



2011 Metro Vancouver Regional Screenline Survey

Summary Report

August 2013



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EXECUTIVE SUMMARY

The 2011 Screenline Survey included traffic and transit counts as part of ongoing regional data collection efforts to track trends in travel volumes and modes of transport.

The objectives of the 2011 Metro Vancouver Regional Screenline Survey were to:

- Record vehicle and person volumes crossing major transportation boundaries on typical fall weekdays when commuter demand is at its peak and most predictable;
- Determine current travel conditions in the Lower Mainland commuter shed;
- Quantify changes in travel usage throughout the region;
- Identify trends in transit ridership, pedestrian and cyclist volumes, ride sharing and vehicle composition along key corridors throughout the region;
- Provide a basis for comparative assessment of the potential effect of alternative infrastructure investments or land use changes; and
- Provide information to calibrate and validate TransLink's regional transportation model to reflect current travel conditions and infrastructure.

Each screenline in the survey was comprised of individual count stations at which data were collected for vehicle volume, vehicle classification and occupancy, transit vehicle occupancy, or a combination thereof.

Automatic Vehicle Counts were conducted to determine the total number of vehicles passing each roadway station for 109 stations at 32 regional screenlines, collected in 15-minute intervals over 24-hours for a continuous two week period. Following validation, ten weekdays in that period were averaged to produce typical weekday traffic volumes.

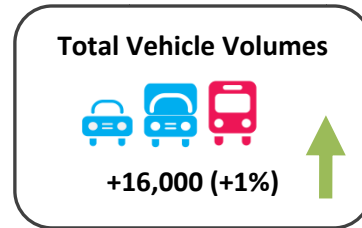
Classification and Occupancy Counts separated vehicle volumes into several classifications (passenger vehicles, trucks, buses, motorcycles, taxis, and other vehicles), collected occupancy data for passenger vehicles, and recorded pedestrian and cyclist traffic. Observers collected the data on one weekday for 85 stations at 46 control sites (06:00-22:00) and 39 peak sites (06:00-09:00, 11:00-13:00, 15:00-19:00). Counts were reported as average weekday volumes and data for peak period count stations were interpolated and extrapolated to match the patterns exhibited during the missing hours at nearby Control stations.

Transit Surveys of passing buses were conducted at 65 stations along 19 screenlines on the same day as the Classification and Occupancy counts. Buses were classified as 'TransLink' (which included standard and articulated buses, community shuttles and West Coast Express TrainBus) and 'Other' (which included TransLink's HandyDART service and all other buses including coach buses and school buses). Ridership data on SkyTrain was collected through a concurrent survey at all stations while SeaBus and West Coast Express data were provided by TransLink's subsidiaries.

Comparisons with previous surveys are provided for reference only, and exclude stations that were moved or had incomparable datasets, due to data collection changes.

Vehicle Volumes

A review of combined automatic vehicle count volumes reveals that since 2008, region-wide vehicle volumes have not changed significantly among comparable stations, though realignment of major screenlines may have masked change to some degree.



At screenlines closer to the central core of Metro Vancouver, 24-hour volumes have declined or remained stable since 2008. The most significant are along the Downtown Peninsula's Central Business District (CBD) Cordon (-9%) and the Main Street (-12%) screenline. Note that the Main Street screenline was moved from Main Street to Carrall Street and the differences are based on comparable count stations.

The largest increases in daily volumes were at border crossings with the U.S., with increases observed at Highway 11 (23%), Highway 13 (41%), Highway 15 and 99 (50%) and Point Roberts (69%). The Vancouver Airport screenline also experienced a large growth in vehicle volumes of 24% since 2008.

Screenlines characterised by inter-regional trips into and out of Metro Vancouver generally showed decreases in traffic volumes. These screenlines include Highway 99 – Squamish (-7%), Tsawwassen (-16%), Horseshoe Bay (-7%) and 284th Street (-9%).

Construction caused decreases in volume at some stations in the region. In particular at Highway 1 west of Boundary Road (-17,600) and Port Mann Bridge (-16,000).

On the other hand, stations affected by construction during the previous Screenline Survey have recovered. Cambie Street Bridge (increase of 21,500 vehicles) is a major instance of this change.

Other stations with significant changes in absolute volume since 2008 were:

- Highway 91 west of no. 8 Road (+8,000)
- Highway 99 east of Highway 91 (+7,500)
- Highway 1 east of Highway 11 (+7,000)
- Highway 99 west of 104th Street (+6,500)
- Alex Fraser Bridge (+5,500)
- King George Blvd. north of Colebrook Road (+5,500)
- Second Narrows Bridge (+3,900)
- Westminster Highway west of No 8 Rd. (-7500)
- The Burrard Street Bridge (-10,500)
- The Granville Street Bridge (-14,500)

The construction of the Golden Ears Bridge resulted in an increase of 7% (14,000 vehicles) to the traffic volume across the Main Arm of the Fraser River.

The regional screenlines with the highest total (both directions) daily traffic volumes were Boundary Road (472,000), North Arm Fraser (350,000), North Road (356,000) and Highway 15/Surrey ALR (308,000).

Peak Hour Volumes

Peak hour volumes – the highest four consecutive 15-minute periods within each peak period – exhibit a similar trend to the 24-hour volumes. Peak hour volumes have decreased at the CBD screenlines during the morning and afternoon.

The greatest percentage increase in peak hour volumes was seen at the South/Main arm of the Fraser River where the morning peak hour volume increased by 8% and afternoon peak hour volume increased by 6%. It is important to note, though, that most of the increase in traffic across the Fraser can be attributed to the construction of the Golden Ears Bridge which significantly increased the traffic across the river in the eastern part of Metro Vancouver.

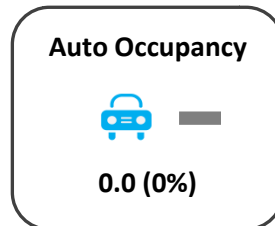
Peak Spreading

Increases in off-peak travel are indicative of changing departure times, in response to congestion, delays and overall travel time in order to arrive at a destination on time. Volumes across all comparable stations for the 2011 survey year depict similar travel patterns as were viewed in 2008. According to the two most recent screenline surveys, since 2004 there were only limited increases in peak volume as well as peak spreading.

Unlike most previous surveys (1992, 1994 and 2004), volume distribution changes between different periods of the day for the 2011 survey were negligible.

Auto Occupancy

Auto occupancy – the average number of occupants in a passenger vehicle, including the driver – in the region stayed stable since 2008 with 1.24 occupants per passenger vehicle. The highest occupancy occurred during the afternoon peak period (1.28), followed by the midday peak period (1.27), the morning peak period showed the lowest occupancy (1.17). Auto occupancy increased at 48



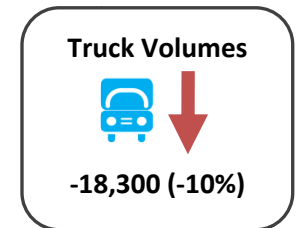
of the 84 stations compared to 2008, decreased at 23 stations and has not changed in 13 (change of less than 1%).

The screenlines with the highest average occupancies were Tsawwassen (1.48) and the U.S. border at Highway 15 (1.40), reflecting that inter-regional trips are more likely to have multiple persons travelling together.

The combined Central Business District Screenline had a slightly higher than average occupancy rate of 1.25, while the South/Main Arm Fraser Screenline had a somewhat lower than average rate of 1.22 occupants per passenger vehicle.

Truck Volumes

Trucks, for the purpose of the survey, are defined as vehicles with six or more wheels¹, excluding buses and emergency vehicles. Regional truck volumes decreased by 10% over the 16-hour Control period compared to 2008.



Overall, trucks represented about 6% of the vehicular traffic during the 16-hour Control period and the percentage was highest during the midday peak hour. Afternoon peak hour truck volumes are somewhat lower than that in the morning peak hour. This is consistent with previous studies and can be attributed to the requirement of many truck drivers to start deliveries early, as well as avoiding the afternoon peak period due to the difficulty of driving trucks in heavy traffic.

¹ This is consistent with previous screenline surveys which defined trucks by the number of axles; two axles for light trucks and three or more axles for heavy trucks.

The top stations for 16-hour truck volumes are either on highways, in particularly Highway 1, or stations located near port facilities on the Fraser River, for instance, Alex Fraser Bridge, Queensborough Bridge and Knight Street Bridge.

Stations on major trucking routes had the highest percentage of truck movement. These stations include Deltaport Way – South of 27B Avenue (59%), Highway 7 – West of Highway 1 (23%), River Road – West of Nordel (26%), Highway 1 – West of Hope (20%). These percentages are reflect the importance of these routes for regional and inter-regional goods movement.

Cyclist Volumes

Count stations with the highest 9-hour cyclist volumes are close to the Central Business District of Downtown Vancouver: Burrard Street Bridge, the Seawall east of Carrall Street, Dunsmuir east of Carrall Street and Cambie Street Bridge. This may be attributable to relatively high density in and around the Vancouver CBD, lack of parking availability and prevalence of nearby cycling routes. The count stations near the University of British Columbia have the second highest set of bike volumes.

Pedestrian Traffic

Similar to the 2008 survey, the highest pedestrian volumes were found along Main Street, False Creek and Highway 7 west of North Road. Higher levels of pedestrian traffic in these areas can be attributed to adjacent high-density residential areas, presence of high activity transit hubs, and density of retail shopping establishments. Main Street is the primary east-west screenline for pedestrians entering and exiting the CBD and also includes the Chinatown shopping area and the Downtown Eastside. The False Creek

Screenline captures north-south pedestrian travel to and from the CBD and has stations adjacent to major transit corridors such as Granville Street and Cambie Street. The high pedestrian volumes at Highway 7 west of North Road station are likely due to the proximity of the Lougheed SkyTrain station.

Summary

Overall traffic volumes throughout the region have not changed substantially since 2008 or even 2004. The construction of the Golden Ears Bridge contributed to an increased traffic volumes across the Fraser River; however, most other screenlines have not experienced significant increases in traffic. Peak hour volumes decreased at major screenlines within the central core of Metro Vancouver.

Auto occupancy rates remain stable and are relatively unchanged from 2008. Truck volumes have decreased while transit ridership has increased since 2008. Much of the increase in transit ridership can be attributed to the construction of the Canada Line which enhanced transit connections between the southern part of Metro Vancouver and its core. Cycling at the busiest stations increased significantly (over 30%) since 2008.

1. INTRODUCTION

1.1. BACKGROUND

For over twenty years, the region has monitored changes in travel patterns in the Lower Mainland on a regular basis. The 2011 Metro Vancouver Screenline Survey is the seventh of such similar surveys conducted since 1985 and covers the Lower Mainland commuter shed between Horseshoe Bay and Hope. TransLink's 2011 Regional Screenline Survey was conducted in the final quarter of the year, between mid-September and mid-December, and managed by the Strategic Planning & Policy Department of TransLink. A full list of screenlines and stations can be found in **Appendix A**. The objectives of the 2011 Regional Screenline Survey were to:

- Record vehicle and person volumes crossing major regional transportation boundaries;
- Quantify changes in travel behaviour throughout the region;
- Identify trends in transit ridership, pedestrian and cyclist volumes, mode share, ride sharing and vehicle composition along key corridors throughout the region;
- Provide a basis for comparative assessment of the potential effect of alternative infrastructure investments or land use changes; and
- Provide information to calibrate and validate TransLink's regional transportation model to reflect current travel conditions and infrastructure.

Screenline surveys are normally conducted in the fall, when commuter demand is typically at its peak and most predictable. Prior to the 2011 survey, the most recent Regional Screenline Survey

occurred in the fall of 2008 and before then in 2004. There have been a number of land use and transportation network changes in Metro Vancouver since 2008 that may have affected travel behaviour, including:

- Major transit initiatives addressing regional needs such as increased service capacity along certain routes/corridors, transit priority measures, expansion of bus and community shuttle fleets, additional SkyTrain cars and capacity affecting the modal choice of travel;
- Demographic and economic shifts;
- Land use changes such as population and employment growth;
- Increased transit pass usage (U-Pass, Employer Pass Program, Transit Pass Tax Credit);
- Increasing fuel prices;
- Changes in parking availability and costs;
- Expansion of bicycle lanes, routes, services and facilities;
- New subscribers to alternative modes that reduce single occupancy vehicles and resulting traffic congestion, such as carpooling, preferred parking, ride-matching, shuttles, car-sharing programmes, public bike programmes and reward programmes;
- Increased public awareness regarding the environment and sustainability along with increased community densities that encourages walking to services, shops and work without a vehicle; and
- The construction of regionally significant infrastructure including the Canada Line and the Golden Ears Bridge.

1.2. SURVEY COMPONENTS

A screenline is a conceptual line or boundary representing major transportation thresholds, including municipal boundaries, waterways, and entry/exit points to the region. Screenlines are located such that the surveyed traffic is typically considered 'regional' or 'inter-municipal' in nature, in contrast to 'local' or 'intra-municipal'.

For example, there are a number of 'natural' screenlines in Metro Vancouver such as Burrard Inlet, False Creek and the various arms of the Fraser River. In 2011, a total of 32 regional screenlines were surveyed at 123 individual stations. Two composite screenlines, the Central Business District (CBD) and South/Main Arm Fraser (SMF), were used to provide more detail on regional trip characteristics.

Surveys used a variety of different data collection methods including automatic vehicle detectors, manual data collection for vehicle classifications and occupancies, and manual collection of transit vehicle loads.

The overall survey programme consisted of three main components:

1. Automatic Vehicle Counts – to determine the total daily number of vehicles crossing each roadside station.
2. Classification and Occupancy Surveys – to determine the classifications for all vehicles, cyclists and pedestrians, and to collect occupancies for passenger vehicles and transit vehicles.
3. Transit Surveys – to determine passenger ridership on-board transit and non-transit buses, and bike rack usage on transit buses. In addition, manual counts SkyTrain ridership was recorded as part of a concurrent survey and SeaBus and West

Coast Express passengers volumes were provided by TransLink's subsidiaries.

Key steps in the process were:

- Consultation with stakeholders prior to survey design
- Survey design and scheduling
- Data collection
- Database development
- Cleaning and validation of data
- Writing of report

Table 1 gives a listing of 'Quick Facts' for the screenline survey. Detailed information for each survey location is presented in **Appendix A** and detailed maps of the different screenlines are presented in **Appendix B**.

Table 1 – 2011 Screenline Survey Quick Facts and Definitions

Quick Facts:

- 32 Regional Screenlines
- 123 Screenline Stations
- 109 Stations with automatic counts
- 85 Stations with classification and occupancy surveys
 - 39 Peak manual survey stations
 - 46 Control manual survey stations
- 65 Stations with transit surveys
- 12 Stations with transit-only surveys
- 38 New or changed station locations since 2008

Definitions:

Control Station Survey Hours: 06:00 – 22:00

Peak Station Survey Hours: 06:00 – 09:00, 11:00 – 13:00, 15:00 – 19:00

Peak Period: One of three periods as defined by Peak Station Survey Hours, representing hours of high traffic volume.

Morning: 06:00 – 09:00

Midday: 11:00 – 13:00

Afternoon: 15:00 – 19:00

Peak Hour: The four consecutive 15-minute intervals having the highest volumes within each Peak Period.

Transit-Only Surveys: Surveys of SkyTrain, Canada Line, West Coast Express/Commuter Rail, and SeaBus

1.3. REGIONAL SCREENLINES

Figure 1 shows the locations for the 32 regional screenlines along with individual count stations and **Table 2** identifies the screenlines by name. Additional screenline and count station details are provided for Downtown Vancouver, Fraser Valley and Sea Island.

Figure 2 shows the locations of the Central Business District (CBD) and South/Main Arm Fraser (SMF) composite screenlines. The CBD is composed of all of the stations on the Main Street and False Creek Screenlines, and the individual Lions Gate Bridge and SeaBus stations. The SMF is composed of the South and Main Arm Fraser River Screenlines.

Table 2 – 2011 Screenline Survey Quick Facts and Definitions

| Screenline | Description |
|------------|--|
| 1 | Taylor Way Screenline |
| 2 | Burrard Inlet Screenline |
| 3 | False Creek Screenline |
| 4 | Main Street Screenline |
| 5 | Boundary Road Screenline |
| 6 | North Arm Fraser River Screenline |
| 7 | Middle Arm Fraser River Screenline |
| 8 | East Richmond Screenline |
| 9 | South Arm Fraser River Screenline |
| 10 | Main Arm Fraser River Screenline |
| 11 | North Road Screenline |
| 12 | Pitt River Screenline |
| 13 | North Delta Screenline |
| 15 | Semiahmoo Screenline |
| 16 | Highway 15 / Surrey ALR Screenline |
| 17 | 264th Street Screenline |
| 18 | 284th Street Screenline |
| 19 | Albion / Highway 11 Screenline |
| 20 | Highway 9 - Agassiz Screenline |
| 21 | Highway 1 & 7 - Hope Screenline |
| 22 | Highway 11 - U.S. Border Screenline |
| 23 | Highway 13 - U.S. Border Screenline |
| 24 | Highway 15 & 99 - U.S. Border Screenline |
| 25 | Point Roberts - U.S. Border Screenline |
| 26 | Tsawwassen Screenline |
| 27 | Vancouver International Airport Screenline |
| 28 | Horeshoe Bay Ferry Terminal Screenline |
| 29 | Highway 99 - Squamish Screenline |
| 30 | Highway 11 - Abbotsford Screenline |
| 31 | Abbotsford's East City Screenline |
| 32 | Highway 9 - Chilliwack Screenline |
| 116 | University of British Columbia |

1.4. REPORT ORGANIZATION

This report presents statistical data on 2011 traffic volumes and occupancies in the Lower Mainland commuter shed at 123 stations along 32 major screenlines. This report is organized into the following sections:

SECTION 1 – Introduction to the survey and its components.

SECTION 2 – Outline of the main survey components, data collection methodology, validation and reporting by mode.

SECTION 3 – Summary of 2011 traffic volumes, traffic composition and modes.

SECTION 4 – Overall and detailed review of trends of vehicle volumes, occupancy and truck volumes by comparing 2011 data to previous surveys.

