

TransLink

# 2018 Transit Service Performance Review



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# Executive Summary

TransLink manages Metro Vancouver's integrated regional transit network. We review and update transit service quarterly to improve the system. Our focus is on improving the customer experience, increasing ridership, and maximizing our investment of public resources.

Our annual Transit Service Performance Review (TSPR) measures ridership, cost, utilization, and reliability of bus, SeaBus, SkyTrain, West Coast Express, and HandyDART. It informs how we manage the regional transit network and allocate resources. This is the first TSPR to include reporting on HandyDART services.

Starting with the 2017 TSPR, we release detailed data in interactive online dashboards with downloadable data. Links to these tools can be found at [translink.ca/tspr](https://translink.ca/tspr).

## We implemented more services identified in the Mayors' 10-Year Vision

Phase One of the 10-Year vision was approved in 2016 with service increases funded for 2017-2019. 2018 was a smaller year for service increases, but included the arrival of new vehicles to expand service further in 2019. The 2018 service increases included:

- **+75,000 bus** annual service hours
- **+48,000 HandyDART** vehicle trips available

The 75,000 bus annual service hours included 53 improvements on 42 routes in all sub-regions to improve reliability and reduce overcrowding.

## We continued to break records in 2018, leading Canada and the United States in transit ridership growth

2018 was another record-breaking year for TransLink with 437.4 million annual boardings (+7.1% year-over-year [YOY]) and 262.6 million journeys (+6.0% YOY) system-wide. In fact, ridership grew 18.4% over the last three years (annual boardings 2015-2018).

## Ridership increased year-over-year on all modes

- **+8.0%** on **bus** (+19.9 million boardings)
- **+6.0%** on **SeaBus** (+0.4 million boardings)
- **+5.7%** on **SkyTrain** (+8.7 million boardings)
  - **+5.9%** on **Expo/Millennium Line** (+6.2 million boardings)
  - **+5.3%** on **Canada Line** (+2.5 million boardings)
- **+7.0%** on **West Coast Express** (+0.2 million boardings)
- **+5.8%** total **HandyDART** boardings (+0.08 million boardings)<sup>1</sup>

## However, ridership growth led to wide-spread overcrowding throughout the region

The [10-Year Vision](#) bus and SkyTrain improvements in 2017 and 2018 initially helped alleviate some overcrowding. However, ridership increased faster than we put out new service and as a result overcrowding increased across the region.

In 2018, we had 52 bus routes with consistent, sustained overcrowding (at least one hour with overcrowding on an average bus trip), up from 38 routes before the 2017 and 2018 improvements. All three SkyTrain lines also experienced overcrowding.

<sup>1</sup> See HandyDART (p. 13) for explanation of trips versus boardings

**In all sub-regions we increased bus annual service hours and experienced bus ridership growth, with the largest ridership growth in the Southeast<sup>2</sup> (15.6%)**

The percentage growth for annual bus boardings outpaced the growth in bus service hours provided in all sub-regions except Maple Ridge/Pitt Meadows. All sub-regions had a larger year-over-year (YOY) increase in annual boardings in 2018 than in 2017.

On top of the annual service hours added throughout 2018, it was the first full year of the improvements introduced throughout 2017.

Burnaby/New Westminster	Annual Bus Boardings	Annual Bus Service Hours
2018 YOY	+1.96 million <b>+5.5%</b>	+22,000 <b>+3.3%</b>
2017 YOY	+0.76 million +2.2%	+6,500 +1.0%

Maple Ridge/Pitt Meadows	Annual Bus Boardings	Annual Bus Service Hours
2018 YOY	+0.07 million <b>+2.2%</b>	+22,000 <b>+8.8%</b>
2017 YOY	-0.01 million -0.5%	+7,000 +6.2%

Most of the additional service hours were for the new 733 and 741 routes. The Maple Ridge-Pitt Meadows Area Transportation Plan (commenced in 2018) will guide improvements to other routes, which will help build ridership.

North Shore	Annual Bus Boardings	Annual Bus Service Hours
2018 YOY	+0.74 million <b>+3.3%</b>	+12,200 <b>+2.3%</b>
2017 YOY	+0.36 million +1.6%	+14,700 +2.8%

Northeast Sector	Annual Bus Boardings	Annual Bus Service Hours
2018 YOY	+0.63 million <b>+5.7%</b>	+15,500 <b>+3.5%</b>
2017 YOY	-3.18 million -22.5%	+28,100 +6.8%

Bus ridership increased after the large dip in 2017 (-22.5%) from customers shifting to the Evergreen Extension SkyTrain from buses like the 97 B-Line.

Southeast	Annual Bus Boardings	Annual Bus Service Hours
2018 YOY	+6.77 million <b>+15.6%</b>	+47,100 <b>+4.8%</b>
2017 YOY	+3.31 million +8.3%	+34,800 +3.7%

This phenomenal ridership growth contributed to widespread overcrowding on many routes in the Southeast (also known as South of Fraser).

Southwest	Annual Bus Boardings	Annual Bus Service Hours
2018 YOY	+1.84 million <b>+8.8%</b>	+24,200 <b>+4.9%</b>
2017 YOY	+1.30 million +6.6%	+24,600 +5.3%

In 2018, the Southwest Area Transport Plan (SWATP) was finalized, and we began implementing projects. The new Southwest sub-region includes both Richmond and Ladner/South Delta/Tsawwassen.

