



TransLink

2016 Transit Service Performance Review



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Executive Summary

TransLink manages Metro Vancouver's integrated regional transit network and regularly reviews and modifies transit service to promote system efficiency, effectiveness and productivity. Our focus is on improving the customer experience and increasing ridership by maximizing the use of resources.

The 2016 Transit System Performance Review (TSPR) is a comprehensive review of ridership and service productivity for bus, SeaBus, SkyTrain and West Coast Express measured from January to December 2016. It informs the management of our integrated regional transit network and guides decision-making regarding the allocation of transit service resources.

We gather data from multiple sources

Ridership data in the TSPR was collected from a number of sources including:

- Automated passenger counter (APC) units on buses
- Turnstiles at SeaBus terminals
- Fare gates at SkyTrain stations
- Compass Card validators and selective manual counts at West Coast Express stations

TransLink completed the phased roll-out of Compass in 2016, and fare gates closed completely in July. Compass taps are a new source of system-wide ridership data. Compass data is also used to analyze detailed bus journeys or trips, and to understand travel patterns.

On a sub-regional and route level, the TSPR will continue to use bus APC and SeaBus turnstile data because they include all boarding and alighting (exiting) passengers. On bus, Compass only requires a tap-on, not a tap-off. APC data provides an accurate understanding of passenger loads and crowding.

Compass data is now used for SkyTrain and West Coast Express because tapping Compass Cards or Compass Tickets are required to pass through fare gates.

Service changes made to both bus and SkyTrain in 2016

In 2015 we consulted the public on 85 bus service changes as part of the Transit Network Review. Most of the changes implemented between December 2015 and September 2016 were the result of this review. The following bus routes, grouped by sub-region, changed significantly in 2016.

Burnaby/New Westminster: C3, C4, C8, C9

Ladner/South Delta/Tsawwassen: 601, 609, 620

North Shore: 242

South of Fraser: 320, 341, 342, 394, 501, 502, 531, 590, 595, C63

Vancouver/UBC: 5, 26, 43, 49, 480, C19, C20, N6, N8, N16, N20, N22

Further details on these changes are included for each route in Appendix C.

The impacts of bus route changes implemented on December 19, 2016, including the Evergreen-related bus changes, are not recorded in this report, but will be in the 2017 TSPR.

In October 2016, the service pattern for the Expo and Millennium lines changed in preparation for the Millennium Line Evergreen Extension. The 2016 TSPR includes limited data for the six new stations, which opened on December 2. These changes are described further in Appendix E.

The TSPR helps inform service improvements for the 10-Year Vision

The 2015 TSPR identified that almost half of bus revenue hours with chronic overcrowding occurred outside weekday peak periods. Further analysis determined which routes and time periods experienced the most crowding and required frequency increases as soon as possible.

That TSPR ridership data led to the list of bus service improvements included in Phase One of the 10-Year Vision, which began rolling out April 2017. This TSPR covers 2016 performance, before any Phase One improvements were implemented.

REGIONAL HIGHLIGHTS

Ridership growth in 2016 was the largest since 2010

Annual system-wide boardings increased by 4.5 per cent to a record 384.8 million in 2016. Annual journeys also increased by 4.5 per cent to 233 million.

Ridership growth in 2016 was the largest since 2010, when the region hosted the Olympic Winter Games. This growth was likely due to strong economic activity, an increase in transit service hours, and the launch of the Compass Card. Regular updates on system-wide boardings and journeys are available in the new [Accountability Centre](#) on the TransLink website.

System-wide ridership is measured in boardings and journeys. In 2016 the method of calculating ridership changed to reflect actual usage from Compass fare media and cash transactions at fareboxes on buses.

- Boarding: each time a passenger enters a fare paid zone using Compass fare media or other proof of payment
- Journey: a complete transit trip using Compass fare media or proof of payment, regardless of the number of transfers

Bus ridership increased throughout the day, particularly during evenings and on Saturdays

Bus ridership was generally up throughout the day, but some of the highest growth was in the evenings from 6-9 p.m. every day. Evening bus ridership was up 6 per cent on weekdays, 7 per cent on Saturdays, and 5 per cent on Sundays.