Figure 1 – Map of Locations for Regional Screenlines

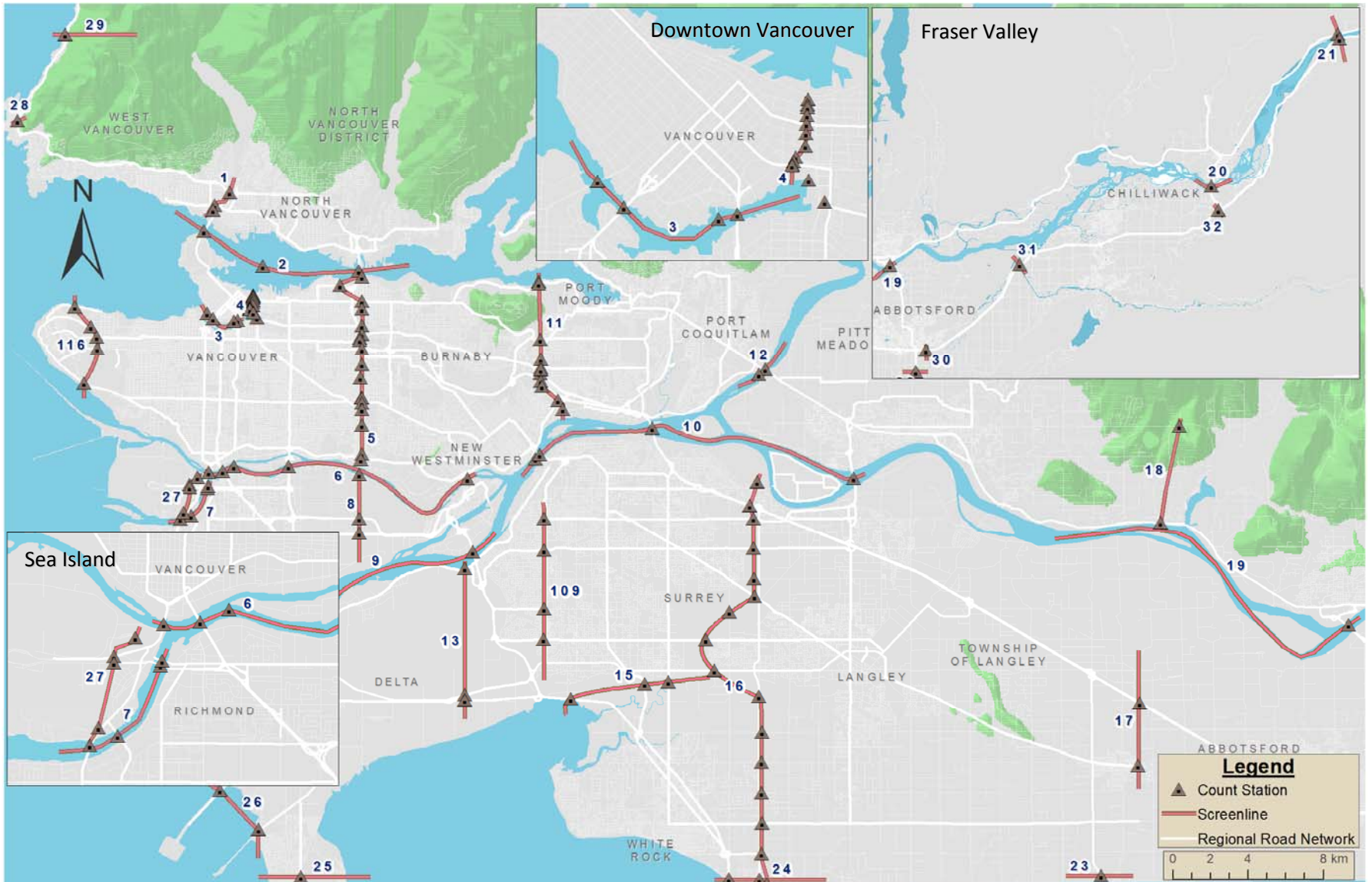
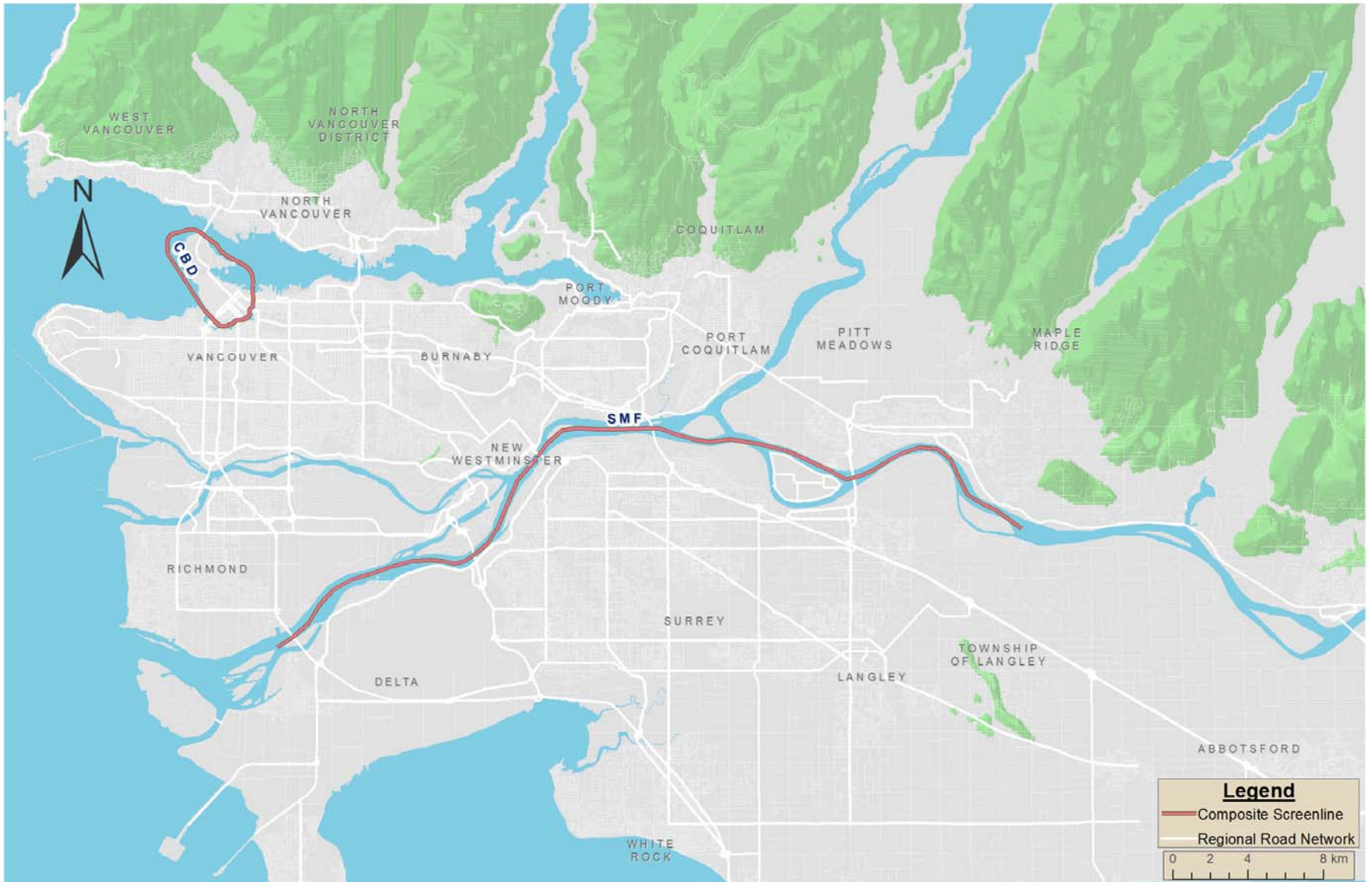


Figure 2 – Map of Locations for Composite Screenlines



2. SURVEY METHODOLOGY

2.1. SURVEY ORGANIZATION

Automatic, classification, occupancy and transit data for the 2011 Metro Vancouver Regional Screenline Survey were mostly collected and validated by TransTech Data Services. Other datasets were provided by operating partners and subsidiaries of TransLink and other organizations including:

- Coast Mountain Bus Company: SeaBus passenger volumes;
- West Coast Express: WCE passenger volumes;
- BC Ministry of Transportation and Infrastructure: permanent count station volumes;
- City of Vancouver: permanent count station volumes;
- City of Richmond: traffic signal count volumes; and
- City of Surrey: permanent count station volumes.

2.2. AUTOMATIC VEHICLE COUNTS

2.2.1. Data Collection Methodology

Automatic vehicle count data was collected between mid-September and mid-December, 2011. To avoid unusual traffic volumes due to holidays, count days did not include Thanksgiving (October 10-11) and Remembrance Day (November 10-11). In some instances, following data validation, counts were repeated. In those instances, portions of the count data may be outside the data collection window indicated above.

Automatic vehicle count data was collected in 15-minute intervals over 24-hours along 32 screenlines divided into 109 stations. Data was collected for a period of at least 14 calendar days and included a minimum of two of each weekday. Whenever feasible, automatic counts were scheduled in tandem with Classification/Occupancy and Transit counts, so that screenline data could be harmonised.

Three data collection technologies were used dependent upon availability, site characteristics and anticipated traffic volumes at each location. These included: Inductive Loops, Pneumatic Hoses, and Remote Traffic Microwave Sensors.

Inductive loops are permanent traffic count sites created by embedding loops of wire into individual lanes in the pavement that are then connected to electronic traffic count equipment. The count equipment works on the principle that the passage of a vehicle causes a disturbance in the electrical field created by the loop and is measured as a change in inductance by the counter, which will record the passage of a vehicle. Some traffic signal controllers are also count capable and operate on the same principle. Inductive loops are typically considered the most accurate of detection, particularly in areas with heavy trucks, multiple lanes, slow moving traffic or high speeds.

Figure 3 – Inductive Loops



Pneumatic hose counts are conducted by temporarily placing rubber hoses across the roadway, perpendicular to the movement of traffic. As each vehicle axle passes over the hoses, it creates a pulse of air which is detected by the traffic counter's air switch. The majority of stations for the Regional Screenline Survey were counted using pneumatic hoses.

Figure 4 – Pneumatic Hoses



Remote Traffic Microwave Sensors (RTMS) is a non-intrusive, radar-based count technology and was deployed in locations where inductive loops were not available and traffic conditions were such that the accuracy or practicality of pneumatic hoses was a concern. This included stations with high speeds, high volumes or congested, multi-lane traffic.

Figure 5 – RTMS Vehicle Detector



2.2.2. Data Validation

TransTech Data Services’ data validation included comparing daily and hourly volumes between the 10 weekdays, 2 Saturdays and 2 Sundays of the two-week count period. This comparison helped identify irregular volumes resulting from traffic disruptions or equipment malfunctions. In most cases, if these were observed, the count was repeated until data for two of each calendar day was obtained. At a few locations, where at least 7 days of highly consistent data was available, counts were not redeployed.

Data collected was also validated against historical data. Validation included:

- Volume balancing to validate counts by matching inbound and outbound volumes by station;
- 2011 24-hour directional traffic volumes were compared to historical volumes - between 2011 and 2008 volumes;
- Comparing hourly and 15-minute automatic count data to manual classification and occupancy surveys. At most count stations, manual surveys were conducted on a weekday during the two week automatic count period. This facilitated a comparison of the volumes obtained from the two data collection methods;
- Comparing hourly volumes between the 10 weekdays at each location. If the volumes at one hour or more were well outside of the normal for the time at the location (2.24 standard deviations over or under the average volume for Tuesday to Thursday hours and 2.43 standard deviations for Mondays and Fridays) these hours were removed from the dataset.

2.2.3. Data Reporting

Once validated, data from the 10 weekdays in the 14-day collection period was averaged to produce typical fall weekday traffic volumes for reporting. Where the 14 days of data were not continuous (due to recounts), the average was based on data from 2 Mondays, 2 Tuesdays, 2 Wednesdays, 2 Thursdays and 2 Fridays.

Although all data was collected in 15-minute intervals, it is presented hourly for conciseness in reporting. Fifteen-minute volume data has been used in determining peak hour volumes and periods shown in the report. Data in 15-minute intervals was provided to TransLink in electronic format.

Automatic traffic count data is also rounded. The rounding signalizes the possible inaccuracies in data collection as well as the day-to-day variance in the data. Generally, as depicted in **Table 3**, the amount of rounding applied to the data is a function of the traffic volume.

Table 3 – Rounding Values for Automatic Traffic Count Data

| From Value | To Value | Round to Nearest |
|------------|------------|------------------|
| 0 | 25 | 5 |
| 25 | 250 | 10 |
| 250 | 1,000 | 25 |
| 1,000 | 2,500 | 50 |
| 2,500 | 5,000 | 100 |
| 5,000 | 25,000 | 500 |
| 25,000 | 100,000 | 1,000 |
| 100,000 | 10,000,000 | 1,000 |

2.3. CLASSIFICATION AND OCCUPANCY COUNTS

2.3.1. Data Collection Methodology

Roadside observers at 85 stations along 24 screenlines manually collected classification and occupancy data. Each location was surveyed on a single weekday between Mid-September and mid-December, 2011. Stations were divided into 46 Control and 38 Peak stations. Control stations were counted continuously for 16 hours (06:00 – 22:00) on the designated survey day, while Peak stations were surveyed for a total of 9 hours during 3 peak periods over the day (06:00 – 09:00, 11:00 – 13:00 and 15:00 – 19:00). All data was collected in 15-minute intervals and summarised in hourly intervals for reporting purposes.

To avoid irregular volumes due to holidays, count days did not include Thanksgiving (October 10-11) and Remembrance Day (November 10-11). In some instances, following data validation, counts were repeated, and portions of the count data were outside the preferred data collection window. Whenever feasible, Classification and Occupancy counts were scheduled to coincide with Automatic and Transit counts, so that screenline data could be harmonised. While automatic vehicle detection is capable of collecting vehicle volumes, it is not capable of collecting the data required by this portion of the survey, such as differentiating vehicle type and occupancy.

Data were typically collected by lane and summarised by direction, except for High Occupancy Vehicle (HOV) lanes which were reported separately. Cyclists and pedestrians were surveyed bi-directionally, including one-way stations. Collected data includes:

- Passenger vehicles with single occupancy, dual occupancy, high occupancy (3 or more occupants), and unknown occupancy
- Light trucks (2 axles with dual wheel sets on the rear axle)
- Heavy trucks (3 or more axles)

- Motorcycles
- Taxis, limousines
- Transit Buses
- Other Buses
- Pedestrians
- Cyclists
- Other Vehicles (Emergency vehicles, tow trucks, heavy equipment, cranes, etc.)

2.3.2. Data Validation

In order to minimise any effects from human error or omission, data validation of the classification and occupancy surveys included:

- TransTech's in-house validation routine included checks for data omissions, making sure data are within expected boundaries, and checks to ensure consistency across data categories;
- Where Automatic count data was available for the same day as the Classification and Occupancy count, hourly directional volumes were compared between the two survey types;
- Discrepancies of 10% or more were flagged for further review. Often, the discrepancy was a result of a slight travel time difference if the automatic and manual counts were not at the same exact location and the discrepancy was compensated for in the following interval. Where discrepancies were greater than expected and could not be resolved, a recount was conducted;
- Where transit surveys were conducted at the same location, the common classification categories of transit and other buses were also used as validation. Any significant discrepancies were reviewed as above; and

- Average auto occupancies and truck percentages were also reviewed for consistency and unreasonable fluctuations.

2.3.3. Data Reporting

Manual count data are presented in the report as they were recorded - no factoring to average weekday volumes from automatic data was done. However, data for Peak sites that were surveyed for only nine hours, were interpolated and extrapolated to provide estimations of the other seven hours that are included in a full survey day at Control sites.

Data Factoring to Average Weekday Volumes

Daily variations due to weather, local events, day-of-week, traffic incidents and construction interruptions can have an effect on manual count data collected on a single day. Unlike the previous time, in 2008, when the last survey was conducted, data from the manual traffic counts **were not** factored to the weekday average of the automatic count data, rather they are presented as recorded. Users of this report should be aware of this when comparing results from the 2011 survey with the 2008 Screenline survey.

Data Interpolation and Extrapolation

To infill time periods that were not surveyed at Peak stations but which were surveyed at Control sites, data from Peak stations were interpolated and extrapolated based on Control sites.

Transit bus, other bus, cyclists and pedestrians were not treated in the same manner.

The methodology for factoring the manual data involved determining the incremental percentage change of each classification and applying those incremental changes to the automatic count volume.

Data interpolation and extrapolation was determined by first calculating the 15-minute, two-way sum of each mode for the most appropriate Control station (closest in performance and geography to the Peak station of interest). This Control station data was then used to calculate the percentage of incremental change for each mode, for the non-survey hours at Peak count stations. These bi-directional incremental Control station changes were then applied to each Peak station to determine the off-peak mode percentages. The resulting percentages were then multiplied by the average automatic count volume to determine the volume for each mode and then rounded to the nearest positive, whole number for readability.

Data Comparisons to 2008

Note that 2008 classification and occupancy comparisons are not available for all screenlines and stations. At some screenlines, one or more site locations have been added or relocated. At others, classification and occupancy data was surveyed at different sites. Comparisons of screenline totals between years, therefore, could be misleading. Comparisons can be conducted on a station by station basis at locations along the screenline that were not revised from 2008. This information is provided in the report tables.

2.4. TRANSIT SURVEYS

2.4.1. Data Collection Methodology

Transit data was collected at 65 stations with station data collected on one weekday between mid-September and mid-December, 2011. The primary purpose of manual observations was to determine passenger loads on-board passing 'TransLink' vehicles; data on 'Other' buses was also collected. The 'TransLink' category included standard and articulated transit buses, SkyTrain, West Coast Express trains, SeaBus vessels, West Coast Express TrainBus and Community Shuttles. All buses that did not fall into the TransLink category were considered 'Other' buses. While HandyDART vehicles are a part of the TransLink fleet, for the purpose of this Screenline Survey, they were captured in the 'Other' category.

To avoid atypical volume data due to holidays, count days did not include Thanksgiving (October 10-11) and Remembrance Day (November 10-11). In some instances, following data validation, segments of counts may have been repeated if the dataset had been affected by unexpected traffic events or invalid data.

As with classification and occupancy surveys, the collection of transit data was scheduled, whenever feasible, for one of the weekdays of the automatic count along the same screenline. Generally, Transit counts were also scheduled to coincide with Classification and Occupancy counts at the same station, so that a comparison of surveyed volumes could be used for validation.

Transit count stations were either Control or Peak sites. Control sites were surveyed continuously for 16 hours from 06:00 to 22:00 on the designated survey day. Peak sites were surveyed for a total of 9 hours

during three peak periods in a single day (06:00 – 09:00, 11:00 – 13:00 and 15:00 – 19:00). All data was summarised by hourly intervals for reporting purposes.

Data was collected by direction of travel and included:

- Vehicle ID Number and Block Route Number
- Route Number and Route Name
- Time that vehicle passed observation point
- Estimated number of passengers on-board each passing transit vehicle
- Number of bicycles on passing bicycle rack-equipped buses
- Bus Types: TransLink (Standard, Articulated, Community Shuttle, West Coast Express TrainBus) or Other (private coaches, school buses and HandyDART)

TransLink Transit Vehicle Category

Transit vehicle loads were typically recorded at the screenline. This meant that passenger counting was difficult, at some locations, because buses were speeding by the counters.

Whenever possible, an exact count of the passenger load was attempted. If the speed or frequency of buses was too high to permit an exact count, then bus occupancies were estimated by recording the apparent percentage of space, in quarter increments, occupied by passengers within the bus. Based on seated and standing passenger capacities, TransLink provided load estimates for standard and articulated buses and trolley buses, community shuttles, West Coast Express TrainBus and Highway Coach capacities. Bus load estimates for the TransLink fleet do not include the bus driver and are presented in **Table 4**.

Table 4 – Transit Bus Capacities and Load Estimates

| Observed Bus Passenger Load | Bus Capacities and Estimated Loads | | | | | |
|--|------------------------------------|-------------------|--------------|---------------------|------------------|-----------------------------|
| | Articulated Bus | Community Shuttle | Standard Bus | Trolley Articulated | Trolley Standard | WCE TrainBus/ Highway Coach |
| Seated and Standing at Capacity | 110 | 28 | 80 | 110 | 77 | 60 |
| Seated at Capacity + 75% Standing | 96 | 27 | 69 | 94 | 66 | 57 |
| Seated at Capacity + 50% Standing | 82 | 26 | 58 | 79 | 54 | 54 |
| Seated at Capacity + 25% Standing | 67 | 25 | 47 | 63 | 43 | 51 |
| Seated at Capacity | 53 | 24 | 36 | 47 | 31 | 47 |
| 75% Seated | 40 | 18 | 27 | 35 | 23 | 35 |
| 50% Seated | 27 | 12 | 18 | 24 | 16 | 24 |
| 25% Seated | 13 | 6 | 9 | 12 | 8 | 12 |

Other Bus Vehicle Category

Non-TransLink buses such as coach or school buses, or buses that did not follow a scheduled route or timetable, were classified as ‘Other’. The procedures for recording the number of passengers followed the same procedure as that for recording the number of passengers of ‘TransLink’ buses.

This category includes:

- HandyDART
- School buses
- Shuttles: parking, airport, valet, hotel, employee, casino
- Tour Buses: local/interprovincial/cross-border tours
- Coach Services: Lower Mainland to Whistler and Vancouver Island; Pacific Coach Lines, Greyhound, SkyLynx, etc.
- Private coaches

Data Collected by Others

TransTech was only responsible for the collection of transit data for buses. Information on vehicles and passenger volumes for SkyTrain and the Canada Line were collected through a parallel study, while

SeaBus and West Coast Express passenger counts were provided by Coast Mountain Bus Company Ltd. (CMBC), and West Coast Express Ltd., respectively. This data was provided for each train and vessel.

- SkyTrain and Canada Line data were collected by TransTech and Malatest, respectively, as part of a platform counts survey at all the stations in the system. The data from the stations that correspond to screenlines were then used for screenline reporting.
- SeaBus passenger load data was recorded by CMBC as passengers boarded each vessel and covered all survey hours.
- West Coast Express passenger volumes were estimated based on ticket sales at departing stations for all survey hours. Counts at Waterfront Station were also conducted during the AM peak period for validation and factoring purposes.

2.4.2. Data Validation

In order to minimise any effects from human error or omission, data validation of the data records from the transit surveys was undertaken including:

- TransTech’s in-house validation routine included checks for data omissions, making sure data are within expected boundaries, and checks to ensure consistency across data categories;
- TransLink transit schedules and outputs from the TMAC system were used to validate vehicle frequencies by station, arrival times, bus route names and numbers as well as route confirmation, particularly those with routings that change during the course of a service day; and
- Missing ridership volumes were imputed, whenever possible, using APC counts.

2.4.3. Data Reporting

Vehicles for which it was not possible to determine an accurate count or a reasonable estimate of the load were assigned an “Unknown” designation. When determining average passenger loads for buses of each type, these unknown records were excluded. When calculating the total passenger load at a station, buses with unknown loads were assumed to have average loads, as determined by the buses for which a load could be estimated.

Data Factoring

Similar to the treatment of the manual classification and occupancy data in the report, manual transit passenger load data at Peak count stations were not factored to account for daily variations. In addition, transit passenger loads were not interpolated during off-peak periods. This is because of the significant variation in transit load patterns at

different stations and resulting lack of reliable 'Control' data to use as the basis of interpolation and extrapolation.

Data Rounding

Similar to the automatic traffic counts, transit data was also rounded. The rounding of the transit ridership data signalize the possible discrepancies between the actual number of passengers on a bus compared to the number of passengers recorded by a person who is counting them as the bus drives by. Rounding values are summarized in **Table 5** below.

Table 5 – Rounding Values for Transit Data

| From Value | To Value | Round to Nearest |
|------------|------------|------------------|
| 0 | 25 | 5 |
| 25 | 250 | 10 |
| 250 | 1,000 | 25 |
| 1,000 | 2,500 | 50 |
| 2,500 | 5,000 | 100 |
| 5,000 | 25,000 | 500 |
| 25,000 | 100,000 | 1,000 |
| 100,000 | 10,000,000 | 1,000 |

Unlike the traffic automatic counts and the transit counts, no rounding was applied to the classification and occupancy dataset. Classification and occupancy counts were conducted over only one day of data and their counts margins of error are fairly small. Therefore, it was decided that the classification and occupancy dataset will include the exact number of people or vehicles recorded.

