1.11**	**567**	**29**	**30**	**42**	**175**	**24%**	**10.9%**
18th Street														
112th Ave.	- 137th Ave.	1.32	800	527	0.66			154	31	30(pm only), 177	176	320	55%	
137th Ave.	- 164th Ave.	1.19	800	391	0.49			160	27	n/a				
		2.51		**527**	**0.59**		**1.11**	**314**	**29**	**30(pm only), 177**	**176**	**320**	**55%**	**20.0%**

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.	0.70	800	866	1.08	3%		227	11	30	61	210	29%	
86th Ave.	- 112th Ave.	1.36	800	922	1.15	2%		241	20					
112th Ave.	- 137th Ave.	1.32	800	787	0.98	2%		191	25					
137th Ave.	- 164th Ave.	1.18	800	489	0.61	1%		157	27					
		4.56		**922**	**1.00**	**2%**	**1.24**	**816**	**20**	**30**	**61**	**210**	**29%**	**13.1%**
18th Street														
112th Ave.	- 137th Ave.	1.32	800	566	0.71	3%		180	26	30, 177	40	210	19%	
137th Ave.	- 164th Ave.	1.19	800	437	0.55			186	23					
		2.51		**566**	**0.64**	**3%**	**1.24**	**366**	**25**	**30, 177**	**40**	**210**	**19%**	**13.1%**



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 - Southbound/Westbound**										
134th St./139th St./Salmon Creek Ave.													
NW 36th Ave. - 10th Ave.	2.02	800	524	0.66		1.11	440	23	21	21	120	18%	
10th Ave. - I-5	0.79	1800	964	0.54	7%		"	"	21	16	120	13%	
I-5 - Salmon Cr. Ave.	0.73	800	189	0.24	5%		280	29	25	1	120	1%	
Salmon Cr. Ave. - 50th Ave.	1.52	800	53	0.07			"	"	25	2	120	2%	
	5.06		**964**	**0.56**	**6%**	**1.11**	**720**	**25**	**21**	**21**	**120**	**18%**	**7.5%**

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. - 10th Ave.	2.39	800	656	0.82	3%	1.20	222	39	21	6	120	5%	
10th Ave. - I-5	0.33	1800	1250	0.69	2%		44	27	21	6	120	5%	
I-5 - Salmon Cr. Ave.	0.71	800	235	0.29	2%		307	26	25	9	120	8%	
Salmon Cr. Ave. - 50th Ave.	1.51	800	205	0.26	1%		"	"	25	8	120	7%	
	4.94		**1250**	**0.69**	**2%**	**1.20**	**573**	**31**	**25**	**9**	**120**	**8%**	**7.5%**

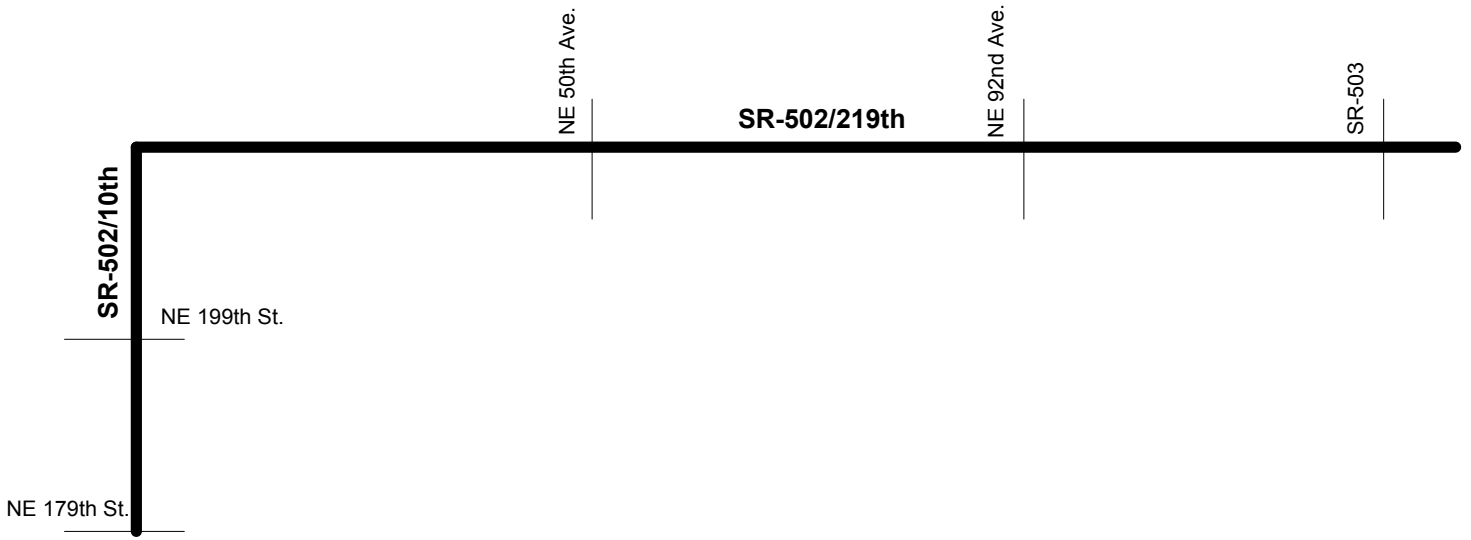


SR-502/219th St. Corridor

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 - Southbound/Westbound										
SR 502													
179th St. - 199th St.	1.00	800	771	0.96			162	44	173	11	30	37%	
199th St. 219th St.	1.00	800	591	0.74			"	"	173	11	30	37%	
10th Ave. - 50th Ave.	2.00	800	572	0.72			438	45	173	11	30	37%	
50th Ave. - 92nd Ave	2.00	800	490	0.61		1.09	"	"	173	11	30	37%	
92nd Ave. - SR-503	1.50	800	550	0.69	5%		"	"	173	11	30	37%	
	7.50		**771**	**0.73**	**5%**	**1.09**	**600**	**45**	**173**	**11**	**30**	**37%**	**1.9%**