Over the entire day, Saturday bus ridership across Metro Vancouver experienced the largest growth rate, with a 7 per cent increase. Weekday bus ridership grew by 5 per cent and Sunday/holiday bus ridership remained stable.

All three SkyTrain lines experienced ridership growth

Canada Line boardings grew by 5.5 per cent, while Expo and Millennium lines grew by 4.1 per cent. All three SkyTrain lines experienced similar ridership trends throughout the year: steady growth peaking in September and levelling off in the last quarter.

The growth in Canada Line boardings was largely due to increased economic activity along the line, including new development adjacent to stations, increased airport passenger volumes and record high tourism in 2016. Marine Drive Station saw the highest percentage growth along the Canada Line, with annual boardings growing by 37 per cent in 2016.

Expo Line stations in downtown Vancouver continue to be among the busiest in the system, especially during peak periods. For example, Burrard Station had 5,700 entries/exits during the peak morning hour from 8-9 a.m. on an average weekday in 2016. That's more passengers in one hour than some SkyTrain stations see all day!

New Evergreen stations had steady ridership despite record snowfall

The Evergreen Extension opened December 2, 2016, the same month the region experienced one of the snowiest and coldest winters on record. The six new Evergreen stations had a combined total of 27,000 entries/exits per weekday over the first four weeks of service in December 2016.

Further development in the Northeast Sector, bus service expansion through Phase One of the 10-Year Vision, and increased awareness of travel options are expected to contribute to increased ridership on the Evergreen Extension.

SeaBus boardings declined slightly due to lower summer ridership

SeaBus boardings declined in 2016 by 2.8 per cent compared to 2015. There were approximately 450,000 boardings per month on average on the SeaBus throughout 2016. SeaBus boardings typically peak in July. Likely due to the summer's unseasonably high rainfall last year, the peak in summer ridership was lower than previous years and as a result, annual SeaBus ridership declined slightly.

SUB-REGIONAL BUS PERFORMANCE

All sub-regions experienced an increase in bus boardings and service hours between 2015 and 2016, as summarized below. The top 5 routes in annual boardings by sub-region are listed in Figure 4 in Appendix A. Bus boardings are counted using on-board automated passenger counter (APC) units.

Burnaby/New Westminster

Annual Boardings: up 1.3 million (4%)

Annual Hours: up 10,000 (2%)

Service hours were added to maintain schedule reliability on routes affected by road congestion. Service was also added to community shuttle routes, specifically the C3.

Ladner/South Delta/Tsawwassen

Annual Boardings: up 100,000 (5%)

Annual Hours: up 1,000 (1%)

Most of the service and ridership growth was on the commuter-oriented routes connecting to the Canada Line.

Maple Ridge/Pitt Meadows

Annual Boardings: up 100,000 (4%)

Annual Hours: up 1,000 (1%)

Service hours increased slightly to maintain schedule reliability on routes affected by construction related to the Millennium Line Evergreen Extension.

North Shore

Annual Boardings: up 800,000 (4%)

Annual Hours: up 4,000 (1%)

Ridership growth occurred on a number of routes across the North Shore, especially on the 240 and 250, which are all-day frequent routes serving downtown Vancouver.

Northeast Sector

Annual Boardings: up 700,000 (5%)

Annual Hours: up 4,000 (1%)

Service hours increased slightly to maintain schedule reliability on routes affected by construction related to the Millennium Line Evergreen Extension.

Richmond

Annual Boardings: up 600,000 (3%)

Annual Hours: up 5,000 (2%)

Ridership growth occurred mainly on routes 301, 403, 407, and 430.