3. SCREENLINE SURVEY RESULTS

3.1. AUTOMATIC VEHICLE COUNTS

A summary of the combined automatic traffic volume data for each of the 32 screenlines and their 124 stations is presented in **Table 6** (following page), which includes:

- **Peak Hour Volumes:** Combined two-way volumes for the morning, midday and afternoon peak hours for each count location along a screenline. Peak Hour volumes (the running peak hour) represent the two-way total for the highest four consecutive 15-minute intervals during each of the Peak Periods: morning (06:00 – 09:00), midday (11:00 – 13:00) and afternoon (15:00 – 19:00) count periods.
- **Total 24-hour Volumes:** Combined 24-hour daily traffic volume for each screenline and station. This volume is a weekday average of the daily traffic volumes observed during the two week (10 weekdays) survey period. Including:
 - 2011 daily volume.
 - Ranking of each count location based on total daily bi-directional volume. The location with the highest daily volume is ranked as number one for this purpose. There are separate rankings for screenlines and stations.
 - 2008 volume, for comparison purposes, along with the percentage change and absolute change in volume from 2008 to 2011.

The volume data indicate that:

- While there are noticeable fluctuations in traffic volumes at individual stations and screenlines, the overall 24 hour volumes across all screenlines in the region increased only by 0.5% since 2008;
- The three screenlines with the highest bi-directional traffic volumes are Boundary Road (472,000), North Road (356,000) and North Arm Fraser (350,000). The new screenline at Highway 15/Surrey ALR also has high volume of traffic (308,000);
- The Boundary Road Screenline also has the highest peak hour traffic volume for each peak period. The highest was the afternoon peak hour at 37,000 vehicles;
- The station with the largest absolute volume increase compared to 2008, is Cambie Bridge. The traffic volume at this station went up from 31,000 in 2008 to 52,000 in 2011, likely because of the completion of work on the Canada Line. The two stations with the largest absolute volume decreases are Highway 1 west of Boundary road and the Port Mann Bridge, at 17,500 and 16,000 vehicles less than 2008, respectively. The large changes at these stations are also likely to be a result of major construction projects in their respective areas; and
- The highest demand on the entire system is during the afternoon peak hour. The total volume from all screenlines is 12% higher in the afternoon peak hour than in the morning peak hour and it is 41% higher than the midday peak volume.

Table 6 – Summary of 2-Way Traffic Volumes by Screenline and Station

| Screenline | Station | Description | Peak Hour Volume | | | 24 Hour Volumes | | | | |
|------------|---------|--|------------------|--------|-----------|---------------------------|----------------|---------------------|--------------------|-----------------------|
| | | | Morning | Midday | Afternoon | 2011 Daily Average Volume | 2011 Vol. Rank | 2008 Average Volume | % Growth from 2008 | Abs. Growth from 2008 |
| 1 | All | Taylor Way Screenline | 9,000 | 8,000 | 10,000 | 117,000 | 10 | 119,000 | -2% | -2,150 |
| 1 | 1 | Highway 1 - East of Taylor Way | 5,500 | 4,300 | 6,000 | 65,000 | 17 | 62,000 | 6% | 3,400 |
| 1 | 2 | Marine Drive - East of Taylor Way | 3,400 | 3,300 | 3,500 | 47,000 | 27 | 48,000 | -2% | -950 |
| 1 | 3 | Bridge Road - East of Taylor Way | 140 | 325 | 775 | 4,900 | 98 | 9,500 | -48% | -4,600 |
| 2 | All | Burrard Inlet Screenline | 15,000 | 10,500 | 14,500 | 190,000 | 7 | 186,000 | 2% | 3,900 |
| 2 | 1 | Lions Gate Bridge | 5,000 | 3,700 | 4,400 | 63,000 | 20 | 63,000 | 0% | -30 |
| 2 | 3 | Second Narrows Bridge | 10,000 | 7,000 | 10,500 | 127,000 | 1 | 123,000 | 3% | 3,900 |
| 3 | All | False Creek Screenline | 12,500 | 9,500 | 13,500 | 166,000 | 8 | 170,000 | -2% | -3,900 |
| 3 | 1 | Burrard Bridge | 4,300 | 3,400 | 4,500 | 57,000 | 22 | 68,000 | -16% | -10,500 |
| 3 | 2 | Granville Bridge | 4,400 | 3,100 | 4,700 | 57,000 | 21 | 72,000 | -20% | -14,500 |
| 3 | 3 | Cambie Bridge | 3,800 | 2,900 | 4,100 | 52,000 | 23 | 31,000 | 70% | 21,500 |
| 4 | All | Main Street Screenline | 9,000 | 7,500 | 10,000 | 129,000 | 9 | 159,000 | -19% | -30,000 |
| 4 | All-C | Comparable Main Street Screenline ² | - | - | - | 103,000 | - | 117,000 | -12% | -13,500 |
| 4 | 1 | Alexander Street - East of Carrall Street | 40 | 80 | 110 | 1,100 | 109 | 1,900 | -42% | -800 |
| 4 | 2 | Powell Street - East of Carrall Street | 1,350 | 800 | 825 | 14,000 | 70 | 12,000 | 16% | 1,900 |
| 4 | 3 | Cordova Street - East of Carrall Street | 700 | 725 | 1,250 | 12,500 | 75 | 13,500 | -4% | -575 |
| 4 | 4 | Hastings Street - East of Carrall Street | 1,200 | 1,150 | 1,400 | 19,500 | 60 | 23,500 | -18% | -4,100 |
| 4 | 5 | Pender Street - East of Carrall Street | 650 | 575 | 775 | 9,500 | 88 | 9,000 | 3% | 275 |
| 4 | 6 | Keefer Street - East of Carrall Street | 300 | 325 | 425 | 4,900 | 99 | 5,500 | -14% | -800 |
| 4 | 7 | Expo Boulevard - East of Carrall Street | 825 | 725 | 950 | 12,500 | 77 | - | - | - |
| 4 | 8 | Dunsmuir Street - East of Carrall Street | 1,550 | 1,050 | 1,150 | 18,500 | 61 | 24,000 | -23% | -5,500 |

² Much of the decrease in traffic across the Main Street screenline can be attributed to the relocation of the screenline from Main Street to Carrall Street.

| Screenline | Station | Description | Peak Hour Volume | | | 24 Hour Volumes | | | | |
|------------|---------|---|------------------|--------|-----------|---------------------------|----------------|---------------------|--------------------|-----------------------|
| | | | Morning | Midday | Afternoon | 2011 Daily Average Volume | 2011 Vol. Rank | 2008 Average Volume | % Growth from 2008 | Abs. Growth from 2008 |
| 4 | 9 | Georgia Street - East of Carrall Street | 1,350 | 1,250 | 2,050 | 23,500 | 50 | 27,000 | -14% | -4,000 |
| 4 | 11 | Pacific Boulevard - East of Carrall Street | 825 | 750 | 975 | 13,000 | 73 | - | - | - |
| 5 | All | Boundary Road Screenline | 34,000 | 26,000 | 37,000 | 472,000 | 1 | 480,000 | -2% | -8,000 |
| 5 | All-C | Comparable Boundary Road Screenline | | | | 470,000 | - | 480,000 | -2% | -10,500 |
| 5 | 1 | McGill Street - East of Commissioner Street | 3,700 | 2,300 | 3,700 | 43,000 | 31 | 42,000 | 3% | 1,450 |
| 5 | 2 | Hastings Street - West of Boundary Road, East of Kootenay | 2,800 | 2,000 | 2,800 | 37,000 | 35 | 39,000 | -6% | -2,300 |
| 5 | 3 | Adanac Street - West of Boundary Road | 400 | 170 | 500 | 4,000 | 101 | 4,000 | 1% | 40 |
| 5 | 5 | 1st Avenue - West of Boundary Road | 2,400 | 2,000 | 2,600 | 33,000 | 36 | 30,000 | 11% | 3,300 |
| 5 | 6 | Highway 7 - West of Boundary Road | 3,300 | 2,350 | 3,700 | 42,000 | 32 | 39,000 | 9% | 3,500 |
| 5 | 6.1 | Highway 1 - West of Boundary Road | 7,000 | 5,500 | 6,500 | 97,000 | 5 | 114,000 | -15% | -17,500 |
| 5 | 7 | Grandview Highway - West of Boundary Road | 3,200 | 2,900 | 3,300 | 49,000 | 26 | 48,000 | 2% | 1,150 |
| 5 | 8 | 22nd Avenue - West of Boundary Road | 1,000 | 650 | 1,200 | 12,500 | 76 | 12,000 | 6% | 725 |
| 5 | 9 | 29th Avenue / Joyce Street - West of Boundary Road | 1,300 | 850 | 1,300 | 17,000 | 62 | 19,500 | -12% | -2,400 |
| 5 | 10.1 | Vanness Avenue - West of Boundary Road | 800 | 500 | 950 | 10,500 | 84 | 9,500 | 8% | 750 |
| 5 | 11 | Kingsway - West of Boundary Road | 2,600 | 2,000 | 3,000 | 38,000 | 34 | 40,000 | -4% | -1,550 |
| 5 | 12 | 45th Avenue - West of Boundary Road | 160 | 110 | 250 | 2,250 | 105 | - | - | - |
| 5 | 13 | 49th Avenue - West of Boundary Road | 1,800 | 1,550 | 2,150 | 28,000 | 44 | 26,000 | 6% | 1,450 |
| 5 | 14 | SE Marine Drive - West of Boundary Road | 1,100 | 675 | 1,100 | 13,500 | 72 | 14,000 | -4% | -600 |
| 5 | 15 | Marine Way - West of Boundary Road | 3,200 | 2,450 | 3,800 | 45,000 | 29 | 44,000 | 4% | 1,800 |
| 6 | All | North Arm Fraser River Screenline | 24,000 | 19,000 | 27,000 | 350,000 | 3 | 355,000 | -1% | -4,700 |
| 6 | 1 | Arthur Laing Bridge | 5,500 | 4,300 | 6,500 | 79,000 | 12 | 83,000 | -5% | -4,100 |

| Screenline | Station | Description | Peak Hour Volume | | | 24 Hour Volumes | | | | |
|------------|---------|---|------------------|--------|-----------|---------------------------|----------------|---------------------|--------------------|-----------------------|
| | | | Morning | Midday | Afternoon | 2011 Daily Average Volume | 2011 Vol. Rank | 2008 Average Volume | % Growth from 2008 | Abs. Growth from 2008 |
| 6 | 2 | Oak Street Bridge | 6,000 | 4,800 | 7,000 | 88,000 | 10 | 89,000 | -1% | -1,150 |
| 6 | 3 | Knight Street Bridge | 6,500 | 5,500 | 7,000 | 96,000 | 6 | 96,000 | 1% | 550 |
| 6 | 4 | Queensborough Bridge | 6,000 | 4,600 | 6,500 | 88,000 | 9 | 88,000 | 0% | 80 |
| 7 | All | Middle Arm Fraser River Screenline | 6,500 | 6,000 | 7,500 | 96,000 | 14 | 95,000 | 1% | 1,250 |
| 7 | 1 | Dinsmore Bridge | 1,800 | 1,450 | 1,950 | 23,000 | 52 | 22,500 | 3% | 725 |
| 7 | 2 | Moray Bridge | 750 | 1,400 | 1,700 | 20,000 | 57 | 18,500 | 8% | 1,500 |
| 7 | 3 | No. 2 Road Bridge | 2,450 | 1,550 | 2,600 | 31,000 | 37 | 31,000 | -1% | -190 |
| 7 | 4 | Airport Connector Bridge | 1,350 | 1,400 | 1,400 | 22,000 | 54 | 22,500 | -4% | -800 |
| 8 | All | East Richmond Screenline | 8,000 | 5,500 | 8,500 | 109,000 | 12 | 108,000 | 1% | 825 |
| 8 | 1 | River Road - West of No. 8 Road | 275 | 140 | 400 | 3,400 | 102 | 2,900 | 15% | 425 |
| 8 | 2 | Highway 91 - West of No. 8 Road | 7,000 | 5,000 | 7,000 | 95,000 | 7 | 87,000 | 9% | 8,000 |
| 8 | 3 | Westminster Highway - West of No. 8 Road | 800 | 625 | 1,050 | 10,500 | 81 | 18,000 | -42% | -7,500 |
| 9 | All | South Arm Fraser River Screenline | 15,000 | 10,500 | 16,000 | 205,000 | 6 | 196,000 | 5% | 9,500 |
| 9 | 1 | Deas Tunnel | 7,000 | 5,000 | 7,000 | 89,000 | 8 | 85,000 | 5% | 4,300 |
| 9 | 2 | Alex Fraser Bridge | 8,500 | 5,500 | 9,500 | 117,000 | 3 | 111,000 | 5% | 5,500 |
| 10 | All | Main Arm Fraser River Screenline | 14,500 | 11,000 | 16,500 | 210,000 | 5 | 196,000 | 7% | 14,000 |
| 10 | All-C | Comparable Main Arm Fraser River Screenline | - | - | - | 180,000 | - | 196,000 | -8% | -16,000 |
| 10 | 2 | Pattullo Bridge | 4,900 | 3,400 | 5,500 | 68,000 | 16 | 68,000 | 0% | -100 |
| 10 | 3 | Port Mann Bridge | 7,000 | 6,000 | 8,000 | 112,000 | 4 | 128,000 | -12% | -16,000 |
| 10 | 4 | Golden Ears Bridge | 2,700 | 1,500 | 3,000 | 30,000 | 38 | - | - | - |
| 11 | All | North Road Screenline | 25,000 | 19,500 | 27,000 | 356,000 | 2 | 346,000 | 3% | 10,500 |
| 11 | All-C | Comparable North Road Screenline | - | - | - | 344,000 | - | 346,000 | 0% | -1,200 |
| 11 | 1 | Highway 7A - West of North Road | 2,800 | 1,050 | 2,800 | 29,000 | 42 | 28,000 | 2% | 575 |

| Screenline | Station | Description | Peak Hour Volume | | | 24 Hour Volumes | | | | |
|------------|---------|---|------------------|--------|-----------|---------------------------|----------------|---------------------|--------------------|-----------------------|
| | | | Morning | Midday | Afternoon | 2011 Daily Average Volume | 2011 Vol. Rank | 2008 Average Volume | % Growth from 2008 | Abs. Growth from 2008 |
| 11 | 2 | Broadway - West of North Road | 2,700 | 1,250 | 2,600 | 27,000 | 45 | 28,000 | 0% | -130 |
| 11 | 3 | Cameron Street - West of North Road | 825 | 950 | 1,400 | 14,500 | 67 | 14,000 | 5% | 650 |
| 11 | 4 | Highway 7 - West of North Road | 1,700 | 1,600 | 2,250 | 26,000 | 46 | 26,000 | 0% | -130 |
| 11 | 5 | Austin Road - West of North Road | 1,550 | 1,300 | 1,900 | 22,000 | 53 | 21,500 | 2% | 400 |
| 11 | 5.1 | Gatineau Place - West of North Road | 425 | 475 | 650 | 7,500 | 92 | 8,000 | -6% | -500 |
| 11 | 6 | Highway 1 - West of North Road | 8,000 | 6,500 | 8,000 | 120,000 | 2 | 126,000 | -5% | -6,500 |
| 11 | 7 | North Road - South of Highway 1 | 2,300 | 1,750 | 2,200 | 29,000 | 40 | 29,000 | 1% | 230 |
| 11 | 8 | Brunette Avenue - South of Highway 1 | 4,400 | 4,100 | 4,500 | 69,000 | 15 | 64,000 | 7% | 4,300 |
| 11 | 9 | Braid Street at Brunette River bridge | 675 | 700 | 800 | 11,500 | 79 | - | - | - |
| 12 | All | Pitt River Screenline | 5,500 | 4,000 | 6,500 | 79,000 | 16 | 76,000 | 3% | 2,600 |
| 12 | 1 | Pitt River Bridge | 5,500 | 4,000 | 6,500 | 79,000 | 13 | 76,000 | 3% | 2,600 |
| 13 | All | North Delta Screenline | 7,500 | 5,000 | 8,000 | 100,000 | 13 | 93,000 | 8% | 7,000 |
| 13 | 1 | River Road - West of Nordel Way | 2,050 | 1,700 | 2,150 | 29,000 | 41 | 29,000 | 1% | 180 |
| 13 | 2 | Highway 10 - West of 104th Street | 1,350 | 1,000 | 1,700 | 19,500 | 59 | 19,000 | 2% | 375 |
| 13 | 3 | Highway 99 - West of 104th Street | 4,400 | 2,500 | 4,300 | 51,000 | 24 | 45,000 | 14% | 6,500 |
| 15 | All | Semiahmoo Screenline | 8,500 | 6,000 | 9,500 | 114,000 | 11 | 103,000 | 11% | 11,000 |
| 15 | 1 | Highway 99 - East of Highway 91 | 4,700 | 3,100 | 5,500 | 63,000 | 19 | 55,000 | 14% | 7,500 |
| 15 | 2 | King George Blvd - North of Colebrook Road | 2,300 | 1,700 | 2,450 | 28,000 | 43 | 23,000 | 25% | 5,500 |
| 15 | 3 | 152nd Street - North of Colebrook Road | 1,550 | 1,400 | 1,800 | 23,000 | 51 | 25,000 | -8% | -2,050 |
| 16 | All | Highway 15 / Surrey ALR Screenline | 22,500 | 16,500 | 25,000 | 308,000 | 4 | 294,000 | 5% | 15,000 |
| 16 | All-C | Comparable Highway 15 / Surrey ALR Screenline | - | - | - | - | - | - | - | - |
| 16 | 2 | Highway 1 - West of 176th Street | 5,000 | 4,700 | 6,000 | 84,000 | 11 | - | - | - |
| 16 | 3 | 96th Avenue - West of 176th Street | 1,700 | 675 | 1,700 | 16,500 | 63 | - | - | - |

| Screenline | Station | Description | Peak Hour Volume | | | 24 Hour Volumes | | | | |
|------------|---------|--|------------------|--------|-----------|---------------------------|----------------|---------------------|--------------------|-----------------------|
| | | | Morning | Midday | Afternoon | 2011 Daily Average Volume | 2011 Vol. Rank | 2008 Average Volume | % Growth from 2008 | Abs. Growth from 2008 |
| 16 | 4 | 88th Avenue - West of 176th Street | 1,150 | 825 | 1,300 | 15,000 | 66 | - | - | - |
| 16 | 5 | 80th Avenue - West of 176th Street | 725 | 325 | 875 | 8,000 | 90 | - | - | - |
| 16 | 6 | Fraser Highway (Hwy 1A) - West of 176th Street | 1,800 | 1,600 | 1,650 | 25,000 | 47 | - | - | - |
| 16 | 7 | 168th Street - North of Northview Golf Club | 1,350 | 625 | 1,600 | 15,000 | 65 | - | - | - |
| 16 | 8 | 64th Avenue - West of 164th Street | 2,300 | 1,400 | 2,700 | 30,000 | 39 | - | - | - |
| 16 | 9 | Highway 10 - West of 164th Street | 3,300 | 2,350 | 3,500 | 43,000 | 30 | - | - | - |
| 16 | 10 | Highway 15 - North of 48th Avenue | 1,750 | 1,550 | 2,000 | 25,000 | 48 | - | - | - |
| 16 | 11 | 40th Avenue - E of Highway 15 | 120 | 60 | 180 | 1,400 | 107 | - | - | - |
| 16 | 12 | 32nd Avenue - E of Highway 15 | 1,150 | 825 | 1,300 | 15,000 | 64 | - | - | - |
| 16 | 13 | 24th Avenue - E of Highway 15 | 650 | 500 | 725 | 8,000 | 91 | - | - | - |
| 16 | 14 | 16th Avenue - E of Highway 15 | 1,100 | 900 | 1,200 | 14,500 | 69 | - | - | - |
| 16 | 15 | 8th Avenue - E of Highway 15 | 475 | 325 | 675 | 6,000 | 95 | - | - | - |
| 16 | 16 | 0 Avenue - W of 180th Street | 180 | 70 | 190 | 1,650 | 106 | - | - | - |
| 17 | All | 264th Street Screenline | 6,500 | 5,000 | 7,500 | 93,000 | 15 | 93,000 | 0% | -130 |
| 17 | 1 | Highway 1 - East of 264th Street | 5,000 | 3,800 | 6,000 | 72,000 | 14 | 72,000 | 0% | -100 |
| 17 | 2 | Fraser Hwy - East of 276th Street | 1,350 | 1,350 | 1,700 | 20,500 | 56 | 20,500 | 0% | -30 |
| 18 | All | 284th Street Screenline | 1,700 | 1,250 | 2,150 | 23,500 | 24 | 26,000 | -9% | -2,400 |
| 18 | 1 | Dewdney Truck Road - East of 284th Street | 190 | 150 | 250 | 2,800 | 103 | 2,900 | -4% | -110 |
| 18 | 2 | Lougheed Highway - East of 280th Street | 1,550 | 1,100 | 1,900 | 21,000 | 55 | 23,000 | -10% | -2,300 |
| 19 | All | Albion / Highway 11 Screenline | 3,100 | 2,250 | 3,900 | 42,000 | 21 | 44,000 | -5% | -2,100 |
| 19 | 2 | Highway 11 at Mission Bridge | 3,100 | 2,250 | 3,900 | 42,000 | 33 | 44,000 | -5% | -2,100 |
| 20 | All | Highway 9 - Agassiz Screenline | 700 | 600 | 925 | 10,000 | 28 | 10,000 | -1% | -130 |
| 20 | 1 | Highway 9 - North of Old Yale Road | 700 | 600 | 925 | 10,000 | 87 | 10,000 | -1% | -130 |