Vancouver/UBC	Annual Bus Boardings	Annual Bus Service Hours
2018 YOY	+6.79 million <b>+4.8%</b>	+60,500 <b>+3.1%</b>
2017 YOY	+4.11 million +3.0%	+23,900 +1.2%

<sup>2</sup> The Southeast sub-region includes North Delta, City of Surrey, City of Langley, Township of Langley, and City of White Rock. See the map on p. 14

# Summary of Highlights

## We use the TSPR to inform and track service improvements in the 10-Year Vision

The [10-Year Vision](#) is implemented through investment plans (e.g. Phase One). Findings in the TSPR helped develop the service improvements included in these investment plans.

The 2017 TSPR was the first system-wide assessment of the implemented 10-Year Vision service improvements. This and future TSPRs will summarize the impact of the 10-Year Vision on ridership, crowding, productivity, and other measures.

## We gather data from multiple sources

Ridership data in the TSPR is collected from several sources including:

- **Bus:** Automated passenger counters (APC)
- **SeaBus:** Turnstiles
- **SkyTrain:** Compass fare gates
- **West Coast Express:** Compass validators
- **HandyDART:** Scheduling software

Given the different data sources, the sum of route-level boardings should not be compared to system-wide boardings.

We use Compass taps as the primary source of system-wide ridership data. Compass data is also used for SkyTrain and West Coast Express, because tapping Compass cards is required for both entering and exiting fare-paid zones.

On a sub-regional and route level, we use bus APC and SeaBus turnstile data for performance reporting. These sources include both boarding and alighting (exiting) passengers, thus providing a better picture of passenger loads and crowding. Bus passengers are not required to tap-out with Compass cards and some pay with cash instead.

<sup>3</sup> See HandyDART (p. 13) for explanation of *trips* versus *boardings*

## REGIONAL HIGHLIGHTS

### We continued 10-Year Vision service increases throughout 2018

Phase One of the 10-Year vision was approved in 2016 with service increases funded for 2017-2019. 2018 was a smaller year for service increases, but included the arrival of new vehicles to expand service further in 2019.

The 2018 improvements continued expansion throughout the region, including:

- **+75,000 bus** annual service hours
- **+48,000 HandyDART** vehicle trips available

The 75,000 bus annual service hours included 53 improvements on 42 routes in all sub-regions to improve reliability and reduce overcrowding.

#### **BUS ANNUAL SERVICE HOURS:**

We use annual service hours (ASH) to measure bus improvements. ASH is the total time the bus is operating, from leaving the depot until returning, for the full year.

#### **HANDYDART VEHICLE TRIPS:**

We use HandyDART vehicle trips to measure HandyDART improvements. The service expansion identified in the 10-Year Vision and funded in the Investment Plans only include trips on HandyDART vehicles, not taxis<sup>3</sup>.

## We saw unprecedented ridership growth region-wide on all modes in 2018

In 2018, ridership in Metro Vancouver grew by 7.1% for boardings and 6.0% for journeys over 2017. This growth is our largest annual increase ever, bringing system-wide ridership to a record of 437.4 million boardings and 262.6 million journeys.

Annual ridership grew across all modes including:

- **+8.0%** on **bus** (+19.9 million boardings)
- **+6.0%** on **SeaBus** (+0.4 million boardings)
- **+5.7%** on **SkyTrain** (+8.7 million boardings)
  - **+5.9%** on **Expo/Millennium Line** (+6.2 million boardings)
  - **+5.3%** on **Canada Line** (+2.5 million boardings)
- **+7.0%** on **West Coast Express** (+0.2 million boardings)
- **+5.8%** total **HandyDART** boardings (+0.08 million boardings)

We share monthly updates on system-wide boardings and journeys at [translink.ca/accountabilitycentre](https://translink.ca/accountabilitycentre).

**Boardings** are measured as each time a passenger enters a fare paid zone using Compass fare media or other proof of payment; transfers are counted as additional boardings.

**Journeys** are measured as a complete transit trip using Compass fare media or other proof of payment, regardless of the number of transfers.

## MODAL HIGHLIGHTS



### Bus: Overcrowding increased across the region, indicating that ridership growth is outpacing service increases

Phase One bus investments in 2017 and 2018 increased bus service by 6% over 2016, while bus boardings were up 11.5%. This resulted in more overcrowding on bus routes region-wide.

Overcrowding can occur for many reasons, including a surge of passengers (e.g. a school dismissal), trip cancellations, major SkyTrain disruptions, or generally high ridership.

**Overcrowding** occurs when there are more passengers on board than the vehicle's practical capacity, according to our Transit Service Guidelines. In other words, the bus is more than 100% full.

**Trips with overcrowding** is a new metric in the 2018 TSPR dashboard. It captures all instances of overcrowding because each trip is counted separately.

**Consistent, sustained overcrowding** occurs on a bus route when the demand is high throughout an hour so that the average trip for that hour has overcrowding. Because this type of overcrowding occurs everyday or almost everyday, it is where we focus our investments for overcrowding.

In fall 2018, 80% of all bus routes across the region had at least one trip with overcrowding on weekdays, and about half of all routes had at least one trip with overcrowding on weekends.