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													
179th St. - 199th St.	1.00	800	979	1.22	4%		157	46	173	8	30	27%	
199th St. 219th St.	1.00	800	667	0.83	3%		"	"	173	8	30	27%	
10th Ave. - 50th Ave.	2.00	800	614	0.77	6%		491	40	173	8	30	27%	
50th Ave. - 92nd Ave	2.00	800	623	0.78	5%	1.22	"	"	173	8	30	27%	
92nd Ave. - SR-503	1.50	800	690	0.86	3%		"	"	173	8	30	27%	
	7.50		**979**	**0.88**	**4%**	**1.22**	**648**	**42**	**173**	**8**	**30**	**26%**	**1.9%**

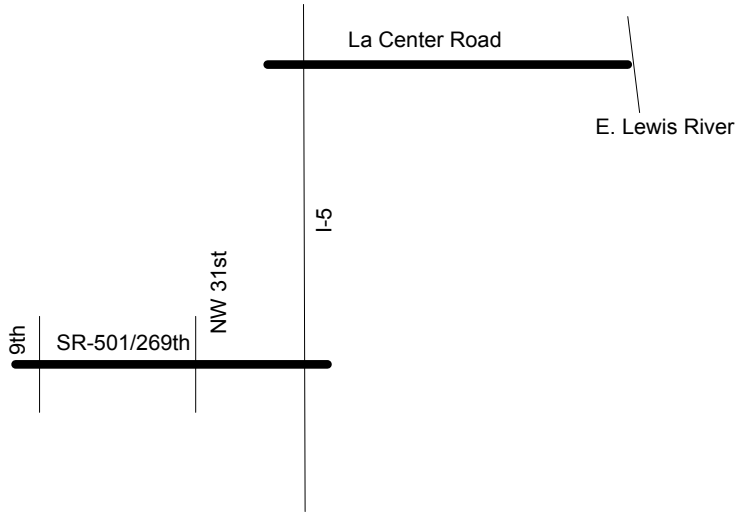


SR-501 & La Center Road Corridors

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 - Southbound/Westbound										
SR 501														
I-5	- NW 31st Ave.	0.80	800	297	0.37			228	41	8	1	70	1%	
NW 31st Ave.	- 9th St.	1.79	800	181	0.23			"	"	8	7	70	10%	
		2.59		**297**	**0.29**		**1.11**	**228**	**41**	**8**	**7**	**70**	**10%**	**4.4%**
La Center Rd.														
I-5	- E. Fork Lewis Rv.	1.86	800	399	0.50			218	31	8	7	70	10%	
		1.86		**399**	**0.50**		**1.11**	**218**	**31**	**8**	**7**	**70**	**10%**	**4.4%**

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	- NW 31st Ave.	0.80	800	257	0.32	6%		211	44	8	9	50	18%	
NW 31st Ave.	- 9th St.	1.79	800	142	0.18	4%		"	"	8	9	50	18%	
		2.59		**257**	**0.24**	**5%**	**1.24**	**211**	**44**	**8**	**9**	**50**	**18%**	**3.1%**
La Center Rd.														
I-5	- E. Fork Lewis Rv.	1.86	800	497	0.62			172	39	8	5	50	10%	
		1.86		**497**	**0.62**		**1.24**	**172**	**39**	**8**	**5**	**50**	**10%**	**3.1%**



CHAPTER IV.
PERFORMANCE MONITORING AND IMPLEMENTATION

The purpose of Congestion Management System (CMS) is to develop a better tool that provides information on the performance of the transportation system and identify strategies to alleviate congestion and enhance mobility.

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

The CMS database and the Congestion Management Report will accomplish several objectives. It will support the local decision-making process, increase public awareness of transportation issues and tradeoffs, improve calibration efforts related to the regional travel forecasting model, and facilitate the means to develop tools for a more comprehensive and innovative analysis of the transportation system.

The subsequent phase of the congestion monitoring development is to: 1) continue the enhanced data collection process for transit, travel time, and automobile occupancy, 2) identify additional data collection needs, 3) improve the data collection process, 4) and initiate a more seamless process to make the update and distribution of data more automated and dynamic. Another key activity is to begin the enhancement of the regional traffic count program to develop a regional transportation system database that incorporates the new activities and is accessible to users.

The CMS is intended to be a continuing systematic process that provides information on transportation system performance.

Continued coordination with local jurisdictions and local agencies is another key activity to ensure consistency of data collection, data factoring and ease of data storage/retrieval. This will also ensure the traffic count and turn movement and other data elements support local and regional transportation planning studies and Concurrency Management programs

Congestion monitoring is a key component of the regional transportation planning process. The CMS for the Clark County region supports the long-term transportation goals and objectives defined in the Metropolitan Transportation Plan. It assists in identifying the most effective transportation projects to address congestion. The Congestion Management System Monitoring element is closely related to the data management and travel forecasting model elements.

Data elements will be reviewed that began in the 1999 monitoring program such as transit ridership and capacity, travel time and speed for the congestion management corridors, auto occupancy information and vehicle classification data. The continued data collection need will be identified. Existing data collection activities in the region will be identified that can provide support for the CMS, such as corridor travel times for concurrency and will be utilized for application to the CMS. Additional data collection needs will be identified and initiated. These may include filling missing data from previous years, developing a process for ongoing transit ridership and travel time information, adding information roadway lane density, and vehicle classification counts for the congestion management corridors.