| Screenline | Station | Description | Peak Hour Volume | | | 24 Hour Volumes | | | | |
|------------|---------|--|------------------|--------|-----------|---------------------------|----------------|---------------------|--------------------|-----------------------|
| | | | Morning | Midday | Afternoon | 2011 Daily Average Volume | 2011 Vol. Rank | 2008 Average Volume | % Growth from 2008 | Abs. Growth from 2008 |
| 21 | All | Highway 1 & 7 - Hope Screenline | 600 | 950 | 1,000 | 13,000 | 26 | 14,000 | -7% | -975 |
| 21 | 1 | Highway 7 - West of Highway 1 | 130 | 160 | 220 | 2,450 | 104 | 2,200 | 12% | 275 |
| 21 | 2 | Highway 1 - West of Hope | 475 | 800 | 800 | 10,500 | 82 | 11,500 | -11% | -1,250 |
| 22 | All | Highway 11 - U.S. Border Screenline | 475 | 575 | 700 | 8,500 | 29 | 7,000 | 23% | 1,600 |
| 22 | 1 | Highway 11 - North U.S. Border | 475 | 575 | 700 | 8,500 | 89 | 7,000 | 23% | 1,600 |
| 23 | All | Highway 13 - U.S. Border Screenline | 250 | 325 | 375 | 4,400 | 32 | 3,100 | 41% | 1,250 |
| 23 | 1 | Highway 13 - North of U.S. Border | 250 | 325 | 375 | 4,400 | 100 | 3,100 | 41% | 1,250 |
| 24 | All | Highway 15 & 99 - U.S. Border Screenline | 1,350 | 1,550 | 2,000 | 26,000 | 22 | 17,000 | 50% | 8,500 |
| 24 | 1 | Highway 99 - North of U.S. Border | 525 | 725 | 825 | 11,500 | 80 | 6,000 | 83% | 5,000 |
| 24 | 2 | Highway 15 - North of U.S. Border | 825 | 825 | 1,150 | 14,500 | 68 | 11,000 | 31% | 3,400 |
| 25 | All | Point Roberts - U.S. Border Screenline | 250 | 500 | 450 | 5,500 | 31 | 3,100 | 69% | 2,150 |
| 25 | 1 | Point Roberts - North of U.S. Border | 250 | 500 | 450 | 5,500 | 97 | 3,100 | 69% | 2,150 |
| 26 | All | Tsawwassen Screenline | 1,050 | 1,200 | 1,400 | 16,000 | 25 | 19,000 | -16% | -3,100 |
| 26 | 1 | Highway 17 - North of Tsawwassen Ferry Terminal | 675 | 900 | 850 | 10,000 | 86 | 11,500 | -14% | -1,600 |
| 26 | 2 | Deltaport Way - South of 27B Avenue | 600 | 375 | 675 | 6,000 | 96 | 7,500 | -21% | -1,550 |
| 27 | All | Vancouver International Airport Screenline | 3,600 | 4,300 | 4,300 | 65,000 | 17 | 52,000 | 24% | 12,500 |
| 27 | 1 | Grant McConachie Way - East of Templeton Street | 2,400 | 2,900 | 2,800 | 46,000 | 28 | 39,000 | 18% | 7,000 |
| 27 | 2 | Miller Road - East of Templeton Street | 750 | 825 | 950 | 12,000 | 78 | 5,500 | 119% | 6,500 |
| 27 | 3 | Inglis Drive - West of Russ Baker Way | 525 | 550 | 550 | 7,000 | 93 | 8,000 | -11% | -875 |
| 28 | All | Horeshoe Bay Ferry Terminal Screenline | 400 | 500 | 625 | 6,500 | 30 | 6,500 | -7% | -450 |
| 28 | 1 | Highway 1 - South of Horsehoe Bay Ferry Terminal | 400 | 500 | 625 | 6,500 | 94 | 6,500 | -7% | -450 |
| 29 | All | Highway 99 - Squamish Screenline | 775 | 600 | 925 | 10,500 | 27 | 11,500 | -7% | -825 |

| Screenline | Station | Description | Peak Hour Volume | | | 24 Hour Volumes | | | | |
|------------|---------|---|------------------|---------|-----------|---------------------------|----------------|---------------------|--------------------|-----------------------|
| | | | Morning | Midday | Afternoon | 2011 Daily Average Volume | 2011 Vol. Rank | 2008 Average Volume | % Growth from 2008 | Abs. Growth from 2008 |
| 29 | 1 | Highway 99 - North of Lion's Bay Ferry Terminal | 775 | 600 | 925 | 10,500 | 83 | 11,500 | -7% | -825 |
| 30 | All | Highway 11 - Abbotsford Screenline | 4,700 | 3,600 | 5,500 | 64,000 | 18 | 57,000 | 12% | 7,000 |
| 30 | 1 | Highway 1 - East of Highway 11 | 4,700 | 3,600 | 5,500 | 64,000 | 18 | 57,000 | 12% | 7,000 |
| 31 | All | Abbotsford's East City Screenline | 3,500 | 2,900 | 4,400 | 51,000 | 20 | 45,000 | 14% | 6,500 |
| 31 | 1 | Highway 1 at Vedder Canal | 3,500 | 2,900 | 4,400 | 51,000 | 25 | 45,000 | 14% | 6,500 |
| 32 | All | Highway 9 - Chilliwack Screenline | 1,300 | 1,600 | 1,950 | 24,000 | 23 | 20,000 | 18% | 3,700 |
| 32 | 1 | Highway 1 - West of Highway 9 | 1,300 | 1,600 | 1,950 | 24,000 | 49 | 20,000 | 18% | 3,700 |
| 116 | All | University of British Columbia | 5,000 | 3,400 | 4,900 | 58,000 | 19 | 59,000 | -2% | -1,400 |
| 116 | 1 | NW Marine Drive - East of UBC Campus | 80 | 90 | 120 | 1,300 | 108 | 1,150 | 12% | 140 |
| 116 | 2 | West 4th Avenue - West of Drummond Drive | 975 | 625 | 950 | 10,500 | 85 | 11,000 | -6% | -700 |
| 116 | 3 | University Boulevard - West of Blanca Steet | 1,100 | 850 | 1,150 | 13,500 | 71 | 14,000 | -5% | -725 |
| 116 | 4 | 16th Avenue - West of Blanca Street | 1,150 | 725 | 1,100 | 13,000 | 74 | 12,500 | 3% | 375 |
| 116 | 5 | SW Marine Drive - East of UBC Campus | 1,700 | 1,100 | 1,600 | 20,000 | 58 | 20,000 | -2% | -475 |
| All | All | All Stations | 246,000 | 196,000 | 276,000 | 3,521,000 | - | 3,515,000 | 0% | 6,000 |
| All | All-C | All Comparable Stations | - | - | - | 3,143,000 | - | 3,127,000 | 1% | 16,000 |
| CBD | All | Central Business District | 26,000 | 20,500 | 28,000 | 358,000 | - | 392,000 | -9% | -35,000 |
| SMF | All | South/Main Arm Fraser Screenline | 30,000 | 21,500 | 33,000 | 415,000 | - | 392,000 | 6% | 23,500 |

Notes:

The Albion Ferry is no longer in service and the 2008 values are not included

The screenline Peak hour is calculated as the hour in which the total volume across the entire screenline is highest, it is not the sum of max volumes for each individual station in the screenline.

3.2. CLASSIFICATION AND OCCUPANCY COUNTS

3.2.1. Summary of Auto Occupancy Surveys

Auto occupancy data are calculated by adding the total number of occupants in all passenger vehicles and dividing this sum by the total number of passenger vehicles during each interval. In equation form:

$$\text{AutoOccupancy} = \frac{\text{Total Occupants in all Passenger Vehicles}}{\text{Total Number of Passenger Vehicles}}$$

The number of occupants by vehicle is coded as 1 for driver-only vehicles and 2 for vehicles with driver and passenger. It is assumed that vehicles with three or more occupants have 3.25 people on average. Passenger vehicles refer to private automobiles and do not include taxis, limousines or buses.

The auto occupancy results indicate that:

- Overall average auto occupancy during the 16-hour Control period was 1.24, the same as in 2008.
- The morning peak period had the lowest average occupancy at 1.17. Midday and afternoon peak periods had occupancies of 1.27 and 1.28 respectively.
- The screenlines with the highest average occupancy were usually those that are located at gateways to the region. Tsawwassen (1.48), the U.S. border crossings at Highways 15 and 99 (1.40), Highways 1 and 7 at Hope (1.36) and the Vancouver International Airport (1.34) are all locations with relatively high average occupancy.
- The screenlines with the lowest average occupancy were the Pitt River Screenline and the Highway 15/Surrey ALR Screenline, both with an average occupancy of 1.18.

- Interestingly, the average occupancy at the CBD Combined Screenline declined somewhat from 1.28 in 2008 to 1.25 in 2008. At the same time, the occupancy at the combined South/Main arm of the Fraser river increased from 1.20 to 1.22.

Table 7 provides detailed data for the occupancy at each screenline and station.

Table 7 – Daily Occupancies at Each Screenline and Station

| Screenline | Station | Description | Peak Hour Occupancies | | | Average Auto Occupancy 06:00-09:00, 11:00-1300, 15:00-19:00 | | | | Average Daily Auto Occupancy 06:00-22:00 | | |
|------------|---------|--|-----------------------|--------|-----------|---|------|----------|-----------|--|------|----------|
| | | | Morning | Midday | Afternoon | 2011 | 2008 | % Change | 2011 Rank | 2011 | 2008 | % Change |
| 1 | All | Taylor Way Screenline | 1.21 | 1.25 | 1.32 | 1.24 | 1.25 | -1% | 9 | 1.25 | 1.26 | 0% |
| 1 | 1 | Highway 1 - East of Taylor Way | 1.22 | 1.22 | 1.27 | 1.22 | 1.23 | -1% | 55 | 1.23 | 1.23 | 0% |
| 1 | 2 | Marine Drive - East of Taylor Way | 1.20 | 1.27 | 1.40 | 1.26 | 1.28 | -1% | 27 | 1.28 | 1.29 | -1% |
| 2 | All | Burrard Inlet Screenline | 1.16 | 1.25 | 1.26 | 1.21 | 1.17 | 3% | 17 | 1.22 | 1.19 | 2% |
| 2 | 1 | Lions Gate Bridge | 1.17 | 1.30 | 1.31 | 1.24 | 1.22 | 2% | 36 | 1.26 | 1.24 | 1% |
| 2 | 3 | Second Narrows Bridge | 1.15 | 1.23 | 1.25 | 1.19 | 1.15 | 4% | 68 | 1.20 | 1.17 | 2% |
| 3 | All | False Creek Screenline | 1.18 | 1.26 | 1.29 | 1.23 | 1.26 | -3% | 14 | 1.25 | 1.28 | -2% |
| 3 | 1 | Burrard Bridge | 1.18 | 1.24 | 1.29 | 1.23 | 1.26 | -3% | 50 | 1.25 | 1.27 | -2% |
| 3 | 2 | Granville Bridge | 1.18 | 1.30 | 1.25 | 1.22 | 1.26 | -3% | 57 | 1.24 | 1.27 | -2% |
| 3 | 3 | Cambie Bridge | 1.19 | 1.28 | 1.35 | 1.24 | 1.29 | -4% | 42 | 1.26 | 1.31 | -4% |
| 4 | All | Main Street Screenline | 1.21 | 1.27 | 1.37 | 1.28 | 1.29 | -1% | 8 | 1.30 | 1.30 | 0% |
| 4 | 1 | Alexander Street - East of Carrall Street | 1.25 | 1.34 | 1.34 | 1.24 | 1.23 | 1% | 40 | 1.25 | 1.23 | 2% |
| 4 | 2 | Powell Street - East of Carrall Street | 1.25 | 1.25 | 1.35 | 1.26 | 1.26 | 0% | 30 | 1.27 | 1.28 | -1% |
| 4 | 3 | Cordova Street - East of Carrall Street | 1.18 | 1.19 | 1.41 | 1.27 | 1.27 | 0% | 25 | 1.30 | 1.28 | 1% |
| 4 | 4 | Hastings Street - East of Carrall Street | 1.29 | 1.41 | 1.45 | 1.36 | 1.32 | 3% | 6 | 1.37 | 1.34 | 2% |
| 4 | 5 | Pender Street - East of Carrall Street | 1.23 | 1.29 | 1.37 | 1.28 | 1.35 | -5% | 22 | 1.30 | 1.37 | -5% |
| 4 | 6 | Keefer Street - East of Carrall Street | 1.24 | 1.40 | 1.47 | 1.35 | 1.41 | -4% | 8 | 1.37 | 1.43 | -4% |
| 4 | 7 | Expo Boulevard - East of Carrall Street | 1.26 | 1.23 | 1.39 | 1.28 | - | - | 21 | 1.31 | - | - |
| 4 | 8 | Dunsmuir Street - East of Carrall Street | 1.27 | 1.32 | 1.32 | 1.27 | 1.28 | -1% | 26 | 1.28 | 1.30 | -2% |
| 4 | 9 | Georgia Street - East of Carrall Street | 1.16 | 1.26 | 1.29 | 1.23 | 1.27 | -4% | 51 | 1.24 | 1.28 | -3% |
| 4 | 11 | Pacific Boulevard - East of Carrall Street | 1.20 | 1.26 | 1.46 | 1.28 | - | - | 20 | 1.30 | - | - |
| 5 | All | Boundary Road Screenline | 1.17 | 1.28 | 1.29 | 1.23 | 1.22 | 1% | 13 | 1.25 | 1.23 | 1% |

| Screenline | Station | Description | Peak Hour Occupancies | | | Average Auto Occupancy 06:00-09:00, 11:00-1300, 15:00-19:00 | | | | Average Daily Auto Occupancy 06:00-22:00 | | |
|------------|---------|---|-----------------------|--------|-----------|---|------|----------|-----------|--|------|----------|
| | | | Morning | Midday | Afternoon | 2011 | 2008 | % Change | 2011 Rank | 2011 | 2008 | % Change |
| 5 | 1 | McGill Street - East of Commissioner Street | 1.16 | 1.21 | 1.22 | 1.18 | 1.18 | 0% | 75 | 1.19 | 1.20 | -1% |
| 5 | 2 | Hastings Street - West of Boundary Road, East of Kootenay | 1.22 | 1.31 | 1.47 | 1.29 | 1.23 | 5% | 19 | 1.31 | 1.24 | 5% |
| 5 | 3 | Adanac Street - West of Boundary Road | 1.27 | 1.32 | 1.42 | 1.29 | 1.28 | 1% | 17 | 1.31 | 1.28 | 2% |
| 5 | 5 | 1st Avenue - West of Boundary Road | 1.16 | 1.29 | 1.27 | 1.22 | 1.19 | 2% | 56 | 1.23 | 1.21 | 2% |
| 5 | 6 | Highway 7 - West of Boundary Road | 1.17 | 1.29 | 1.30 | 1.23 | 1.22 | 1% | 45 | 1.25 | 1.25 | 0% |
| 5 | 6 | Highway 1 - West of Boundary Road | 1.16 | 1.26 | 1.24 | 1.19 | 1.18 | 1% | 69 | 1.20 | 1.19 | 1% |
| 5 | 7 | Grandview Highway - West of Boundary Road | 1.23 | 1.30 | 1.31 | 1.26 | 1.24 | 2% | 29 | 1.27 | 1.26 | 1% |
| 5 | 8 | 22nd Avenue - West of Boundary Road | 1.19 | 1.29 | 1.36 | 1.26 | 1.24 | 2% | 31 | 1.28 | 1.26 | 1% |
| 5 | 9 | 29th Avenue / Joyce Street - West of Boundary Road | 1.20 | 1.36 | 1.34 | 1.26 | 1.22 | 4% | 28 | 1.28 | 1.23 | 4% |
| 5 | 11 | Kingsway - West of Boundary Road | 1.18 | 1.37 | 1.39 | 1.27 | 1.28 | -1% | 24 | 1.30 | 1.30 | 0% |
| 5 | 13 | 49th Avenue - West of Boundary Road | 1.21 | 1.33 | 1.39 | 1.30 | 1.28 | 2% | 15 | 1.31 | 1.29 | 2% |
| 5 | 14 | SE Marine Drive - West of Boundary Road | 1.12 | 1.26 | 1.28 | 1.20 | 1.16 | 3% | 65 | 1.21 | 1.17 | 4% |
| 5 | 15 | Marine Way - West of Boundary Road | 1.13 | 1.26 | 1.23 | 1.18 | 1.18 | 0% | 74 | 1.20 | 1.19 | 1% |
| 6 | All | North Arm Fraser River Screenline | 1.14 | 1.27 | 1.28 | 1.21 | 1.21 | 0% | 16 | 1.24 | 1.22 | 1% |
| 6 | 1 | Arthur Laing Bridge | 1.17 | 1.33 | 1.30 | 1.23 | 1.21 | 2% | 46 | 1.26 | 1.22 | 3% |
| 6 | 2 | Oak Street Bridge | 1.16 | 1.31 | 1.30 | 1.24 | 1.27 | -2% | 41 | 1.25 | 1.28 | -2% |
| 6 | 3 | Knight Street Bridge | 1.13 | 1.23 | 1.33 | 1.21 | 1.21 | 0% | 60 | 1.25 | 1.22 | 2% |
| 6 | 4 | Queensborough Bridge | 1.12 | 1.23 | 1.24 | 1.17 | 1.16 | 1% | 78 | 1.19 | 1.17 | 2% |
| 7 | All | Middle Arm Fraser River Screenline | 1.22 | 1.36 | 1.36 | 1.28 | 1.26 | 2% | 7 | 1.30 | 1.27 | 2% |
| 7 | 1 | Dinsmore Bridge | 1.19 | 1.30 | 1.31 | 1.24 | 1.19 | 4% | 43 | 1.25 | 1.20 | 4% |

| Screenline | Station | Description | Peak Hour Occupancies | | | Average Auto Occupancy 06:00-09:00, 11:00-1300, 15:00-19:00 | | | | Average Daily Auto Occupancy 06:00-22:00 | | |
|------------|---------|--|-----------------------|--------|-----------|---|------|----------|-----------|--|------|----------|
| | | | Morning | Midday | Afternoon | 2011 | 2008 | % Change | 2011 Rank | 2011 | 2008 | % Change |
| 7 | 2 | Moray Bridge | 1.18 | 1.42 | 1.41 | 1.32 | 1.31 | 1% | 10 | 1.34 | 1.33 | 1% |
| 7 | 3 | No. 2 Road Bridge | 1.24 | 1.28 | 1.32 | 1.25 | 1.24 | 1% | 33 | 1.26 | 1.26 | 0% |
| 7 | 4 | Airport Connector Bridge | 1.26 | 1.45 | 1.44 | 1.35 | 1.32 | 2% | 9 | 1.37 | 1.34 | 2% |
| 8 | All | East Richmond Screenline | 1.18 | 1.26 | 1.35 | 1.24 | 1.15 | 8% | 10 | 1.25 | 1.17 | 6% |
| 8 | 2 | Highway 91 - West of No. 8 Road | 1.19 | 1.26 | 1.35 | 1.24 | 1.14 | 9% | 44 | 1.25 | 1.15 | 8% |
| 8 | 3 | Westminster Highway - West of No. 8 Road | 1.16 | 1.27 | 1.38 | 1.24 | 1.25 | -1% | 39 | 1.25 | 1.26 | -1% |
| 9 | All | South Arm Fraser River Screenline | 1.14 | 1.26 | 1.27 | 1.20 | 1.16 | 4% | 18 | 1.22 | 1.17 | 4% |
| 9 | 1 | Deas Tunnel | 1.16 | 1.28 | 1.32 | 1.23 | 1.19 | 3% | 48 | 1.25 | 1.20 | 4% |
| 9 | 2 | Alex Fraser Bridge | 1.13 | 1.25 | 1.25 | 1.18 | 1.14 | 4% | 72 | 1.20 | 1.15 | 4% |
| 10 | All | Main Arm Fraser River Screenline | 1.16 | 1.25 | 1.25 | 1.20 | 1.23 | -2% | 19 | 1.21 | 1.24 | -2% |
| 10 | 2 | Pattullo Bridge | 1.17 | 1.30 | 1.39 | 1.25 | 1.24 | 1% | 34 | 1.27 | 1.24 | 3% |
| 10 | 3 | Port Mann Bridge | 1.16 | 1.24 | 1.22 | 1.19 | 1.23 | -4% | 70 | 1.19 | 1.24 | -4% |
| 10 | 4 | Golden Ears Bridge | 1.13 | 1.19 | 1.18 | 1.14 | - | - | 80 | 1.15 | - | - |
| 11 | All | North Road Screenline | 1.19 | 1.27 | 1.26 | 1.23 | 1.24 | -1% | 11 | 1.24 | 1.25 | -1% |
| 11 | 1 | Highway 7A - West of North Road | 1.21 | 1.23 | 1.23 | 1.20 | 1.20 | 0% | 64 | 1.20 | 1.21 | -1% |
| 11 | 2 | Broadway - West of North Road | 1.17 | 1.26 | 1.24 | 1.18 | 1.21 | -2% | 71 | 1.20 | 1.23 | -2% |
| 11 | 3 | Cameron Street - West of North Road | 1.29 | 1.33 | 1.39 | 1.31 | 1.30 | 1% | 12 | 1.33 | 1.32 | 1% |
| 11 | 4 | Highway 7 - West of North Road | 1.16 | 1.32 | 1.28 | 1.22 | 1.25 | -2% | 53 | 1.25 | 1.27 | -2% |
| 11 | 5 | Austin Road - West of North Road | 1.31 | 1.37 | 1.40 | 1.31 | 1.29 | 1% | 13 | 1.33 | 1.30 | 2% |
| 11 | 5 | Gatineau Place - West of North Road | 1.28 | 1.42 | 1.68 | 1.43 | 1.39 | 3% | 3 | 1.46 | 1.40 | 4% |
| 11 | 6 | Highway 1 - West of North Road | 1.30 | 1.25 | 1.27 | 1.23 | 1.24 | -1% | 47 | 1.22 | 1.25 | -2% |
| 11 | 7 | North Road - South of Highway 1 | 1.17 | 1.29 | 1.31 | 1.22 | 1.24 | -2% | 58 | 1.24 | 1.26 | -1% |
| 11 | 8 | Brunette Avenue - South of Highway 1 | 1.15 | 1.28 | 1.29 | 1.21 | 1.20 | 1% | 62 | 1.23 | 1.21 | 1% |