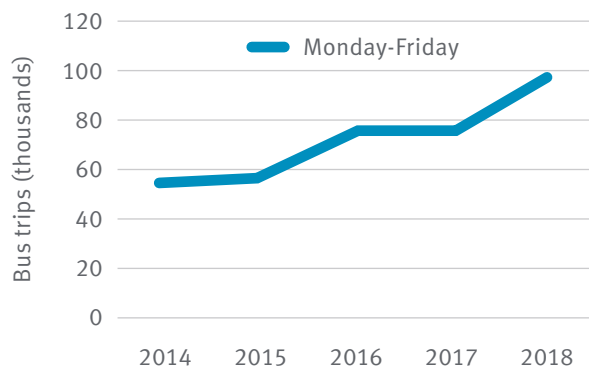
**Since 2014, bus trips with overcrowding increased on all day types and in all sub-regions.** Due to the difference in scale, weekdays are shown separately from weekends in Figures 1 and 2.

the Northeast Sector decreased. All other sub-regions have had a steady increase in trips with overcrowding, including Maple Ridge/Pitt Meadows (despite being small compared to other sub-regions in Figure 3).

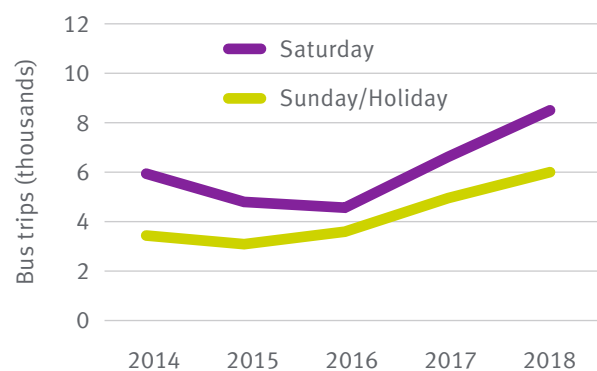
**The number of trips with overcrowding in the Southeast sub-region more than doubled between fall 2017 and fall 2018.** After the 2016/2017 Evergreen Extension bus network integration, trips with overcrowding in

**While most routes have trips with overcrowding, only some routes have consistent, sustained overcrowding** that we can address with increased service, as discussed in the next section.

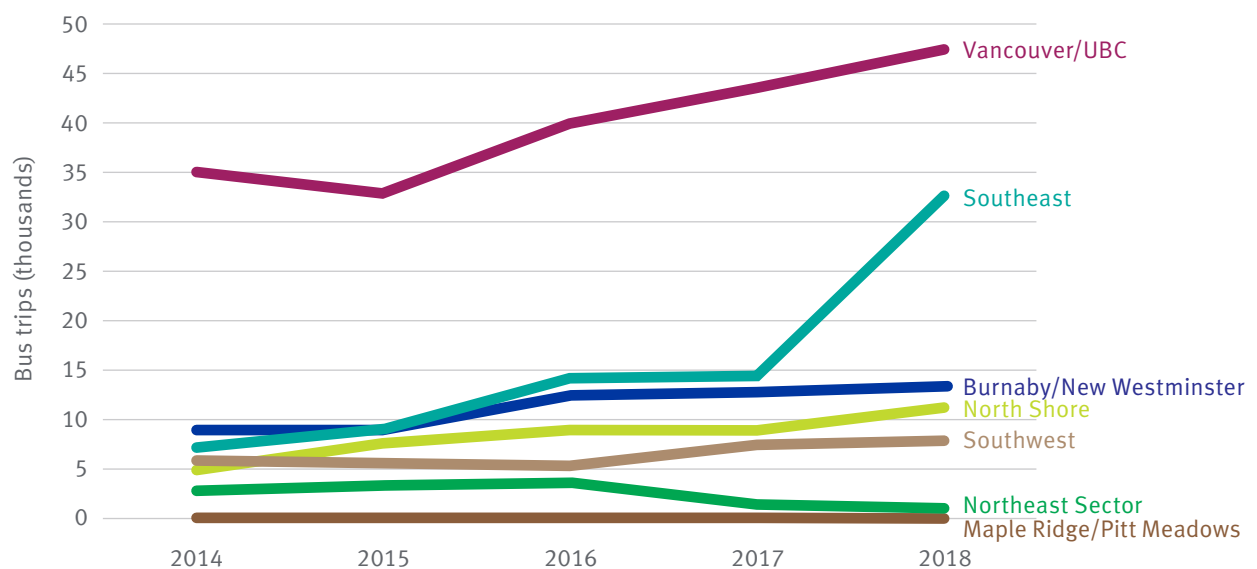
**Figure 1: Total fall weekday bus trips with overcrowding**




**Figure 2: Total fall weekend bus trips with overcrowding**



**Figure 3: Total fall bus trips with overcrowding by sub-region**



 **Bus: One-quarter of all routes had consistent, sustained overcrowding, which we are addressing with increased service**