South of Fraser

Annual Boardings: up 3.7 million (10%)

Annual Hours: up 12,000 (2%)

The South of Fraser experienced a 10% increase in bus ridership in 2016 – the highest percentage growth in the region. Since 2012, annual bus boardings have grown by 6.7 million – nearly the total of all the other seven sub-regions' growth combined (7.1 million).

Vancouver/UBC

Annual Boardings: up 4.5 million (3%)

Annual Hours: up 21,000 (1%)

Vancouver and UBC experienced a significant increase in bus boardings over the last year. This has been the highest annual increase in the last four years.

ROUTE AND STATION HIGHLIGHTS

Increased boardings and reduced weekend crowding followed service improvements on the 49

Route 49, which travels between Metrotown and UBC, has the fourth-highest annual boardings and has the second-highest average peak passenger load in the bus system. It experienced two service changes in 2016:

- In June, TransLink straightened the routing by discontinuing service along 54th Avenue, as recommended in the 2015 Transit Network Review.
- In September, weekend capacity was increased by using larger 60-foot articulated buses and extending all trips to UBC (from Dunbar), providing a consistent service pattern seven days a week.

Between fall 2015 and fall 2016, there was an increase in daily boardings on Saturdays (up 11 per cent to 16,100 boardings) and Sundays (up 14 per cent to 13,200 boardings). Adding this capacity eliminated chronic overcrowding on the weekends, providing a better customer experience.

In September 2017, as part of Phase One of the 10-Year Vision, TransLink will introduce more improvements on the 49 to increase frequency throughout the day on weekdays.

Busiest stations: Waterfront and Commercial–Broadway

On an average weekday in 2016, Waterfront Station had a total of 94,400 entries/exits (people passing through the fare gates), more than any other station in the network. The station is a strong regional centre for customers with

access to two SkyTrain lines, West Coast Express and SeaBus, plus many connecting bus routes on nearby streets.

Commercial–Broadway Station had 49,000 average weekday entries/exits in 2016. Customers have access to two SkyTrain lines here, plus three of the busiest bus routes in the network, including the 99 B-Line.

The above numbers do not include bus boardings or connections behind the fare gates (for example, between SeaBus and Expo Line), which increase the overall passenger activity at Waterfront and Commercial–Broadway stations.

The three next busiest stations by average weekday entries/exits in 2016 were:

- Granville (43,700)
- Burrard (42,800)
- Metrotown (40,400)

To put these numbers in perspective, the Vancouver International Airport had an average of 60,900 airline passengers per day in 2016.

Ridership growth on 96 B-Line contributed to significant sub-regional growth

The South of Fraser sub-region experienced significant growth in the last four years, with more than a 20 per cent increase in annual boardings. This is an overall increase of 6.7 million boardings since 2012.

Much of this increase can be attributed to the 96 B-Line, which serves King George Boulevard and 104 Avenue. It has experienced a strong, consistent upward ridership trend since the route's introduction in September 2013. Boardings were up 13-15 per cent between 2015 to 2016 on both weekdays and weekends. The 96 B-Line had the largest increase in annual boardings (up 570,000) of any route in the entire Metro Vancouver region in 2016.

NEXT STEPS

Informed by the 2015 TSPR, bus, SkyTrain and SeaBus service improvements that are part of Phase One of the 10-Year Vision began rolling out in January 2017. These represent Metro Vancouver's biggest transit service expansion in nearly a decade and are an important first step in creating the transportation system our growing region needs to meet future demand. Phase One will see an investment of more than \$2 billion in expanded transit service, transit infrastructure, and improvements for roads, cycling, and walking.

The 2016 TSPR and subsequent planning work will help inform specific projects that will be included in Phase Two of the 10-Year Vision.

Each section of the subsequent TSPR report is divided between modes. The bus route summaries (Appendix C) are in numerical order. This is followed by the SeaBus summary (Appendix D) and SkyTrain and West Coast Express summaries (Appendix E and F). The full TSPR can be found on the TransLink website at www.translink.ca/tspr.