| Screenline | Station | Description | Peak Hour Occupancies | | | Average Auto Occupancy 06:00-09:00, 11:00-1300, 15:00-19:00 | | | | Average Daily Auto Occupancy 06:00-22:00 | | |
|------------|---------|--|-----------------------|--------|-----------|---|------|----------|-----------|--|------|----------|
| | | | Morning | Midday | Afternoon | 2011 | 2008 | % Change | 2011 Rank | 2011 | 2008 | % Change |
| 12 | All | Pitt River Screenline | 1.13 | 1.22 | 1.26 | 1.17 | 1.20 | -2% | 22 | 1.18 | 1.22 | -3% |
| 12 | 1 | Pitt River Bridge | 1.13 | 1.22 | 1.26 | 1.17 | 1.20 | -2% | 77 | 1.18 | 1.22 | -3% |
| 13 | All | North Delta Screenline | 1.14 | 1.29 | 1.26 | 1.20 | 1.17 | 3% | 20 | 1.22 | 1.19 | 2% |
| 13 | 1 | River Road - West of Nordel Way | 1.09 | 1.20 | 1.19 | 1.13 | 1.15 | -2% | 82 | 1.14 | 1.17 | -2% |
| 13 | 2 | Highway 10 - West of 104th Street | 1.17 | 1.31 | 1.33 | 1.26 | 1.27 | -1% | 32 | 1.27 | 1.29 | -2% |
| 13 | 3 | Highway 99 - West of 104th Street | 1.15 | 1.33 | 1.28 | 1.20 | 1.14 | 5% | 63 | 1.23 | 1.15 | 7% |
| 15 | All | Semiahmoo Screenline | 1.16 | 1.30 | 1.28 | 1.23 | 1.24 | -1% | 12 | 1.24 | 1.25 | -1% |
| 15 | 1 | Highway 99 - East of Highway 91 | 1.14 | 1.34 | 1.26 | 1.22 | 1.16 | 5% | 59 | 1.23 | 1.18 | 5% |
| 15 | 2 | King George Blvd - North of Colebrook Road | 1.18 | 1.26 | 1.33 | 1.24 | 1.18 | 5% | 37 | 1.24 | 1.19 | 4% |
| 15 | 3 | 152nd Street - North of Colebrook Road | 1.20 | 1.26 | 1.34 | 1.25 | 1.27 | -2% | 35 | 1.26 | 1.28 | -1% |
| 16 | All | Highway 15 / Surrey ALR Screenline | 1.16 | 1.23 | 1.20 | 1.16 | - | - | 23 | 1.18 | - | - |
| 16 | 2 | Highway 1 - West of 176th Street | 1.13 | 1.20 | 1.16 | 1.15 | - | - | 79 | 1.16 | - | - |
| 16 | 4 | 88th Avenue - West of 176th Street | 1.10 | 1.19 | 1.17 | 1.13 | - | - | 83 | 1.14 | - | - |
| 16 | 6 | Fraser Highway (Hwy 1A) - West of 176th Street | 1.17 | 1.26 | 1.30 | 1.22 | - | - | 54 | 1.24 | - | - |
| 16 | 7 | 168th Street - North of Northview Golf Club | 1.27 | 1.30 | 1.25 | 1.21 | - | - | 61 | 1.22 | - | - |
| 16 | 8 | 64th Avenue - West of 164th Street | 1.19 | 1.28 | 1.24 | 1.18 | - | - | 76 | 1.19 | - | - |
| 16 | 9 | Highway 10 - West of 164th Street | 1.14 | 1.25 | 1.21 | 1.13 | - | - | 81 | 1.15 | - | - |
| 16 | 10 | Highway 15 - North of 48th Avenue | 1.15 | 1.22 | 1.29 | 1.19 | - | - | 67 | 1.20 | - | - |
| 17 | All | 264th Street Screenline | 1.15 | 1.27 | 1.24 | 1.19 | 1.20 | -1% | 21 | 1.21 | 1.22 | -1% |
| 17 | 1 | Highway 1 - East of 264th Street | 1.15 | 1.27 | 1.23 | 1.18 | 1.19 | -1% | 73 | 1.20 | 1.20 | 0% |
| 17 | 2 | Fraser Hwy - East of 276th Street | 1.18 | 1.28 | 1.32 | 1.23 | 1.23 | 0% | 49 | 1.23 | 1.25 | -2% |
| 18 | All | 284th Street Screenline | 1.15 | 1.25 | 1.29 | 1.22 | 1.15 | 6% | 15 | 1.23 | 1.17 | 5% |

| Screenline | Station | Description | Peak Hour Occupancies | | | Average Auto Occupancy 06:00-09:00, 11:00-1300, 15:00-19:00 | | | | Average Daily Auto Occupancy 06:00-22:00 | | |
|------------|---------|---|-----------------------|--------|-----------|---|------|----------|-----------|--|------|----------|
| | | | Morning | Midday | Afternoon | 2011 | 2008 | % Change | 2011 Rank | 2011 | 2008 | % Change |
| 18 | 2 | Lougheed Highway - East of 280th Street | 1.15 | 1.25 | 1.29 | 1.22 | 1.15 | 6% | 52 | 1.23 | 1.17 | 5% |
| 21 | All | Highway 1 & 7 - Hope Screenline | 1.21 | 1.47 | 1.45 | 1.35 | 1.27 | 6% | 3 | 1.36 | 1.29 | 5% |
| 21 | 1 | Highway 7 - West of Highway 1 | 1.13 | 1.42 | 1.41 | 1.24 | 1.39 | -11% | 38 | 1.24 | 1.39 | -11% |
| 21 | 2 | Highway 1 - West of Hope | 1.25 | 1.49 | 1.46 | 1.37 | 1.25 | 10% | 4 | 1.38 | 1.27 | 9% |
| 24 | All | Highway 15 & 99 - U.S. Border Screenline | 1.36 | 1.50 | 1.49 | 1.40 | 1.29 | 9% | 2 | 1.40 | 1.30 | 8% |
| 24 | 1 | Highway 99 - North of U.S. Border | 1.39 | 1.50 | 1.54 | 1.44 | 1.28 | 13% | 2 | 1.44 | 1.28 | 12% |
| 24 | 2 | Highway 15 - North of U.S. Border | 1.34 | 1.50 | 1.47 | 1.35 | 1.30 | 4% | 7 | 1.36 | 1.31 | 4% |
| 26 | All | Tsawwassen Screenline | 1.48 | 1.53 | 1.64 | 1.45 | 1.44 | 1% | 1 | 1.48 | 1.48 | 0% |
| 26 | 1 | Highway 17 - North of Tsawwassen Ferry Terminal | 1.53 | 1.57 | 1.66 | 1.54 | 1.59 | -3% | 1 | 1.56 | 1.61 | -3% |
| 26 | 2 | Deltaport Way - South of 27B Avenue | 1.14 | 1.22 | 1.17 | 1.10 | 1.09 | 1% | 84 | 1.10 | 1.09 | 1% |
| 27 | All | Vancouver International Airport Screenline | 1.26 | 1.43 | 1.37 | 1.32 | 1.40 | -5% | 4 | 1.34 | 1.42 | -5% |
| 27 | 1 | Grant McConachie Way - East of Templeton Street | 1.28 | 1.48 | 1.42 | 1.36 | 1.45 | -6% | 5 | 1.38 | 1.46 | -5% |
| 27 | 2 | Miller Road - East of Templeton Street | 1.20 | 1.27 | 1.21 | 1.19 | 1.12 | 7% | 66 | 1.21 | 1.14 | 6% |
| 29 | All | Highway 99 - Squamish Screenline | 1.27 | 1.46 | 1.40 | 1.29 | 1.29 | 0% | 6 | 1.30 | 1.30 | 0% |
| 29 | 1 | Highway 99 - North of Lion's Bay Ferry Terminal | 1.27 | 1.46 | 1.40 | 1.29 | 1.29 | 0% | 18 | 1.30 | 1.30 | 0% |
| 116 | All | University of British Columbia | 1.26 | 1.30 | 1.37 | 1.29 | 1.24 | 4% | 5 | 1.29 | 1.25 | 3% |
| 116 | 2 | West 4th Avenue - West of Drummond Drive | 1.25 | 1.29 | 1.40 | 1.31 | 1.19 | 10% | 14 | 1.30 | 1.21 | 7% |
| 116 | 3 | University Boulevard - West of Blanca Street | 1.30 | 1.34 | 1.37 | 1.32 | 1.33 | -1% | 11 | 1.32 | 1.35 | -2% |
| 116 | 4 | 16th Avenue - West of Blanca Street | 1.25 | 1.27 | 1.38 | 1.29 | 1.25 | 3% | 16 | 1.29 | 1.26 | 2% |

| Screenline | Station | Description | Peak Hour Occupancies | | | Average Auto Occupancy 06:00-09:00, 11:00-1300, 15:00-19:00 | | | | Average Daily Auto Occupancy 06:00-22:00 | | |
|------------|---------|--------------------------------------|-----------------------|--------|-----------|---|------|----------|-----------|--|------|----------|
| | | | Morning | Midday | Afternoon | 2011 | 2008 | % Change | 2011 Rank | 2011 | 2008 | % Change |
| 116 | 5 | SW Marine Drive - East of UBC Campus | 1.25 | 1.29 | 1.35 | 1.27 | 1.19 | 7% | 23 | 1.27 | 1.20 | 6% |
| CBD | All | Central Business district | 1.17 | 1.26 | 1.30 | 1.23 | 1.26 | -3% | - | 1.25 | 1.28 | -2% |
| SMF | All | South/Main Arm Fraser Screenline | 1.15 | 1.26 | 1.26 | 1.20 | 1.20 | 0% | - | 1.22 | 1.20 | 1% |
| All | All | All Stations | 1.17 | 1.27 | 1.28 | 1.22 | 1.22 | 0% | - | 1.24 | 1.24 | 0% |

3.2.2. Summary of Truck Volumes

As part of the classification/occupancy surveys, the volumes of light and heavy trucks were collected in 15-minute intervals. Light trucks are trucks with only two axles but four wheels on the rear axle. Heavy trucks are trucks with three or more axles. For summary purposes, the volumes of light and heavy trucks were combined to a single 'Trucks' category.

The truck classification results indicate that:

- Overall percentage of trucks during the 16-hour Control period was 6%;
- The percentage of trucks is highest during the midday peak period with trucks making up 9% of overall traffic;
- Afternoon peak hour truck volume is somewhat lower than that of the morning peak hour (6% vs. 5%). This is consistent with previous studies and can be attributed to the requirement of many truck drivers to start deliveries early, as well as avoiding the afternoon peak period due to the difficulty of driving trucks in heavy traffic.
- The three screenlines with the highest truck volumes are Highway 15/Surrey ALR (about 19,000), North Arm Fraser (about 18,000), North Road (about 17,000) and Boundary Road (about 17,000). These are also the screenlines with the highest total vehicle volumes;
- The screenlines with the highest percentage of trucks are Tsawwassen (22%), Highways 1 and 7 – Hope (20%), North Delta (11%) and 264th Street (11%). This is consistent with the importance of these routes for regional and inter-regional goods movement; and
- With regard to individual stations, Deltaport Way had an exceptionally high percentage of trucks with 59% of all traffic.

River Road – Nordel Way also had a high proportion of trucks with 26%.

Table 8 shows detailed truck data for each individual count screenline and station as follows:

- **Peak Hour Truck Volumes:** The combined two-way truck volumes for the morning, midday and afternoon peak hours (the four consecutive 15-minute intervals having the highest vehicle volumes within each Peak Period) for each count location;
- **Peak Hour Percent of Trucks:** Truck volume relative to all motor vehicles for the morning, midday and afternoon peak hours;
- **Total Truck Volumes:** Volume of trucks during the 16-hour Control period;
- **Total Truck Percentage:** Percentage of trucks relative to all motor vehicles during the 16-hour Control period;
- **Total truck volumes from 2008:** For the 16-hour Control period and the percentage increase in total truck volumes from 2008. Note that comparisons to 2008 are not available for all screenlines due to revisions in the survey locations or types of surveys conducted at each location

Table 8 – Truck Volumes by Screenline and Station

| Screenline | Station | Description | Peak Hour Truck Volumes | | | Peak Hour Percent Trucks | | | Total Truck Volumes 06:00-22:00 | | | | |
|------------|---------|--|-------------------------|--------|-----------|--------------------------|--------|-----------|---------------------------------|-----------------|--------------------------|--------|--------------------|
| | | | Morning | Midday | Afternoon | Morning | Midday | Afternoon | 2011 | 2011 Truck Rank | % Trucks of All Vehicles | 2008 | % Change from 2008 |
| 1 | All | Taylor Way Screenline | 234 | 261 | 223 | 3% | 4% | 3% | 2,742 | 15 | 3% | 2,991 | -8% |
| 1 | 1 | Highway 1 - East of Taylor Way | 166 | 187 | 184 | 3% | 5% | 5% | 2,053 | 25 | 3% | 2,351 | -13% |
| 1 | 2 | Marine Drive - East of Taylor Way | 69 | 74 | 39 | 2% | 2% | 1% | 689 | 48 | 1% | 640 | 8% |
| 2 | All | Burrard Inlet Screenline | 450 | 623 | 418 | 3% | 6% | 3% | 5,941 | 10 | 3% | 6,300 | -6% |
| 2 | 1 | Lions Gate Bridge | 30 | 57 | 25 | 1% | 2% | 1% | 434 | 61 | 1% | 419 | 4% |
| 2 | 3 | Second Narrows Bridge | 421 | 568 | 397 | 4% | 9% | 5% | 5,507 | 11 | 5% | 5,881 | -6% |
| 3 | All | False Creek Screenline | 176 | 227 | 128 | 2% | 3% | 1% | 2,008 | 19 | 1% | 2,223 | -10% |
| 3 | 1 | Burrard Bridge | 61 | 98 | 52 | 1% | 3% | 1% | 765 | 47 | 2% | 885 | -14% |
| 3 | 2 | Granville Bridge | 33 | 56 | 31 | 1% | 2% | 1% | 462 | 59 | 1% | 764 | -40% |
| 3 | 3 | Cambie Bridge | 85 | 83 | 46 | 3% | 3% | 2% | 781 | 46 | 2% | 574 | 36% |
| 4 | All | Main Street Screenline | 212 | 276 | 170 | 2% | 4% | 2% | 2,552 | 18 | 2% | 3,989 | -36% |
| 4 | 1 | Alexander Street - East of Carrall Street | 5 | 5 | 2 | 12% | 6% | 2% | 33 | 83 | 3% | 62 | -47% |
| 4 | 2 | Powell Street - East of Carrall Street | 23 | 28 | 12 | 2% | 4% | 1% | 232 | 72 | 2% | 251 | -8% |
| 4 | 3 | Cordova Street - East of Carrall Street | 16 | 31 | 26 | 3% | 4% | 3% | 265 | 70 | 2% | 375 | -29% |
| 4 | 4 | Hastings Street - East of Carrall Street | 41 | 60 | 21 | 4% | 6% | 2% | 398 | 63 | 3% | 667 | -40% |
| 4 | 5 | Pender Street - East of Carrall Street | 13 | 19 | 15 | 3% | 3% | 2% | 169 | 75 | 2% | 190 | -11% |
| 4 | 6 | Keefer Street - East of Carrall Street | 7 | 12 | 4 | 4% | 4% | 2% | 89 | 81 | 2% | 139 | -36% |
| 4 | 7 | Expo Boulevard - East of Carrall Street | 40 | 30 | 12 | 6% | 4% | 2% | 252 | 71 | - | - | - |
| 4 | 8 | Dunsmuir Street - East of Carrall Street | 52 | 27 | 25 | 4% | 3% | 2% | 365 | 65 | 2% | 669 | -45% |
| 4 | 9 | Georgia Street - East of Carrall Street | 25 | 45 | 32 | 2% | 4% | 2% | 447 | 60 | 2% | 716 | -38% |
| 4 | 11 | Pacific Boulevard - East of Carrall Street | 22 | 40 | 26 | 2% | 5% | 3% | 302 | 67 | - | - | - |
| 5 | All | Boundary Road Screenline | 1,549 | 1,774 | 1,150 | 5% | 7% | 4% | 16,736 | 4 | 4% | 16,377 | 2% |

| Screenline | Station | Description | Peak Hour Truck Volumes | | | Peak Hour Percent Trucks | | | Total Truck Volumes 06:00-22:00 | | | | |
|------------|---------|---|-------------------------|--------|-----------|--------------------------|--------|-----------|---------------------------------|-----------------|--------------------------|--------|--------------------|
| | | | Morning | Midday | Afternoon | Morning | Midday | Afternoon | 2011 | 2011 Truck Rank | % Trucks of All Vehicles | 2008 | % Change from 2008 |
| 5 | 1 | McGill Street - East of Commissioner Street | 329 | 390 | 213 | 9% | 18% | 9% | 3,181 | 20 | 8% | 2,875 | 11% |
| 5 | 2 | Hastings Street - West of Boundary Road, East of Kootenay | 94 | 101 | 83 | 3% | 5% | 3% | 958 | 39 | 3% | 909 | 5% |
| 5 | 3 | Adanac Street - West of Boundary Road | 5 | 2 | 8 | 1% | 1% | 3% | 30 | 84 | 1% | 22 | 36% |
| 5 | 5 | 1st Avenue - West of Boundary Road | 121 | 140 | 67 | 5% | 7% | 4% | 1,211 | 36 | 4% | 721 | 68% |
| 5 | 6 | Highway 7 - West of Boundary Road | 104 | 97 | 90 | 3% | 5% | 3% | 1,064 | 37 | 3% | 1,263 | -16% |
| 5 | 6 | Highway 1 - West of Boundary Road | 441 | 465 | 261 | 7% | 9% | 5% | 4,543 | 14 | 5% | 6,515 | -30% |
| 5 | 7 | Grandview Highway - West of Boundary Road | 129 | 165 | 93 | 4% | 6% | 3% | 1,478 | 31 | 4% | 1,645 | -10% |
| 5 | 8 | 22nd Avenue - West of Boundary Road | 15 | 24 | 15 | 2% | 4% | 2% | 160 | 78 | 1% | 156 | 3% |
| 5 | 9 | 29th Avenue / Joyce Street - West of Boundary Road | 46 | 70 | 47 | 4% | 8% | 4% | 565 | 53 | 3% | 924 | -39% |
| 5 | 11 | Kingsway - West of Boundary Road | 60 | 70 | 59 | 2% | 3% | 3% | 624 | 51 | 2% | 760 | -18% |
| 5 | 13 | 49th Avenue - West of Boundary Road | 27 | 57 | 42 | 2% | 4% | 2% | 477 | 58 | 2% | 424 | 13% |
| 5 | 14 | SE Marine Drive - West of Boundary Road | 14 | 9 | 15 | 1% | 1% | 2% | 162 | 77 | 1% | 160 | 1% |
| 5 | 15 | Marine Way - West of Boundary Road | 201 | 232 | 193 | 7% | 11% | 8% | 2,283 | 22 | 6% | 2,878 | -21% |
| 6 | All | North Arm Fraser River Screenline | 1,560 | 1,906 | 1,261 | 7% | 10% | 6% | 18,270 | 2 | 6% | 17,888 | 2% |
| 6 | 1 | Arthur Laing Bridge | 179 | 110 | 94 | 3% | 2% | 2% | 1,296 | 33 | 2% | 1,559 | -17% |
| 6 | 2 | Oak Street Bridge | 220 | 297 | 169 | 4% | 6% | 3% | 2,533 | 21 | 3% | 2,306 | 10% |
| 6 | 3 | Knight Street Bridge | 576 | 780 | 488 | 9% | 14% | 8% | 7,185 | 6 | 8% | 6,995 | 3% |
| 6 | 4 | Queensborough Bridge | 585 | 719 | 511 | 10% | 17% | 9% | 7,256 | 5 | 9% | 7,028 | 3% |
| 7 | All | Middle Arm Fraser River Screenline | 211 | 210 | 184 | 3% | 4% | 3% | 2,613 | 17 | 3% | 3,021 | -14% |
| 7 | 1 | Dinsmore Bridge | 49 | 50 | 28 | 3% | 4% | 2% | 502 | 55 | 2% | 347 | 45% |