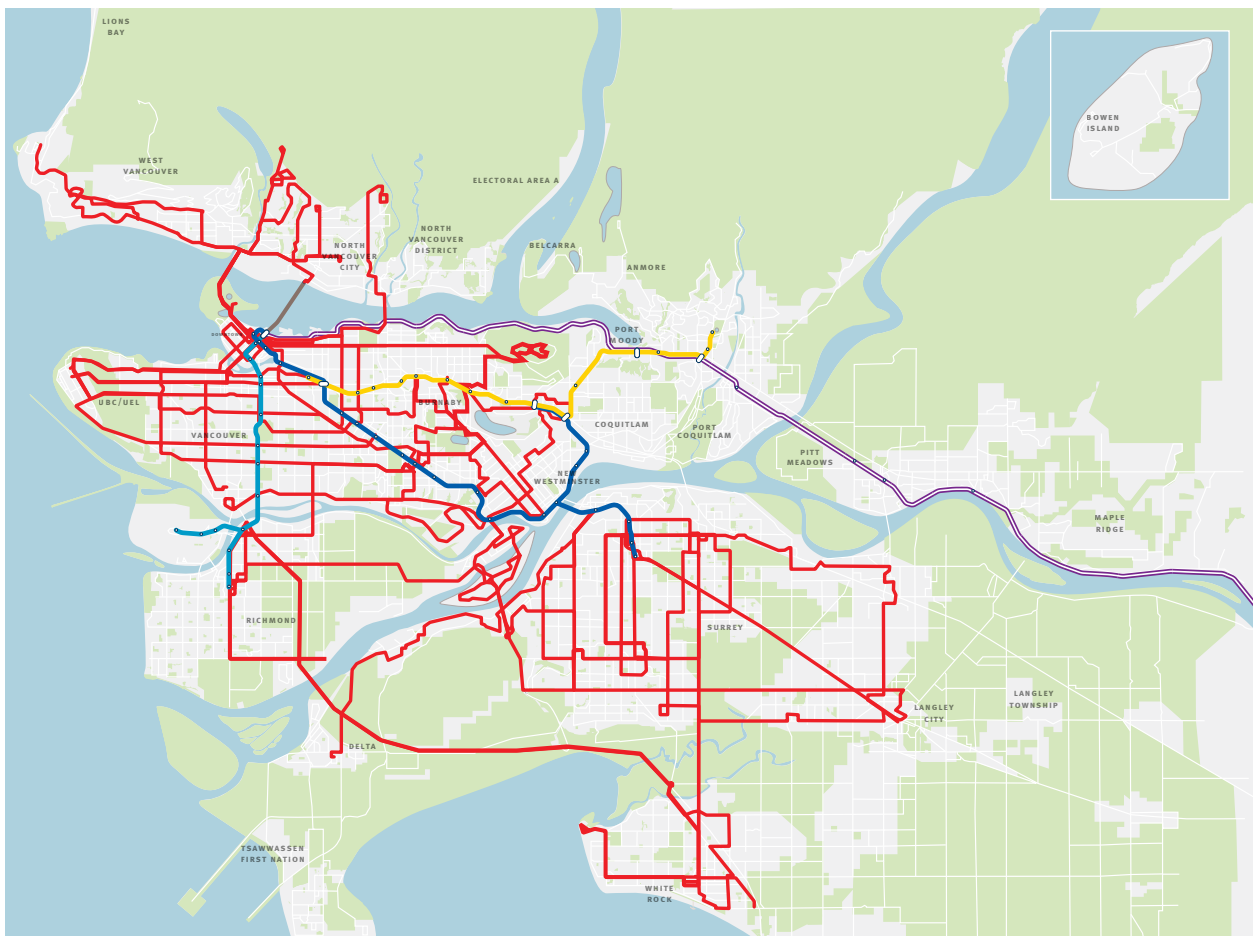
In fall 2018, 52 bus routes had consistent, sustained overcrowding for one hour or more on any day type, as shown in red in Figure 4. This is up from 38 routes in fall 2016 (one-sixth of all routes), before Phase One improvements began.

Average daily boardings on Saturdays and Sundays/holidays increased 16.6% and 11.8%, respectively, between fall 2016 and fall 2018 (in comparison,

weekdays increased 9.2%). As a result, the number of routes with consistent, sustained overcrowding for one hour or more on weekends increased to 29 routes in fall 2018 from 12 routes in fall 2016.

**We are continuing to monitor and address overcrowding.** Phase One and Two of the 10-Year Vision included funding to increase service on bus routes with overcrowding. These improvements will continue to roll out through 2021, based on ridership data at the time of implementation. We are adding service in April and June 2019 to 32 of the 52 routes with consistent, sustained overcrowding.

**Figure 4: 52 bus routes had consistent, sustained overcrowding in fall 2018**







### Bus: Weekend ridership is higher on many routes in the summer than in the fall

Total bus ridership is highest on weekdays in the fall, when customers return to regular school and work schedules. Over 75% of routes have higher weekday ridership in the fall than in the summer.

In contrast, there are many routes across the region that have higher weekend ridership in the summer than in the fall:

- Saturday: 69 of 194 routes (36%)
- Sunday/Holiday: 117 of 188 routes (62%)

As ridership growth has also been higher on weekends than on weekdays, we need to consider summer data on weekends in addition to fall data on weekdays for route

planning. Starting with the 2018 TSPR, our interactive online dashboard for bus routes also includes summer data.

Some routes with higher weekend ridership in the summer serve major tourist and/or outdoor destinations, including those shown in Table 1.