| Screenline | Station | Description | Peak Hour Truck Volumes | | | Peak Hour Percent Trucks | | | Total Truck Volumes 06:00-22:00 | | | | |
|------------|---------|--|-------------------------|--------|-----------|--------------------------|--------|-----------|---------------------------------|-----------------|--------------------------|--------|--------------------|
| | | | Morning | Midday | Afternoon | Morning | Midday | Afternoon | 2011 | 2011 Truck Rank | % Trucks of All Vehicles | 2008 | % Change from 2008 |
| 7 | 2 | Moray Bridge | 68 | 62 | 64 | 12% | 5% | 6% | 867 | 41 | 5% | 1,237 | -30% |
| 7 | 3 | No. 2 Road Bridge | 35 | 43 | 30 | 1% | 3% | 1% | 367 | 64 | 1% | 336 | 9% |
| 7 | 4 | Airport Connector Bridge | 71 | 76 | 75 | 6% | 5% | 5% | 877 | 40 | 5% | 1,101 | -20% |
| 8 | All | East Richmond Screenline | 627 | 852 | 638 | 10% | 15% | 10% | 8,670 | 8 | 9% | 9,920 | -13% |
| 8 | 2 | Highway 91 - West of No. 8 Road | 576 | 816 | 597 | 11% | 16% | 10% | 8,169 | 2 | 10% | 6,375 | 28% |
| 8 | 3 | Westminster Highway - West of No. 8 Road | 51 | 49 | 47 | 7% | 8% | 7% | 501 | 57 | 5% | 3,545 | -86% |
| 9 | All | South Arm Fraser River Screenline | 1,101 | 1,429 | 1,115 | 9% | 14% | 10% | 14,580 | 5 | 8% | 13,054 | 12% |
| 9 | 1 | Deas Tunnel | 520 | 815 | 437 | 9% | 18% | 10% | 6,474 | 10 | 8% | 5,628 | 15% |
| 9 | 2 | Alex Fraser Bridge | 581 | 623 | 678 | 8% | 12% | 10% | 8,106 | 3 | 8% | 7,426 | 9% |
| 10 | All | Main Arm Fraser River Screenline | 1,115 | 1,264 | 979 | 8% | 12% | 8% | 13,646 | 6 | 7% | 12,802 | 7% |
| 10 | 2 | Pattullo Bridge | 395 | 449 | 313 | 9% | 13% | 7% | 4,638 | 13 | 7% | 4,037 | 15% |
| 10 | 3 | Port Mann Bridge | 513 | 645 | 494 | 8% | 11% | 8% | 6,852 | 8 | 7% | 8,765 | -22% |
| 10 | 4 | Golden Ears Bridge | 224 | 180 | 174 | 9% | 13% | 12% | 2,156 | 23 | 8% | - | - |
| 11 | All | North Road Screenline | 1,348 | 1,685 | 1,042 | 6% | 10% | 5% | 17,352 | 3 | 6% | 19,411 | -11% |
| 11 | 1 | Highway 7A - West of North Road | 38 | 36 | 25 | 1% | 4% | 1% | 433 | 62 | 2% | 451 | -4% |
| 11 | 2 | Broadway - West of North Road | 34 | 27 | 23 | 1% | 2% | 1% | 355 | 66 | 1% | 370 | -4% |
| 11 | 3 | Cameron Street - West of North Road | 10 | 17 | 10 | 2% | 2% | 1% | 156 | 79 | 1% | 164 | -5% |
| 11 | 4 | Highway 7 - West of North Road | 94 | 93 | 69 | 5% | 6% | 4% | 861 | 42 | 4% | 1,019 | -16% |
| 11 | 5 | Austin Road - West of North Road | 22 | 28 | 12 | 1% | 2% | 1% | 267 | 69 | 1% | 265 | 1% |
| 11 | 5 | Gatineau Place - West of North Road | 5 | 11 | 7 | 1% | 3% | 2% | 76 | 82 | 1% | 104 | -27% |
| 11 | 6 | Highway 1 - West of North Road | 649 | 786 | 443 | 9% | 13% | 6% | 7,880 | 4 | 8% | 8,424 | -6% |
| 11 | 7 | North Road - South of Highway 1 | 49 | 65 | 55 | 2% | 4% | 3% | 687 | 49 | 3% | 850 | -19% |
| 11 | 8 | Brunette Avenue - South of Highway 1 | 459 | 676 | 417 | 13% | 21% | 12% | 6,637 | 9 | 13% | 7,764 | -15% |

| Screenline | Station | Description | Peak Hour Truck Volumes | | | Peak Hour Percent Trucks | | | Total Truck Volumes 06:00-22:00 | | | | |
|------------|---------|--|-------------------------|--------|-----------|--------------------------|--------|-----------|---------------------------------|-----------------|--------------------------|--------|--------------------|
| | | | Morning | Midday | Afternoon | Morning | Midday | Afternoon | 2011 | 2011 Truck Rank | % Trucks of All Vehicles | 2008 | % Change from 2008 |
| 12 | All | Pitt River Screenline | 363 | 434 | 264 | 7% | 12% | 6% | 4,140 | 12 | 6% | 3,822 | 8% |
| 12 | 1 | Pitt River Bridge | 363 | 434 | 264 | 7% | 12% | 6% | 4,140 | 16 | 6% | 3,822 | 8% |
| 13 | All | North Delta Screenline | 716 | 832 | 722 | 11% | 18% | 15% | 9,528 | 7 | 11% | 10,491 | -9% |
| 13 | 1 | River Road - West of Nordel Way | 380 | 468 | 346 | 28% | 40% | 44% | 5,110 | 12 | 26% | 6,829 | -25% |
| 13 | 2 | Highway 10 - West of 104th Street | 98 | 115 | 98 | 8% | 11% | 8% | 1,212 | 35 | 7% | 1,053 | 15% |
| 13 | 3 | Highway 99 - West of 104th Street | 239 | 286 | 300 | 6% | 12% | 10% | 3,206 | 19 | 7% | 2,609 | 23% |
| 15 | All | Semiahmoo Screenline | 458 | 456 | 473 | 6% | 8% | 7% | 5,372 | 11 | 5% | 4,251 | 26% |
| 15 | 1 | Highway 99 - East of Highway 91 | 317 | 313 | 341 | 7% | 10% | 9% | 3,739 | 17 | 7% | 2,973 | 26% |
| 15 | 2 | King George Blvd - North of Colebrook Road | 79 | 78 | 84 | 3% | 5% | 5% | 849 | 43 | 3% | 873 | -3% |
| 15 | 3 | 152nd Street - North of Colebrook Road | 82 | 67 | 53 | 6% | 5% | 4% | 784 | 45 | 4% | 1,300 | -40% |
| 16 | All | Highway 15 / Surrey ALR Screenline | 1,543 | 1,789 | 1,387 | 10% | 15% | 11% | 19,178 | 1 | 9% | - | - |
| 16 | 2 | Highway 1 - West of 176th Street | 603 | 772 | 552 | 12% | 18% | 13% | 8,253 | 1 | 12% | - | - |
| 16 | 4 | 88th Avenue - West of 176th Street | 189 | 194 | 150 | 19% | 29% | 25% | 2,035 | 26 | 17% | - | - |
| 16 | 6 | Fraser Highway (Hwy 1A) - West of 176th Street | 172 | 173 | 118 | 9% | 11% | 7% | 1,704 | 29 | 7% | - | - |
| 16 | 7 | 168th Street - North of Northview Golf Club | 24 | 25 | 32 | 2% | 4% | 3% | 270 | 68 | 2% | - | - |
| 16 | 8 | 64th Avenue - West of 164th Street | 61 | 51 | 66 | 3% | 4% | 3% | 678 | 50 | 2% | - | - |
| 16 | 9 | Highway 10 - West of 164th Street | 360 | 392 | 313 | 11% | 18% | 12% | 4,229 | 15 | 11% | - | - |
| 16 | 10 | Highway 15 - North of 48th Avenue | 143 | 214 | 163 | 10% | 19% | 16% | 2,009 | 27 | 11% | - | - |
| 17 | All | 264th Street Screenline | 630 | 688 | 540 | 11% | 15% | 12% | 8,143 | 9 | 11% | 9,061 | -10% |
| 17 | 1 | Highway 1 - East of 264th Street | 559 | 594 | 457 | 12% | 18% | 13% | 7,114 | 7 | 12% | 7,928 | -10% |
| 17 | 2 | Fraser Hwy - East of 276th Street | 75 | 94 | 92 | 6% | 8% | 10% | 1,029 | 38 | 6% | 1,133 | -9% |
| 18 | All | 284th Street Screenline | 133 | 142 | 125 | 10% | 12% | 9% | 1,415 | 21 | 7% | 1,845 | -23% |

| Screenline | Station | Description | Peak Hour Truck Volumes | | | Peak Hour Percent Trucks | | | Total Truck Volumes 06:00-22:00 | | | | |
|------------|---------|---|-------------------------|--------|-----------|--------------------------|--------|-----------|---------------------------------|-----------------|--------------------------|-------|--------------------|
| | | | Morning | Midday | Afternoon | Morning | Midday | Afternoon | 2011 | 2011 Truck Rank | % Trucks of All Vehicles | 2008 | % Change from 2008 |
| 18 | 2 | Lougheed Highway - East of 280th Street | 133 | 142 | 125 | 10% | 12% | 9% | 1,415 | 32 | 7% | 1,845 | -23% |
| 21 | All | Highway 1 & 7 - Hope Screenline | 156 | 226 | 253 | 25% | 18% | 29% | 2,648 | 16 | 20% | 3,193 | -17% |
| 21 | 1 | Highway 7 - West of Highway 1 | 29 | 41 | 45 | 21% | 24% | 32% | 502 | 56 | 23% | 551 | -9% |
| 21 | 2 | Highway 1 - West of Hope | 127 | 185 | 216 | 26% | 17% | 29% | 2,146 | 24 | 20% | 2,642 | -19% |
| 24 | All | Highway 15 & 99 - U.S. Border Screenline | 154 | 156 | 114 | 12% | 9% | 7% | 1,941 | 20 | 8% | 2,364 | -18% |
| 24 | 1 | Highway 99 - North of U.S. Border | 2 | 3 | 5 | 0% | 0% | 1% | 89 | 80 | 1% | 92 | -3% |
| 24 | 2 | Highway 15 - North of U.S. Border | 154 | 153 | 111 | 21% | 18% | 15% | 1,852 | 28 | 14% | 2,272 | -18% |
| 26 | All | Tsawwassen Screenline | 323 | 283 | 345 | 31% | 20% | 23% | 4,068 | 13 | 22% | 4,648 | -12% |
| 26 | 1 | Highway 17 - North of Tsawwassen Ferry Terminal | 58 | 83 | 50 | 8% | 8% | 4% | 813 | 44 | 6% | 820 | -1% |
| 26 | 2 | Deltaport Way - South of 27B Avenue | 265 | 240 | 300 | 76% | 82% | 91% | 3,255 | 18 | 59% | 3,828 | -15% |
| 27 | All | Vancouver International Airport Screenline | 238 | 200 | 231 | 7% | 6% | 9% | 2,840 | 14 | 6% | 1,207 | 135% |
| 27 | 1 | Grant McConachie Way - East of Templeton Street | 140 | 96 | 118 | 6% | 3% | 6% | 1,621 | 30 | 4% | 348 | 366% |
| 27 | 2 | Miller Road - East of Templeton Street | 102 | 108 | 113 | 14% | 14% | 21% | 1,219 | 34 | 12% | 859 | 42% |
| 29 | All | Highway 99 - Squamish Screenline | 56 | 56 | 35 | 10% | 10% | 6% | 581 | 23 | 6% | 716 | -19% |
| 29 | 1 | Highway 99 - North of Lion's Bay Ferry Terminal | 56 | 56 | 35 | 10% | 10% | 6% | 581 | 52 | 6% | 716 | -19% |
| 116 | All | University of British Columbia | 97 | 139 | 61 | 2% | 4% | 2% | 1,088 | 22 | 2% | 1,002 | 9% |
| 116 | 2 | West 4th Avenue - West of Drummond Drive | 13 | 26 | 18 | 1% | 4% | 3% | 199 | 73 | 2% | 174 | 14% |
| 116 | 3 | University Boulevard - West of Blanca Street | 13 | 30 | 9 | 1% | 4% | 1% | 162 | 76 | 1% | 166 | -2% |
| 116 | 4 | 16th Avenue - West of Blanca Street | 17 | 32 | 10 | 2% | 5% | 1% | 170 | 74 | 1% | 184 | -8% |

| Screenline | Station | Description | Peak Hour Truck Volumes | | | Peak Hour Percent Trucks | | | Total Truck Volumes 06:00-22:00 | | | | |
|------------|---------|--------------------------------------|-------------------------|--------|-----------|--------------------------|--------|-----------|---------------------------------|-----------------|--------------------------|---------|--------------------|
| | | | Morning | Midday | Afternoon | Morning | Midday | Afternoon | 2011 | 2011 Truck Rank | % Trucks of All Vehicles | 2008 | % Change from 2008 |
| 116 | 5 | SW Marine Drive - East of UBC Campus | 59 | 67 | 28 | 4% | 6% | 2% | 557 | 54 | 3% | 478 | 17% |
| CBD | All | Central Business district | 408 | 553 | 319 | 2% | 3% | 1% | 4,994 | - | 2% | 6,631 | -25% |
| SMF | All | South/Main Arm Fraser Screenline | 2,216 | 2,670 | 2,094 | 6% | 13% | 7% | 28,226 | - | 8% | 25,856 | 9% |
| All | All | All Stations | 13,615 | 15,928 | 11,850 | 6% | 9% | 5% | 168,138 | - | 6% | 186,424 | -10% |

3.2.3. Summary of Cyclist Volumes and Pedestrian Volumes

As part of the Classification and Occupancy surveys, cycling activity was collected in 15-minute intervals.

Cyclist count results indicate that:

- The three screenlines with the highest cyclist volumes are Main Street, False Creek and UBC. This high number of commuters cycling to the CBD and UBC may be reflective of their proximity to City of Vancouver cycling routes, parking availability and cost, and land use policies that promote cycling activity;
- The three individual count stations with the highest 9-hour cyclist volumes are the Burrard Street Bridge (1,934), Seawall east of Carrall St (1,799) and Dunsmuir St east of Carrall Street (1,125).

Table 8 shows detailed cycling data for individual count stations as follows:

- **Peak Hour Cyclist Volumes:** The combined two-way cyclist volumes for the morning, midday and afternoon peak hours (the four consecutive 15-minute intervals having the highest vehicle volumes within each Peak Period) for each count location;
- **Total Cyclist Volumes:** Volume of cyclists during the 9-hour Peak period. Note that for the Peak stations, it was not feasible to interpolate and extrapolate cyclist volumes for the 16-hour Control period since cyclist volumes are not typically counted by the automatic counts and can be highly variable from hour to hour;

- **Total Cyclist Percentage:** Percentage of total vehicle traffic that cyclist volumes represent; and
- **Total Cyclist Volumes from 2008:** Includes 2008 volume and absolute change from 2008.

In addition to cyclists, the number of pedestrians passing each survey location was also collected in 15-minute intervals.

Pedestrian count results reveal:

- The three screenlines with the highest pedestrian volumes were Main Street, North Road and False Creek;
- At some stations on the Main Street screenline, pedestrian volumes are influenced by loitering persons, and may not represent typical walking trips;
- Most pedestrians crossing the North Road screenline did so at Lougheed Hwy, Austin Road or Gatineau Place. The high pedestrian demand reflects the proximity to Lougheed Mall and the Lougheed Town Centre SkyTrain station; and
- Except for Lougheed west of North Road, all of the top ten stations for pedestrian volumes are within the Central Business District.

Table 9 shows detailed pedestrian data for each screenline and station.

Table 9 – Cyclist Volumes by Screenline and Stations

| Screenline | Station | Description | Peak Hour Cyclist Volumes | | | Total Cyclist Volumes 06:00-09:00, 11:00-13:00, 15:00-19:00 | | | | |
|------------|---------|--|---------------------------|--------|-----------|---|----------------|-------------------------|-------|--------------------|
| | | | Morning | Midday | Afternoon | 2011 | 2011 Bike Rank | % Bikes of All Vehicles | 2008 | % Change from 2008 |
| 1 | 2 | Marine Drive - East of Taylor Way | 18 | 3 | 8 | 59 | 31 | 0% | 167 | -108 |
| 2 | 1 | Lions Gate Bridge | 188 | 57 | 217 | 998 | 5 | 3% | 288 | 710 |
| 2 | 3 | Second Narrows Bridge | 80 | 11 | 89 | 345 | 9 | 0% | 300 | 45 |
| 3 | 1 | Burrard Bridge | 353 | 95 | 415 | 1,934 | 1 | 6% | 2,346 | -412 |
| 3 | 2 | Granville Bridge | 17 | 23 | 18 | 126 | 20 | 0% | 286 | -160 |
| 3 | 3 | Cambie Bridge | 196 | 62 | 262 | 1,075 | 4 | 4% | 477 | 598 |
| 4 | 1 | Alexander Street - East of Carrall Street | 19 | 30 | 49 | 246 | 13 | 42% | 230 | 16 |
| 4 | 2 | Powell Street - East of Carrall Street | 14 | 18 | 22 | 110 | 24 | 2% | 146 | -36 |
| 4 | 3 | Cordova Street - East of Carrall Street | 11 | 26 | 38 | 178 | 15 | 3% | 182 | -4 |
| 4 | 4 | Hastings Street - East of Carrall Street | 20 | 46 | 77 | 332 | 10 | 4% | 269 | 63 |
| 4 | 5 | Pender Street - East of Carrall Street | 14 | 15 | 43 | 179 | 14 | 3% | 188 | -9 |
| 4 | 6 | Keefer Street - East of Carrall Street | 22 | 16 | 64 | 257 | 12 | 11% | 167 | 90 |
| 4 | 7 | Expo Boulevard - East of Carrall Street | 21 | 9 | 26 | 116 | 22 | 2% | - | - |
| 4 | 8 | Dunsmuir Street - East of Carrall Street | 255 | 61 | 207 | 1,125 | 3 | 11% | 207 | 918 |
| 4 | 9 | Georgia Street - East of Carrall Street | 7 | 7 | 20 | 56 | 32 | 0% | 170 | -114 |
| 4 | 11 | Pacific Boulevard - East of Carrall Street | 13 | 12 | 47 | 155 | 18 | 2% | 346 | -191 |
| 4 | 99 | Seawall - East of Carrall Street (ped/bike only) | 254 | 147 | 396 | 1,799 | 2 | - | - | - |
| 5 | 3 | Adanac Street - West of Boundary Road | 40 | 14 | 53 | 264 | 11 | 10% | 217 | 47 |
| 5 | 8 | 22nd Avenue - West of Boundary Road | 12 | 6 | 11 | 55 | 33 | 1% | 55 | 0 |
| 6 | 1 | Arthur Laing Bridge | 17 | 9 | 21 | 113 | 23 | 0% | 133 | -20 |
| 6 | 3 | Knight Street Bridge | 25 | 3 | 28 | 121 | 21 | 0% | 107 | 14 |
| 6 | 4 | Queensborough Bridge | 19 | 13 | 30 | 139 | 19 | 0% | 155 | -16 |
| 7 | 1 | Dinsmore Bridge | 13 | 6 | 17 | 78 | 26 | 1% | 60 | 18 |

| Screenline | Station | Description | Peak Hour Cyclist Volumes | | | Total Cyclist Volumes 06:00-09:00, 11:00-13:00, 15:00-19:00 | | | | |
|------------|---------|---|---------------------------|--------|-----------|---|----------------|-------------------------|------|--------------------|
| | | | Morning | Midday | Afternoon | 2011 | 2011 Bike Rank | % Bikes of All Vehicles | 2008 | % Change from 2008 |
| 7 | 2 | Moray Bridge | 8 | 9 | 16 | 79 | 25 | 1% | 19 | 60 |
| 7 | 3 | No. 2 Road Bridge | 21 | 18 | 30 | 159 | 17 | 1% | 79 | 80 |
| 7 | 4 | Airport Connector Bridge | 6 | 4 | 20 | 62 | 30 | 1% | 29 | 33 |
| 10 | 2 | Pattullo Bridge | 20 | 4 | 8 | 52 | 34 | 0% | 39 | 13 |
| 11 | 1 | Highway 7A - West of North Road | 15 | 2 | 17 | 67 | 29 | 0% | 37 | 30 |
| 11 | 4 | Highway 7 - West of North Road | 12 | 10 | 18 | 77 | 27 | 1% | 58 | 19 |
| 11 | 7 | North Road - South of Highway 1 | 9 | 7 | 17 | 77 | 28 | 0% | 24 | 53 |
| 116 | 2 | West 4th Avenue - West of Drummond Drive | 23 | 13 | 49 | 175 | 16 | 3% | 53 | 122 |
| 116 | 3 | University Boulevard - West of Blanca Steet | 183 | 48 | 201 | 879 | 6 | 12% | 698 | 181 |
| 116 | 4 | 16th Avenue - West of Blanca Street | 93 | 24 | 83 | 476 | 7 | 6% | 269 | 207 |
| 116 | 5 | SW Marine Drive - East of UBC Campus | 64 | 32 | 95 | 450 | 8 | 4% | 134 | 316 |