In general, more customers may be using transit during summer weekends because of the longer daylight, warmer weather, and more flexible personal schedules. We plan the system to be useful for more than traditional weekday work commutes, including recreational and social trips.

While these observations are based on 2018 data, similar trends also occurred in 2017.

**Table 1: Summer weekend ridership was higher on some routes that serve popular attractions**

Route	Attraction(s)	Difference in Avg. Daily Boardings, Summer vs. Fall 2018	
		Saturday	Sunday/Holiday
2	Kitsilano Beach, Vanier Park	+2,100 (+21%)	+3,600 (+52%)
19	Chinatown, Science World, Stanley Park	+1,400 (+8%)	+3,500 (+28%)
50	Chinatown, Gastown, Granville Island	+1,500 (+34%)	+2,200 (+64%)
212	Deep Cove	+200 (+37%)	+400 (+91%)
227	Lynn Canyon Park	+100 (+26%)	+300 (+95%)
236	Grouse Mountain	+900 (+57%)	+1,100 (+87%)
362	White Rock Pier	+100 (+55%)	+100 (+80%)

**Note:** There were ten Saturdays, ten Sundays, and two holidays (Canada Day and BC Day) in the summer schedule period (June 25-September 2, 2018).

**Bus: Adjusted schedules helped improve reliability, but transit priority measures are needed to address slower speeds**

Traffic affects more than motorists—it slows down people on buses too. Congestion slowed average bus speeds from 2014 to 2018. **80% of bus routes are slower today than in 2014.** Slower service disproportionately affects heavily used bus routes on busy streets. As many as 85% of customers—or 250 million trips—were affected by slower service in 2018.

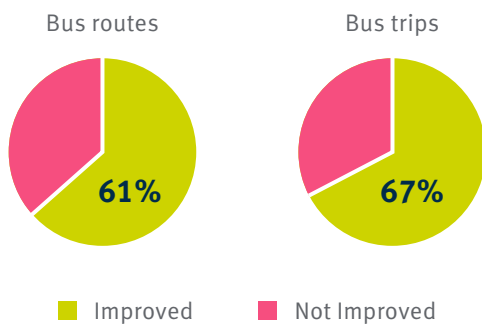
We respond to traffic congestion in two ways: (1) adjust schedules to account for slower service and (2) protect buses from congestion to help them travel faster and more reliably.

**1. Adjust schedules to account for traffic**

**Accurate schedules require continuous improvement.** We adjust bus schedules each quarter to improve accuracy based on how traffic affects travel times, focusing on worst performing routes.

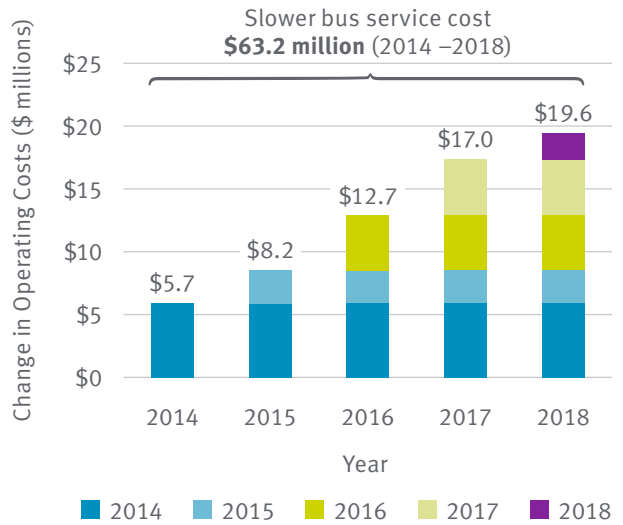
While many buses have been operating at slower speeds since 2014 due to increasing congestion, our on-time performance improved on over half (61%) of bus routes. This benefitted two-thirds of customers (67%; see Figure 5).

**Figure 5: Adjusted scheduling changed on-time performance, 2014–2018**



**However, adjusting schedules for slower service is expensive.** Each year, TransLink adds \$2.5-4 million of service to offset the impacts of traffic, without increasing capacity for customers. Unless buses travel faster, those costs carry forward into all future years. In fact, since 2014, slower speeds cost approximately \$63.2 million cumulatively. That is equivalent to the cost of operating

**Figure 6: Adjusting schedules has cost \$63.2 million in annual operating costs since 2014**



the 99 B-Line for almost five years. These are resources that are not going into service expansion.

TransLink cannot solely respond to slower service by adjusting schedules. To control costs, we must also protect buses from traffic congestion.

**2. Help buses travel faster and more reliably**

There are many ways to help buses travel faster and more reliably. Some tools—such as stop spacing and boarding policies—are within TransLink’s control.

**However, the most effective tools require cooperation and leadership from municipalities** as they own the streets that buses operate on. Tools to improve speed and reliability range from minor adjustments (like turn restrictions or bus bulges) to reallocations of time or space (like transit priority at traffic signals or bus lanes).

Protecting buses from congestion also supports the regional and municipal goals to make transit a more competitive transportation choice.

**The 10-Year Vision includes a Bus Speed and Reliability Program to provide cost-sharing opportunities for transit priority measures with our municipal partners.** The Bus Speed and Reliability Program also helps identify where transit priority measures will have the biggest benefit to customers and reduction in operating costs.

**SeaBus: Strong weekday ridership growth and pass-ups support the planned move to 10-minute peak service**

SeaBus ridership was up 6.2% during weekday peak periods over 2017. This shows that there is increased demand from weekday commuters for SeaBus.

**In 2018, pass-ups during weekday peak periods increased by three-and-a-half times YOY to over 250 pass-ups.** This meant that nearly half of all weekdays had at least one pass-up (see Figure 7). Pass-ups also occurred on a smaller percentage of weekend days.

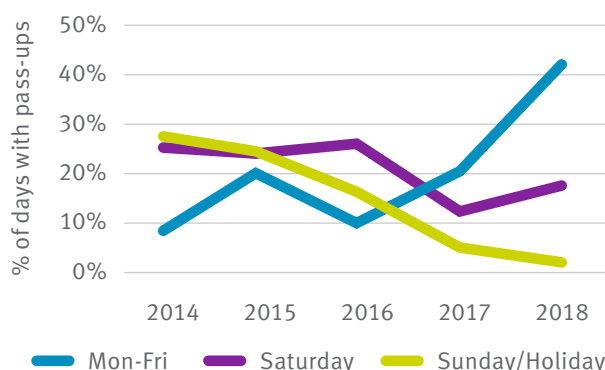
**Pass-ups** occur on SeaBus when the sailing is full (officially referred to as “lockouts”). We allow a maximum of 385 customers on board each sailing in accordance with Transport Canada requirements.

On SeaBus, every person gets a seat, unlike other services that allow standees. This means SeaBus cannot be overcrowded, but pass-ups still occur.

Despite increasing, the total pass-ups are a small portion of the total sailings on SeaBus (<1%). This means that most of the time customers can board the next sailing.

We will introduce a new SeaBus vessel with service every 10 minutes during weekday peak periods. This will help reduce customer wait times and minimize pass-ups during busy times.

**Figure 7: Days with one or more pass-ups increased on weekdays in 2018**



**SkyTrain: Ridership continued to grow with new records on all three lines**

SkyTrain ridership increased by 5.7% to 160.0 million annual boardings. The Expo and Millennium Lines together had 111.3 million annual boardings (+5.9%) and the Canada Line had 48.7 million annual boardings (+5.3%).

**Expo Line: Metrotown Station now has the second highest annual boardings with 8.2 million station entries**

Annual boardings (as measured by station entries) at Metrotown Station grew by 19.7% YOY and surpassed Commercial–Broadway Station and Burrard Station to move into second place from fourth place last year. This growth may be partially related to new residential developments within walking distance of the station. In addition, customers can connect with 10 bus routes, including the 49, which is second only to the 99 B-Line in annual boardings.

Station upgrades completed in March 2018 increased station capacity with new entrances and additional escalators, elevators, and stairs.

**Expo Line: The segment between Commercial–Broadway Station and Main Street–Science World Station was the busiest in the system**

This segment carried approximately 74,000 passengers per direction per weekday. This is almost double the busiest segment on the Canada Line (41,000 passengers per direction per weekday).

On an average weekday, the Expo Line carried 14,800 passengers westbound through this segment during the busiest hour from 8-9 a.m. (+5.0% YOY). This is the same number of people carried per direction *in an entire day* through the busiest segment of the 99 B-Line.

**Note:** There were several incidents in 2018 when the Lions Gate Bridge was closed for an extended period (July 13, July 20, and September 28). Therefore, not all SeaBus pass-ups may be attributable to ridership growth. Specifically, 74 pass-ups (26.0%) occurred on days the Lions Gate Bridge was closed.

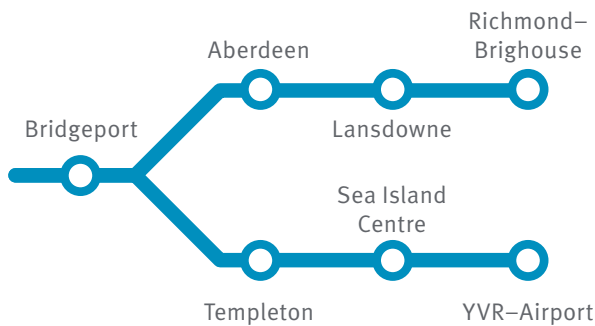
**Millennium Line: Evergreen Extension continued to grow in ridership in its second year**

Evergreen Extension stations passed 37,000 average weekday boardings in the fall, up 8.8% from 34,000 average weekday boardings in 2017.

**Canada Line: Ridership on the YVR-Airport Station branch is increasing faster than on the Richmond-Brighouse Station branch**

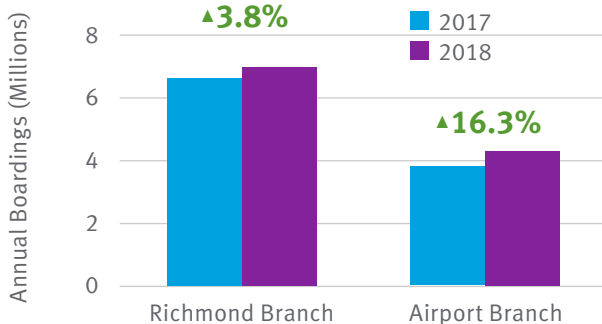
The Canada Line will be celebrating its 10th anniversary in 2019. One of its two branches is the first direct rail transit connection to an airport (YVR) in Canada.