Table 10 – Pedestrian Volumes by Screenline and Station

| Screenline | Station | Description | Peak Hour Pedestrian Volumes | | | Total Pedestrian Volumes 06:00-09:00, 11:00-13:00, 15:00-19:00 | | | |
|------------|---------|---|------------------------------|--------|-----------|--|----------------------|-------|------------------|
| | | | Morning | Midday | Afternoon | 2011 | 2011 Pedestrian Rank | 2008 | Change from 2008 |
| 1 | 2 | Marine Drive - East of Taylor Way | 9 | 11 | 19 | 81 | 27 | 151 | -70 |
| 2 | 1 | Lions Gate Bridge | 6 | 13 | 19 | 71 | 31 | 35 | 36 |
| 3 | 1 | Burrard Bridge | 158 | 101 | 295 | 1,403 | 9 | 1,440 | -37 |
| 3 | 2 | Granville Bridge | 101 | 75 | 81 | 624 | 15 | 987 | -363 |
| 3 | 3 | Cambie Bridge | 145 | 117 | 324 | 1,320 | 10 | 905 | 415 |
| 4 | 1 | Alexander Street - East of Carrall Street | 182 | 273 | 312 | 1,886 | 5 | 1,322 | 564 |
| 4 | 2 | Powell Street - East of Carrall Street | 145 | 437 | 380 | 2,497 | 4 | 1,451 | 1,046 |
| 4 | 3 | Cordova Street - East of Carrall Street | 255 | 426 | 546 | 3,076 | 3 | 2,416 | 660 |
| 4 | 4 | Hastings Street - East of Carrall Street | 280 | 1,002 | 1,345 | 6,881 | 1 | 8,044 | -1,163 |
| 4 | 5 | Pender Street - East of Carrall Street | 183 | 626 | 798 | 3,879 | 2 | 4,682 | -803 |
| 4 | 6 | Keefer Street - East of Carrall Street | 91 | 239 | 253 | 1,416 | 8 | 4,751 | -3,335 |
| 4 | 7 | Expo Boulevard - East of Carrall Street | 31 | 31 | 65 | 294 | 17 | 292 | 2 |
| 4 | 8 | Dunsmuir Street - East of Carrall Street | 4 | 7 | 26 | 75 | 29 | 4 | 71 |
| 4 | 9 | Georgia Street - East of Carrall Street | 12 | 32 | 47 | 135 | 21 | 159 | -24 |
| 4 | 11 | Pacific Boulevard - East of Carrall Street | 9 | 7 | 15 | 72 | 30 | - | - |
| 4 | 99 | Seawall - East of Carrall Street (ped/bike only) | 153 | 186 | 309 | 1,634 | 6 | - | - |
| 5 | 2 | Hastings Street - West of Boundary Road, East of Kootenay | 71 | 75 | 118 | 650 | 14 | 928 | -278 |
| 5 | 3 | Adanac Street - West of Boundary Road | 18 | 7 | 22 | 120 | 22 | 98 | 22 |
| 5 | 6 | Highway 7 - West of Boundary Road | 24 | 13 | 23 | 101 | 24 | 79 | 22 |
| 5 | 7 | Grandview Highway - West of Boundary Road | 9 | 18 | 28 | 105 | 23 | 81 | 24 |
| 5 | 8 | 22nd Avenue - West of Boundary Road | 53 | 23 | 46 | 252 | 18 | 36 | 216 |
| 5 | 9 | 29th Avenue / Joyce Street - West of Boundary Road | 27 | 11 | 16 | 100 | 25 | 101 | -1 |
| 5 | 11 | Kingsway - West of Boundary Road | 31 | 69 | 49 | 326 | 16 | 678 | -352 |

| Screenline | Station | Description | Peak Hour Pedestrian Volumes | | | Total Pedestrian Volumes 06:00-09:00, 11:00-13:00, 15:00-19:00 | | | |
|------------|---------|---|------------------------------|--------|-----------|--|----------------------|-------|------------------|
| | | | Morning | Midday | Afternoon | 2011 | 2011 Pedestrian Rank | 2008 | Change from 2008 |
| 5 | 13 | 49th Avenue - West of Boundary Road | 26 | 10 | 24 | 141 | 20 | 104 | 37 |
| 6 | 4 | Queensborough Bridge | 10 | 9 | 26 | 90 | 26 | 84 | 6 |
| 11 | 3 | Cameron Street - West of North Road | 50 | 114 | 173 | 893 | 12 | 552 | 341 |
| 11 | 4 | Highway 7 - West of North Road | 184 | 149 | 264 | 1,530 | 7 | 1,236 | 294 |
| 11 | 5 | Austin Road - West of North Road | 165 | 149 | 220 | 1,177 | 11 | 937 | 240 |
| 11 | 5.1 | Gatineau Place - West of North Road | 69 | 79 | 162 | 784 | 13 | 758 | 26 |
| 11 | 7 | North Road - South of Highway 1 | 11 | 12 | 16 | 76 | 28 | 57 | 19 |
| 116 | 3 | University Boulevard - West of Blanca Steet | 22 | 10 | 61 | 211 | 19 | 249 | -38 |

3.3. TRANSIT SURVEYS

3.3.1. Summary of Transit Ridership

Transit data was collected on a vehicle-by-vehicle basis at the time of observation at each station. It was then combined into 15-minute intervals and summarised in hourly intervals.

Transit vehicle loads were typically recorded at the screenline. This meant that passenger counting was difficult, at some locations, because buses were speeding by the counters.

Whenever possible, an exact count of the passenger load was attempted. If the speed or frequency of buses was too high to permit an exact count, bus occupancies were estimated by recording the apparent percentage of space, in quarter increments, occupied by passengers within the bus. The estimations were based on seated and standing passenger capacities and the type of vehicle (standard and articulated buses, community shuttles and West Coast Express buses).

This survey method implies high level of inaccuracy in the counts, therefore a rounding scheme was introduced for reporting ridership numbers.

The transit ridership results indicate that:

- The two screenlines with the highest transit ridership volumes are Main Street and Boundary Road. Each of these screenlines was crossed by over 100,000 transit passengers during the 9-hour count period. At the Main Street screenline, approximately 69% of transit passengers travelled by SkyTrain, 21% by bus and 10% by West Coast Express/Commuter Rail. At the Boundary Road screenline, approximately 72% of transit ridership was on SkyTrain, 19% on buses and 9% on West Coast Express/Commuter Rail.
- Total two-way transit ridership into and out of the Central Business District during the 9-hour count period was approximately 212,000.

Table 11 provides detailed transit ridership data for each individual count station and screenline.

Table 11 – Transit Volumes by Screenline and Station

| Screenline | Station | Description | Peak Hour Volume | | | Total Transit Ridership 06:00-09:00, 11:00-13:00, 15:00-19:00 | | | | | |
|------------|---------|--|------------------|--------|-----------|---|---------------|----------------|---------------|------------------|------------------|
| | | | Morning | Midday | Afternoon | 2011 Ridership | 2011 Capacity | 2008 Ridership | 2008 Capacity | 2011 Volume Rank | Change from 2008 |
| 1 | All | Taylor Way Screenline | 1,300 | 725 | 1,850 | 9,500 | 17,000 | 9,000 | 18,000 | 10 | 500 |
| 1 | 2 | Marine Drive - East of Taylor Way | 1,300 | 725 | 1,850 | 9,500 | 17,000 | 9,000 | 18,000 | 18 | 500 |
| 2 | All | Burrard Inlet Screenline | 6,000 | 2,350 | 5,500 | 31,000 | 60,000 | 28,000 | 56,000 | 7 | 3,000 |
| 2 | 1 | Lions Gate Bridge | 2,150 | 925 | 1,950 | 12,000 | 18,500 | 11,500 | 17,000 | 11 | 240 |
| 2 | 2 | SeaBus | 1,850 | 1,000 | 2,350 | 12,500 | 29,000 | 9,500 | 29,000 | 10 | 2,800 |
| 2 | 3 | Second Narrows Bridge | 1,800 | 450 | 1,000 | 7,000 | 12,000 | 7,000 | 11,000 | 23 | -70 |
| 3 | All | False Creek Screenline | 12,000 | 5,000 | 13,500 | 73,000 | 160,000 | 60,000 | 73,000 | 3 | 13,000 |
| 3 | 1 | Burrard Bridge | 2,200 | 700 | 1,850 | 10,500 | 17,000 | 10,500 | 15,000 | 16 | 425 |
| 3 | 2 | Granville Bridge | 2,900 | 1,150 | 3,400 | 18,000 | 30,000 | 44,000 | 52,000 | 7 | -26,000 |
| 3 | 3 | Cambie Bridge | 400 | 120 | 450 | 1,850 | 5,500 | 5,500 | 6,500 | 42 | -3,500 |
| 3 | 4 | Canada Line | 6,500 | 3,300 | 7,500 | 42,000 | 107,000 | - | - | 4 | - |
| 4 | All | Main Street Screenline | 21,000 | 7,500 | 21,000 | 114,000 | 327,000 | 114,000 | 266,000 | 2 | 160 |
| 4 | 0 | Commuter Rail - West of Main Street | 3,000 | - | 2,800 | 11,500 | 12,000 | 10,500 | 10,500 | 12 | 750 |
| 4 | 3 | Cordova Street - East of Carrall Street | 240 | 210 | 725 | 3,000 | 16,500 | 5,000 | 17,500 | 33 | -2,050 |
| 4 | 4 | Hastings Street - East of Carrall Street | 2,250 | 1,150 | 2,300 | 13,000 | 45,000 | 15,500 | 35,000 | 9 | -2,700 |
| 4 | 5 | Pender Street - East of Carrall Street | 1,800 | 725 | 1,050 | 7,000 | 17,500 | 10,500 | 24,500 | 22 | -3,700 |
| 4 | 6 | Keefer Street - East of Carrall Street | 60 | 80 | 80 | 500 | 4,200 | - | - | 57 | 500 |
| 4 | 10 | SkyTrain - West of Main Street | 14,000 | 5,500 | 14,000 | 79,000 | 232,000 | 72,000 | 178,000 | 1 | 7,500 |
| 5 | All | Boundary Road Screenline | 22,500 | 7,500 | 23,500 | 130,000 | 377,000 | 112,000 | 342,000 | 1 | 17,500 |
| 5 | 1 | McGill Street - East of Commissioner Street | 875 | 240 | 725 | 3,700 | 5,500 | 3,600 | 5,500 | 32 | 130 |
| 5 | 1.1 | Commuter Rail - East of Cassiar Street | 3,000 | - | 2,800 | 11,500 | 12,000 | 10,500 | 10,500 | 13 | 750 |
| 5 | 2 | Hastings Street - West of Boundary Road, East of | 2,050 | 800 | 1,600 | 11,000 | 26,000 | 9,500 | 25,000 | 15 | 1,450 |

| Screenline | Station | Description | Peak Hour Volume | | | Total Transit Ridership 06:00-09:00, 11:00-13:00, 15:00-19:00 | | | | | |
|------------|---------|--|------------------|--------|-----------|---|---------------|----------------|---------------|------------------|------------------|
| | | | Morning | Midday | Afternoon | 2011 Ridership | 2011 Capacity | 2008 Ridership | 2008 Capacity | 2011 Volume Rank | Change from 2008 |
| | | Kootenay | | | | | | | | | |
| 5 | 3 | Adanac Street - West of Boundary Road | 60 | 40 | 60 | 375 | 3,600 | 550 | 3,400 | 58 | -170 |
| 5 | 6.2 | SkyTrain Line - Between Gilmore Avenue & Rupert Street | 3,700 | 1,200 | 3,900 | 22,000 | 71,000 | 22,000 | 79,000 | 6 | 10 |
| 5 | 8 | 22nd Avenue - West of Boundary Road | 500 | 140 | 375 | 2,000 | 6,500 | 1,600 | 5,000 | 37 | 400 |
| 5 | 10 | SkyTrain - West of Patterson Station | 11,000 | 4,400 | 12,500 | 72,000 | 228,000 | 55,000 | 191,000 | 2 | 17,000 |
| 5 | 11 | Kingsway - West of Boundary Road | 100 | 130 | 210 | 1,100 | 4,700 | 1,900 | 4,600 | 50 | -825 |
| 5 | 13 | 49th Avenue - West of Boundary Road | 650 | 425 | 775 | 4,800 | 15,000 | 5,500 | 14,000 | 28 | -800 |
| 5 | 14 | SE Marine Drive - West of Boundary Road | 275 | 80 | 250 | 1,500 | 5,000 | 1,900 | 3,600 | 44 | -400 |
| 6 | All | North Arm Fraser River Screenline ³ | 7,000 | 3,000 | 7,000 | 44,000 | 132,000 | 31,000 | 32,000 | 4 | 13,000 |
| 6 | 2 | Oak Street Bridge | 350 | 200 | 275 | 2,000 | 6,000 | 10,000 | 15,000 | 38 | -8,000 |
| 6 | 3 | Knight Street Bridge | 230 | 120 | 250 | 1,550 | 6,000 | 1,850 | 5,000 | 43 | -325 |
| 6 | 4 | Queensborough Bridge | 1,350 | 400 | 1,350 | 8,000 | 13,500 | 7,000 | 12,000 | 19 | 950 |
| 6 | 5 | Canada Line | 5,000 | 2,300 | 5,500 | 32,000 | 107,000 | - | - | 5 | - |
| 7 | All | Middle Arm Fraser River Screenline | 130 | 30 | 80 | 400 | 2,150 | 9,000 | 14,000 | 18 | -9,000 |
| 7 | 2 | Moray Bridge | 0 | 10 | 60 | 190 | 1,050 | 4,300 | 7,000 | 61 | -4,100 |
| 7 | 4 | Airport Connector Bridge | 130 | 30 | 10 | 220 | 1,100 | 4,900 | 7,000 | 60 | -4,700 |
| 8 | All | East Richmond Screenline | 650 | 200 | 750 | 3,400 | 8,000 | 3,500 | 6,500 | 15 | -160 |
| 8 | 2 | Highway 91 - West of No. 8 Road | 140 | 200 | 240 | 1,100 | 3,700 | 1,250 | 3,200 | 48 | -150 |
| 8 | 3 | Westminster Highway - West of No. 8 Road | 500 | 0 | 500 | 2,250 | 4,100 | 2,250 | 3,200 | 35 | -10 |
| 9 | All | South Arm Fraser River Screenline | 1,750 | 675 | 1,650 | 10,000 | 22,000 | 8,500 | 17,000 | 9 | 1,700 |
| 9 | 1 | Deas Tunnel | 1,350 | 450 | 1,250 | 7,500 | 15,500 | 7,000 | 11,500 | 21 | 800 |

³ The transit ridership on the Arthur Laing Bridge in the 2008 survey is factored in the calculation of change in ridership at this screenline.

| Screenline | Station | Description | Peak Hour Volume | | | Total Transit Ridership 06:00-09:00, 11:00-13:00, 15:00-19:00 | | | | | |
|------------|---------|--|------------------|--------|-----------|---|---------------|----------------|---------------|------------------|------------------|
| | | | Morning | Midday | Afternoon | 2011 Ridership | 2011 Capacity | 2008 Ridership | 2008 Capacity | 2011 Volume Rank | Change from 2008 |
| 9 | 2 | Alex Fraser Bridge | 425 | 230 | 425 | 2,700 | 6,500 | 1,800 | 5,500 | 34 | 875 |
| 10 | All | Main Arm Fraser River Screenline | 6,500 | 2,800 | 6,500 | 42,000 | 147,000 | 40,000 | 137,000 | 5 | 1,900 |
| 10 | 1 | SkyTrain - West of Scott Road Station | 6,500 | 2,800 | 6,500 | 41,000 | 145,000 | 40,000 | 137,000 | 4 | 1,300 |
| 10 | 4 | Golden Ears Bridge | 120 | 20 | 120 | 575 | 1,750 | - | - | 56 | - |
| 11 | All | North Road Screenline | 6,000 | 1,650 | 6,000 | 30,000 | 62,000 | 29,000 | 55,000 | 8 | 1,200 |
| 11 | 0 | Commuter Rail - West of North Road | 3,000 | - | 2,800 | 11,500 | 12,000 | 10,500 | 10,500 | 14 | 750 |
| 11 | 1 | Highway 7A - West of North Road | 425 | 80 | 300 | 1,850 | 2,700 | 1,400 | 2,600 | 41 | 475 |
| 11 | 2 | Broadway - West of North Road | 350 | 350 | 375 | 2,200 | 4,400 | 2,100 | 4,400 | 36 | 110 |
| 11 | 3 | Cameron Street - West of North Road | 60 | 50 | 60 | 300 | 2,600 | 210 | 2,450 | 59 | 90 |
| 11 | 5 | Austin Road - West of North Road | 275 | 150 | 90 | 900 | 3,600 | 1,500 | 3,300 | 51 | -600 |
| 11 | 5.1 | Gatineau Place - West of North Road | 1,150 | 525 | 1,350 | 7,500 | 21,000 | 7,000 | 16,500 | 20 | 550 |
| 11 | 7 | North Road - South of Highway 1 | 20 | 15 | 60 | 140 | 875 | 190 | 1,800 | 63 | -40 |
| 11 | 8 | Brunette Avenue - South of Highway 1 | 875 | 500 | 950 | 6,000 | 15,000 | 6,000 | 13,500 | 25 | -90 |
| 12 | All | Pitt River Screenline | 1,500 | 200 | 1,500 | 6,500 | 19,000 | 7,500 | 16,000 | 11 | -675 |
| 12 | 1 | Pitt River Bridge | 250 | 200 | 350 | 1,950 | 6,500 | 2,050 | 5,000 | 40 | -130 |
| 12 | 2 | Commuter Rail - Pitt River | 1,250 | - | 1,150 | 4,700 | 12,000 | 5,500 | 10,500 | 29 | -550 |
| 13 | All | North Delta Screenline | 350 | 60 | 325 | 1,650 | 4,000 | 1,850 | 3,700 | 16 | -200 |
| 13 | 1 | River Road - West of Nordel Way | 140 | 30 | 150 | 775 | 2,050 | 1,050 | 1,850 | 54 | -300 |
| 13 | 2 | Highway 10 - West of 104th Street | 200 | 25 | 170 | 900 | 1,900 | 800 | 1,800 | 52 | 100 |
| 13 | 3 | Highway 99 - West of 104th Street | 800 | 250 | 650 | 3,800 | 5,500 | 2,000 | 3,200 | 30 | 1,800 |
| 15 | All | Semiahmoo Screenline | 1,000 | 375 | 900 | 5,000 | 9,500 | 3,600 | 7,500 | 14 | 1,600 |
| 15 | 1 | Highway 99 - East of Highway 91 | 775 | 250 | 675 | 3,800 | 5,500 | 2,450 | 4,300 | 30 | 1,350 |
| 15 | 2 | King George Blvd - North of Colebrook Road | 230 | 120 | 220 | 1,350 | 4,300 | 1,150 | 3,500 | 45 | 220 |

| Screenline | Station | Description | Peak Hour Volume | | | Total Transit Ridership 06:00-09:00, 11:00-13:00, 15:00-19:00 | | | | | |
|------------|---------|---|------------------|--------|-----------|---|---------------|----------------|---------------|------------------|------------------|
| | | | Morning | Midday | Afternoon | 2011 Ridership | 2011 Capacity | 2008 Ridership | 2008 Capacity | 2011 Volume Rank | Change from 2008 |
| 15 | 3 | 152nd Street - North of Colebrook Road | 100 | 80 | 160 | 775 | 3,500 | 700 | - | 53 | 90 |
| 16 | All | Highway 15 / Surrey ALR Screenline | 775 | 325 | 1,100 | 5,500 | 16,500 | - | - | 13 | - |
| 16 | 2 | Highway 1 - West of 176th Street | 190 | 50 | 210 | 1,100 | 4,000 | - | 500 | 49 | - |
| 16 | 4 | 88th Avenue - West of 176th Street | 40 | 0 | 40 | 150 | 625 | - | - | 62 | - |
| 16 | 6 | Fraser Highway (Hwy 1A) - West of 176th Street | 190 | 140 | 500 | 2,000 | 5,000 | - | 625 | 39 | - |
| 16 | 7 | 168th Street - North of Northview Golf Club | 130 | 40 | 130 | 725 | 2,700 | - | - | 55 | - |
| 16 | 8 | 64th Avenue - West of 164th Street | 230 | 100 | 230 | 1,300 | 4,100 | - | 8,000 | 46 | - |
| 17 | All | 264th Street Screenline | 20 | 20 | 30 | 100 | 350 | - | - | 19 | - |
| 17 | 2 | Fraser Hwy - East of 276th Street | 20 | 20 | 30 | 100 | 350 | - | - | 64 | - |
| 26 | All | Tsawwassen Screenline | 60 | 120 | 325 | 1,250 | 2,000 | 210 | 1,200 | 17 | 1,050 |
| 26 | 1 | Highway 17 - North of Tsawwassen Ferry Terminal | 60 | 120 | 325 | 1,250 | 2,000 | 210 | 1,200 | 47 | 1,050 |
| 27 | All | Vancouver International Airport Screenline | 675 | 550 | 800 | 5,500 | 54,000 | 775 | 3,300 | 12 | 4,500 |
| 27 | 2 | Miller Road - East of Templeton Street | 0 | 0 | 15 | 15 | 100 | 775 | 3,300 | 65 | -775 |
| 27 | 4 | Canada Line | 675 | 550 | 800 | 5,500 | 54,000 | - | - | 26 | - |
| 116 | All | University of British Columbia | 6,500 | 3,600 | 7,000 | 37,000 | 77,000 | 33,000 | 70,000 | 6 | 4,000 |
| 116 | 2 | West 4th Avenue - West of Drummond Drive | 1,300 | 425 | 1,200 | 6,500 | 11,000 | 3,700 | 9,500 | 24 | 2,800 |
| 116 | 3 | University Boulevard - West of Blanca Steet | 2,300 | 1,850 | 2,800 | 15,000 | 31,000 | 16,000 | 30,000 | 8 | -850 |
| 116 | 4 | 16th Avenue - West of Blanca Street | 1,150 | 475 | 850 | 5,500 | 10,500 | 4,300 | 8,500 | 27 | 975 |
| 116 | 5 | SW Marine Drive - East of UBC Campus | 1,800 | 875 | 1,950 | 10,500 | 23,500 | 9,500 | 21,000 | 17 | 1,000 |

4. TREND REPORT

This section examines the growth in daily and peak period automobile trips, as well as the change in auto occupancies and sustainable modes between 2008 and 2011. Overall changes are reviewed, followed by a more detailed review of the screenlines which represent major regional boundaries. It should be noted that while 2008 comparative data is available to calculate peak hour traffic volumes statistics, it is not available for vehicle classifications or occupancies.