**Figure 8: The Canada Line splits into the Richmond and Airport branches after Bridgeport Station**



Total annual boardings increased more on the Airport branch than on the Richmond branch, both in quantity and percentage, as shown in figure 9. However, the Richmond branch is still busier than the Airport branch. Ridership on the Airport branch of the Canada Line is expected to continue increasing along with airline passenger growth and future airport expansion. In 2018, YVR airport surpassed a record 25.9 million annual passengers, a growth of 7.3% over 2017 (Source: YVR).

**Figure 9: Ridership increased faster on the Airport branch than on the Richmond branch**



**West Coast Express: Ridership rebounded after Evergreen Extension integration, leading to higher ridership than 2016 levels**

Ridership on the West Coast Express was back up by 7.0% to 2.5 million boardings after the decline in 2017 (-5.5%). It surpassed the 2016 level by 20,000 boardings.

Ridership is growing primarily in Maple Ridge (Maple Meadows and Port Haney) and at stations that connect to the Evergreen Extension SkyTrain (Moody Centre and Coquitlam Central).

This trend continued from last year, when we saw ridership patterns shift. New customers started taking the West Coast Express from Maple Ridge to access the new connections to SkyTrain in Port Moody and Coquitlam.

There are also many new boardings at Waterfront Station. These trends indicate that the Evergreen Extension is improving commuting flexibility between modes and opening new opportunities for trips that can be done on transit.

**Table 2: West Coast Express average weekday boardings increased after the decline in 2017**

Station	Average Daily Boardings		YOY Change
	2017	2018	
Waterfront	4,330	4,650	+7.4%
Moody Centre	950	1,070	+12.6%
Coquitlam Central	1,030	1,130	+9.7%
Port Coquitlam	1,000	1,010	+1.0%
Pitt Meadows	380	390	+2.6%
Maple Meadows	590	650	+10.2%
Port Haney	450	500	+11.1%
Mission City	490	510	+4.1%
<b>Overall</b>	<b>9,220</b>	<b>9,910</b>	<b>+7.5%</b>



**HandyDART: Increased trips for HandyDART customers correspond with a decrease in trip denials**

HandyDART is a door-to-door, shared ride service for customers with physical or cognitive disabilities who are unable to use conventional public transit without assistance. We began operating HandyDART with a new service provider in July 2018.

HandyDART is a demand-based service, rather than a fixed route service like the conventional system. Because of this, the objective is to ensure we are meeting the demand from customers, rather than increasing overall boardings.

**It is important to understanding HandyDART trips compared to boardings**

A **trip** is counted when a registered HandyDART customer boards a vehicle with or without an attendant or companion.

**Boardings** count both that customer and the attendant or companion, if they travelled with one.

**Note:** System-wide ridership includes HandyDART boardings. We consider **trips** a better metric for the level of service provided, because attendants or companions would not travel without the customer's trip.

The total number of budgeted HandyDART trips for 2018 was 1.355 million. This was an increase of 3.6% or 48,000 trips over the 2017 budget.

**In 2018, we delivered 1.315 million total HandyDART trips, an increase of 5.2% over trips delivered in 2017.** In 2017 the demand for service did not meet the available capacity. This means there were more trips available than what was delivered. As a result, there was more capacity for growth in service delivery in 2018.

**10-Year Vision service expansion is budgeted for trips delivered on HandyDART vehicles**

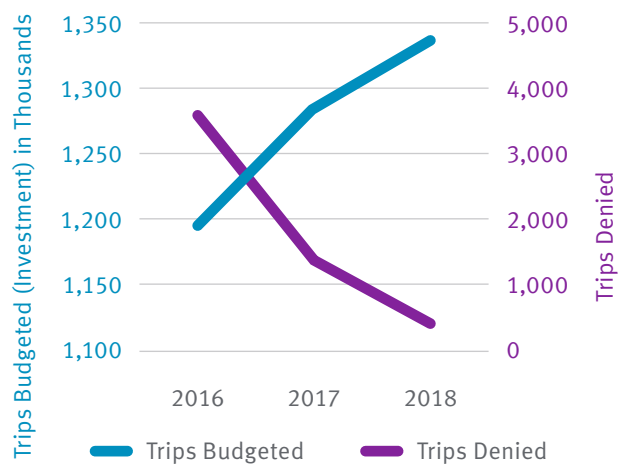
HandyDART trips may be delivered on HandyDART vehicles or taxis. Taxi trips are typically used for overflow services.

**In 2018, HandyDART trip denials decreased by almost half and trip refusals fell by 30%.** Trip denials declined from 0.11% to 0.06% of all trips requested, or 729 trip denials in total. Trip refusals declined from 0.38% to 0.24% of all trips requested, or 3,253 trips in total. Figure 10 shows trip denials decreased as investment in HandyDART increased.

**Denials** occur because requests for trips cannot be accommodated in the schedule. This happens close to the desired travel day, for peak travel times, or for long trips.

**Refusals** occur when an alternative time is offered but is not agreeable to the customer. We offer alternative times up to an hour before or after the requested time.