4.1. 24-HOUR VEHICLE VOLUMES

Overall 24-hour traffic volumes have remained stable since 2008

Combined regional bi-directional 24-hour traffic volumes have not changed significantly from 2008 levels based on a comparison of surveyed stations which are common to both the 2008 and 2011 screenline surveys.

While volumes are almost unchanged at the regional level, the 2011 survey shows that this is a result of increased volumes in the outlying areas, which are offset by decreases in volumes mostly near the central core of Metro Vancouver. Screenline volumes in Langley and the Fraser Valley reflect the growth in these communities and resultant increases in travel demand:

- The screenline with the greatest percent increase in traffic volume is the Point Roberts Screenline which increased 69% from 3,100 vehicles per day to over 5,000.

- The only screenlines in the South of Fraser not following this trend were 284th Street decreasing by 9% or 2,400 vehicles, Highway 9 – Agassiz decreasing by 1%, or 130 vehicles, and Highway 1 and 7 – Hope decreasing by 7% or 975 vehicles.

At major screenlines closer to the urban core, daily vehicle volumes remained stable or decreased. This includes the Taylor Way (-2%), False Creek (-2%), Main Street (-12%)⁴, Boundary Road (-2%), and North Arm Fraser River (-1%) screenlines.

Screenlines crossed by inter-regional trips into and out of Metro Vancouver showed the greatest decreases in traffic volumes. These screenlines include Highway 99 – Squamish (-7%), Highways 1 and 7 – Hope (-7%), and Tsawwassen (-16%).

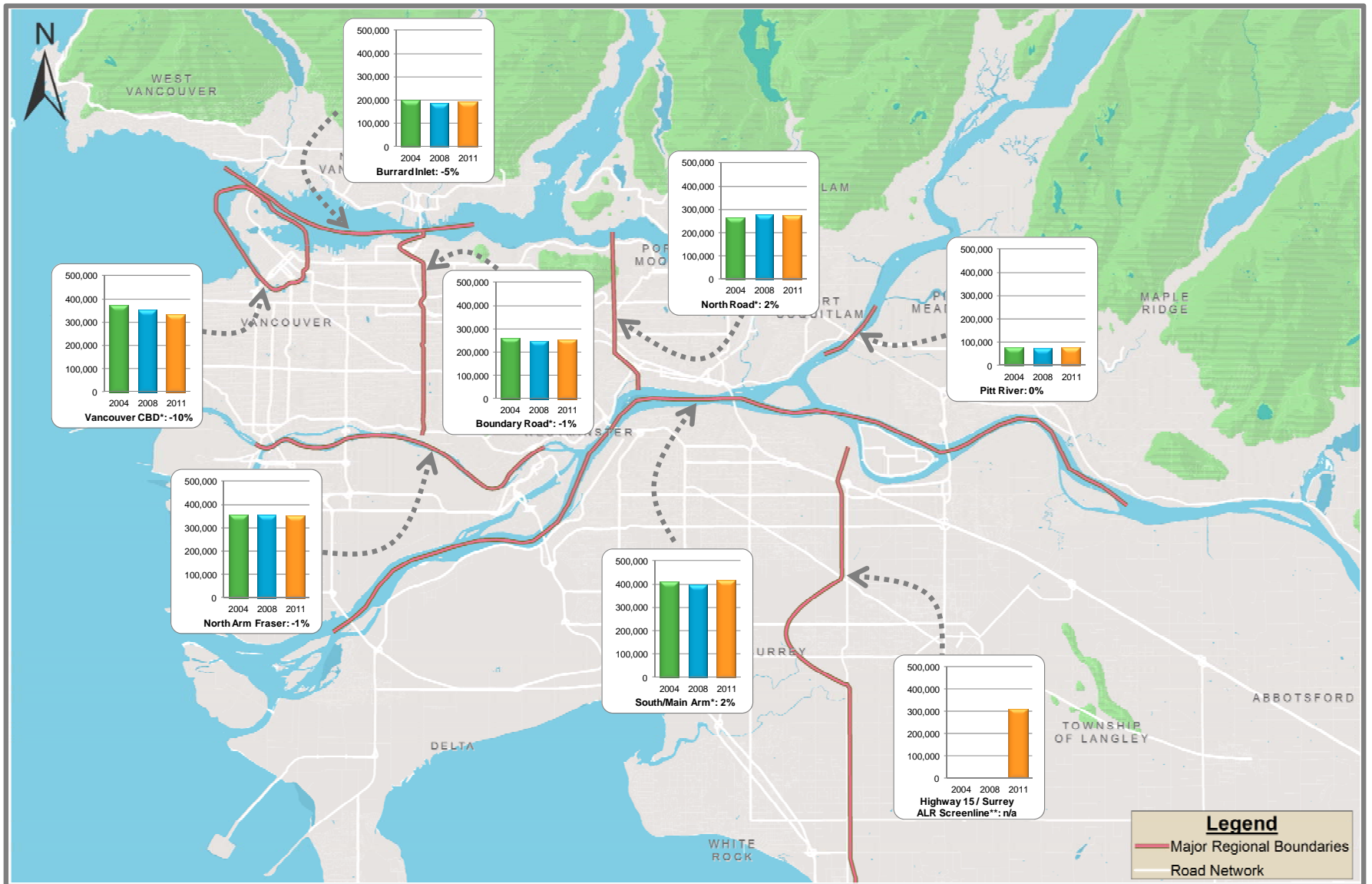
Screenlines crossed by international trips across the Canada-US border crossings increased substantially since 2008. These screenlines include Point Roberts (+69%), Highway 15 and 99 U.S. Border (+50%), Highway 13 U.S. Border (+41%), and Highway 11 U.S. Border (+23%).

Figure 6 shows the change in 24-hour volumes at the major regional screenlines with volumes for 2011, 2008 and 2004. The general trend going back to 2004 shows only a marginal increase vehicle volumes crossing major regional screenlines.

Please refer to **Appendix B** for illustrations of all screenlines including where count station locations have changed.

⁴ Note that the location of the Main Street screenline was modified slightly since 2008, this could have some affect on the surveyed traffic crossing it.

Figure 6 – 24-Hour 2-Way Traffic Volumes Crossing Major Regional Boundaries



4.2. PEAK HOUR VEHICLE VOLUMES

Similar to the 24 hour volumes, Peak hour volumes have generally decreased in areas closer to the Central Business District, whereas they have increased in outlying areas.

Figures 7 and 8 show the change in morning and afternoon peak hour volumes at major regional screenlines.

In most screenlines both the AM and PM traffic volumes stayed similar, with slight fluctuations either way, to those recorded in 2008. At the same time, there was a notable decrease in traffic, during both the AM and PM peak periods, through the Burrard Inlet and the Vancouver CBD Screenlines. Conversely, there was a significant increase in traffic volumes through the South/Main Arm Screenline during peak periods.

The Burrard Inlet Screenline decreased by 4% and 7% in the morning and afternoon peak periods respectively. The Vancouver CBD Screenline decreased by 4% and 12% in the morning and afternoon peak periods respectively. The Boundary Road, North Road and North Arm Fraser Screenlines only changed marginally. The South/Main Arm Screenline increased by 8% and 6% in the morning and afternoon peak periods respectively while the Pitt River Screenline increased by 9% in the morning peak and decreased by 4% in the afternoon peak period.

Construction activity related to the Highway 1/Port Mann and South Fraser Perimeter Road construction may have caused some disruptions to traffic flows. Generally, however, the patterns are fairly consistent with those observed back to 2004.

Figure 7 – Morning Peak Hour 2-Way Traffic Volumes Crossing Major Regional Boundaries

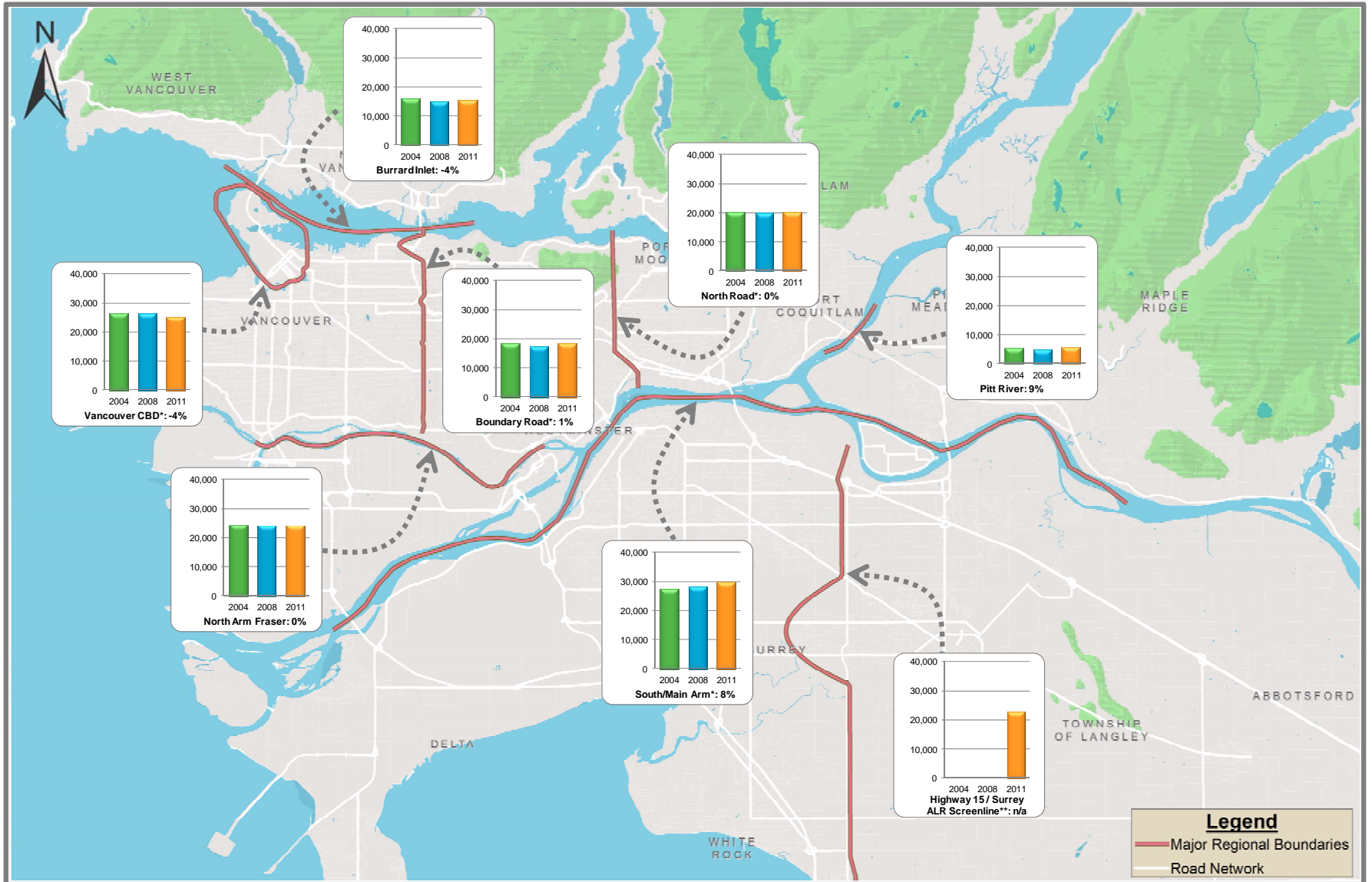
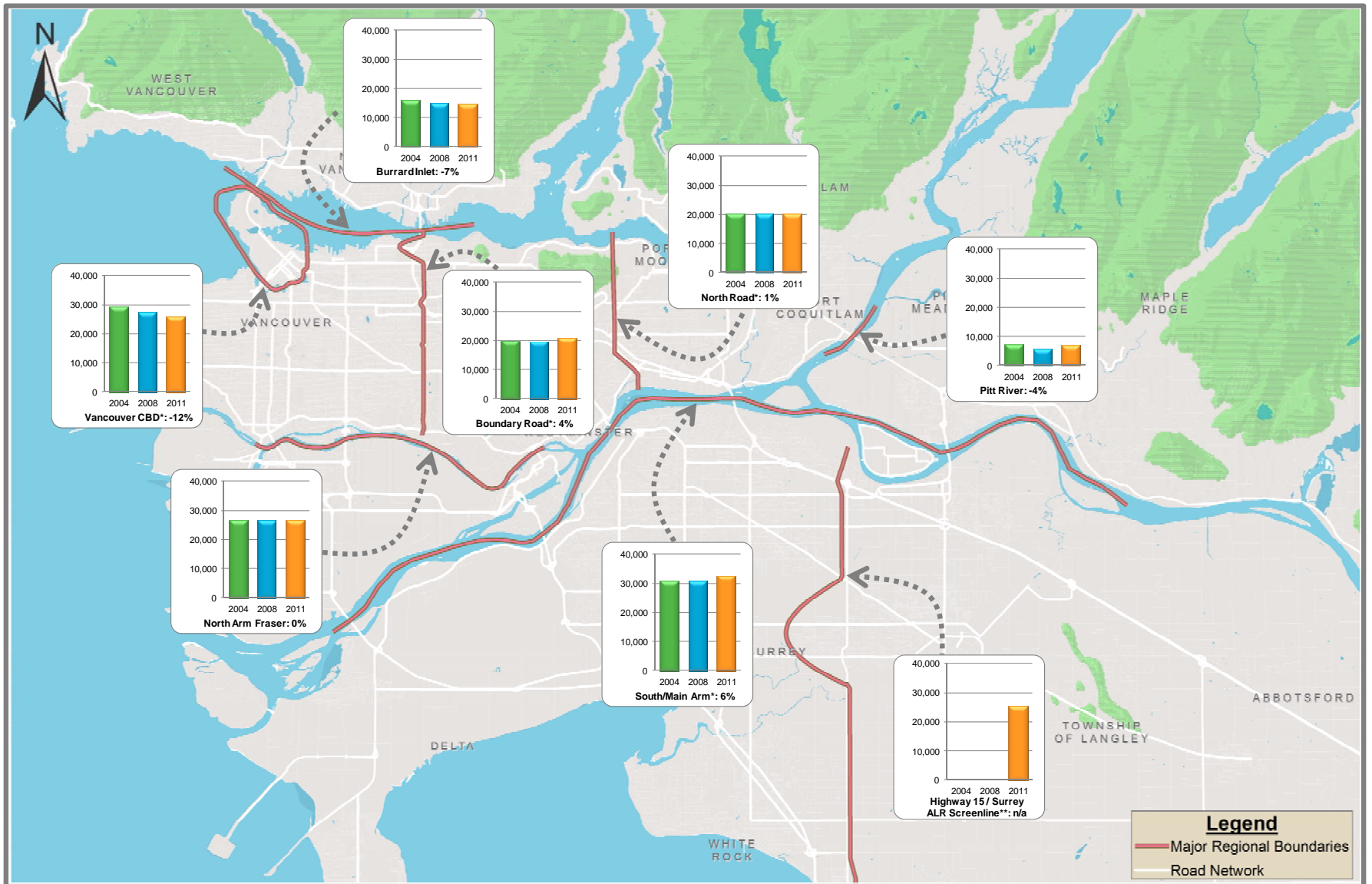


Figure 8 – Afternoon Peak Hour 2-Way Traffic Volumes Crossing Major Regional Boundaries



4.3. AUTO OCCUPANCIES AND SUSTAINABLE MODES

Overall auto occupancy rate in region has remained unchanged.

Auto occupancies typically vary by location, time of year and time period. Locations with a high percentage of local trips tend to have higher occupancies as parents drive children to school and other activities. Similarly, in the summer, families often travel together and occupancies will increase accordingly, particularly during the off-peak periods. Nevertheless, as the screenline data represents primarily longer distance trips such as commuter travel, the changes in occupancy are typically more stable throughout the year. This is particularly true of the morning and afternoon peak hour commuter periods.

Overall daily auto occupancy has remained unchanged at 1.24 occupants per vehicle since 2008 over the 16-hour Control Period. Change over the 9-hour Peak period was similar with no change to the regional average of 1.22 occupants per vehicle. The highest occupancy throughout the day occurred during the afternoon peak period (1.28), followed by the midday period (1.27), and the morning peak hour showed the lowest occupancy (1.17). Auto occupancy increased at 48 of the 84 stations comparable to 2008, stayed the same (within 1% of the 2008 occupancy rate) at 13 stations and decreased at 23 stations.

The two stations with the highest 2011 observed occupancies were Highway 17 north of Tsawwassen Ferry Terminal (1.56), and Highway 15 and 99 – U.S Border (1.40).

The combined Central Business District Screenline had a slightly higher than average occupancy rate of 1.25, while the South/Main Arm Fraser Screenline had a lower rate at 1.22.

Both walking and cycling appear to have increased as a travel mode of choice. Two stations in the downtown core area showed large pedestrian volume increases: Powell Street east of Carrall Street from 1,451 to 2,497, and Cordova Street east of Carrall Street from 2,416 to 3,076⁵.

There were large cyclist volume increases on Dunsmuir Street east of Carrall Street, from 207 to 1,125 likely due to the separated bike lane on the Dunsmuir Viaduct, and the Cambie Bridge, from 477 to 1,075. The highest observed cyclist volumes were on the Burrard Bridge at 1,934 and Seawall east of Carrall Street at 1,799. Cyclist volumes are weather dependent so some caution should be taken when using these numbers.

4.4. PEAK SPREADING

The Peak Period in the region in 2011 remains unchanged since 2008.

Increases in off-peak travel are indicative of changing departure times, in response to congestion, delays and overall travel time in order to arrive at their destination on time. Volumes across all comparable stations for the 2011 survey year indicate a more limited change from 2008 than previous surveys for peak volume as well as peak spreading.

⁵ The changes in recorded walking volumes at these stations could be affected by the relocation of the screenline from Main Street to Carrall Street.

In addition to substantial overall growth between 1992, 1996 and 2004 survey years, these surveys recorded large increases in off-peak travel as well. Volume distribution changes between different periods of the day for the 2011 survey were more negligible by comparison. The 2011 survey recorded a slight increase midday traffic as a share of daily trips, from 34.1% to 34.2%, compared to the 2008 survey. The survey also recorded a similarly slight increase from, 28.4% to 28.5%, during the afternoon peak period. The early morning and late evening periods, on the other hand, had slight decreases in their share of daily trips while the morning peak remained unchanged. The observed change in the share of trips between time period between the 2011 and 2008 surveys noticeably smaller than was found in prior surveys when peak spreading between 1992 and 1996 was approximately 2.5 hours and between 1996 and 2004 about 2.25 hours. **Table 12** details the share of daily volume for each survey year dating back to 1992.

While the vehicle volumes during the 6-hour period between morning and afternoon peaks account for 34.2% of the daily volume, this traffic is less concentrated than the share of the 3-hour morning Peak Period (17.9%) and 3-hour afternoon Peak Period (28.5%) traffic. If the period volumes are averaged by dividing the volume by the number of hours, the distribution changes to reflect the assumptions of higher traffic during the peak periods. The afternoon peak period has the highest share of traffic at 31.7%, while morning Peak Period volume was 26.5%, the Midday Period share 25.3%, the Late Evening Period share 12.9% and the Early Morning Period share 3.6%. As such, the afternoon peak period is when the highest number of vehicles are observed on the region’s roadways.

Table 13 illustrates the total volume and share of volume for various periods of the day.

Table 12 – Vehicle Volume Time Period Distribution by Survey Year

| Year | Early Morning 00:00 - 06:00 | Morning Peak 06:00 - 09:00 | Midday 09:00 - 15:00 | Afternoon Peak 15:00 - 19:00 | Late Evening 19:00 - 24:00 |
|------|--------------------------------|-------------------------------|-------------------------|---------------------------------|-------------------------------|
| 2011 | 4.9% | 17.9% | 34.2% | 28.5% | 14.5% |
| 2008 | 5.0% | 17.9% | 34.1% | 28.4% | 14.6% |
| 2004 | 4.8% | 17.9% | 33.9% | 28.7% | 14.7% |
| 1996 | 4.5% | 18.2% | 33.4% | 28.7% | 15.3% |
| 1992 | 3.9% | 18.0% | 33.4% | 29.1% | 15.6% |

Table 13 – 2011 Volumes by Time Period

| Time Period | Time of Day | Total Volume | Total Volume Share | Average Hourly volume | Average hourly Volume Share |
|----------------|-----------------|------------------|--------------------|-----------------------|-----------------------------|
| Early Morning | 00:00-06:00 | 172,000 | 4.9% | 29,000 | 3.6% |
| Morning Peak | 06:00 - 09:00 | 631,000 | 17.9% | 210,000 | 26.5% |
| Midday | 09:00 - 15:00 | 1,203,000 | 34.2% | 200,000 | 25.3% |
| Afternoon Peak | 15:00 - 19:00 | 1,005,000 | 28.5% | 251,000 | 31.7% |
| Late Evening | 19:00 - 24:00 | 510,000 | 14.5% | 102,000 | 12.9% |
| Daily | 24 Hours | 3,521,000 | 100% | 147,000 | 100% |

Figure 9 shows the two-way hourly vehicle volumes for all comparable screenline stations to illustrate the changes in vehicle volumes and peak spreading. As illustrated, there is virtually no change in terms of the observed peak periods comparing 2011 with 2008 patterns.

Figure 9 – Comparison of Peak Spreading by Year