**Figure 10: Increase in HandyDART trips budgeted (investment) correspond with lower trip denials**



Lowering denials can have an adverse impact on on-time performance. For example, to accommodate trips, especially in peak times, sub-optimal scheduling can occur.

Average on-time performance for HandyDART decreased from 87.9% to 87.1% in 2018. TransLink is working diligently with the HandyDART operator, First Canada, to improve this performance.

## SUB-REGIONAL BUS HIGHLIGHTS

We improved bus routes in every sub-region and saw ridership growth throughout the region. The Southeast sub-region led the region with a 15.6% year-over-year increase in boardings.

**Sub-regions** are groups of municipalities; bus routes are assigned to one sub-region based on their geographic location, though they may serve two or more sub-regions.

Additional information about improvements to each route can be found on the interactive dashboards at [translink.ca/tspr](https://translink.ca/tspr).

Additional bus data by sub-region are listed in Tables A, B, D, and F under Additional Tables.

The seven subregions are:

- Burnaby/New Westminster
- Maple Ridge/Pitt Meadows
- North Shore (North Vancouver/West Vancouver/Lions Bay/Bowen)
- Northeast Sector (Tri-Cities/Anmore/Belcarra)
- Southeast (North Delta/Surrey/Langley/White Rock)
- Southwest (Richmond/South Delta/Tsawwassen First Nation)
- Vancouver/UBC

**In all sub-regions, except Maple Ridge/Pitt Meadows, the percentage growth for ridership outpaced the growth in service provided.** This is contributing to widespread overcrowding.

We implemented over 120 service changes on 102 bus routes in 2018, including:

- 53 expansion and SWATP improvements (on 42 routes), with 75,000 additional annual service hours
- 43 community shuttle name changes, removing the “C” designation for greater flexibility with vehicle types
- 25 other changes, such as vehicle conversions and changing trip patterns

Figure 11: Metro Vancouver has seven sub-regions for planning and reporting

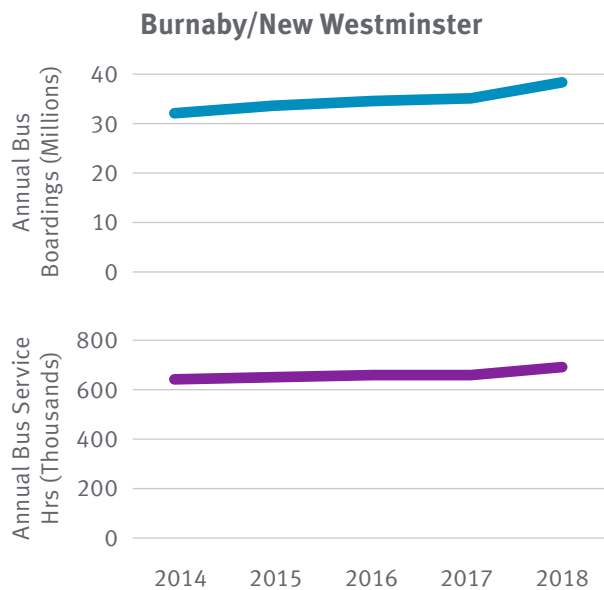


## Burnaby/New Westminster

**Annual Bus Boardings:** up 1,964,000 (+5.5%)  
**Annual Bus Service Hours:** up 22,000 (+3.3%)  
**Routes Improved:** 95 B-Line, 103, 116, 123, 128, 129, 130, 133, 145, 147, 148, N35

Notable routes include:

- **95 B-Line—largest numerical growth in Burnaby/New Westminster** by 787,000 annual boardings (+13.1%).
- **N35 Downtown/SFU—largest percentage growth in Burnaby/New Westminster** by 41.2% over 2017 (+30,000 annual boardings).
- **Together the 95 B-Line and N35 became the first 24/7 corridor** in the system in Jan 2018 and showed strong growth on Hastings Street.
- **116 Metrotown Station/Edmonds Station—experienced large growth and overcrowding** with 195,000 more annual boardings (+24.1%). We increased peak service in September and December 2018 to help reduce overcrowding on the route.



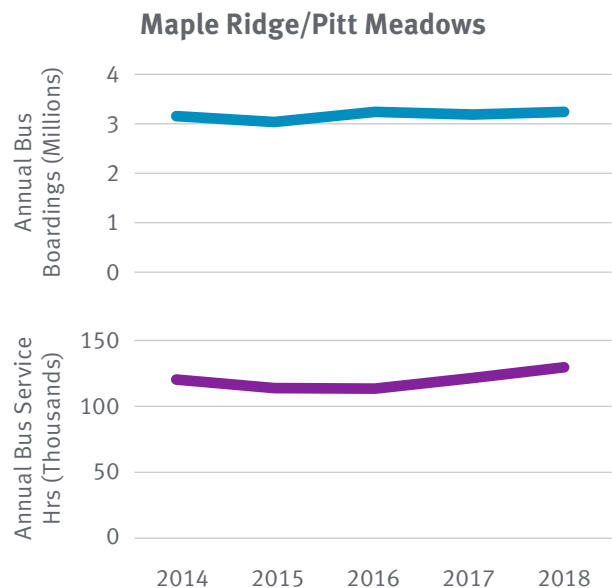
## Maple Ridge/Pitt Meadows

**Annual Bus Boardings:** up 68,000 (+2.2%)  
**Annual Bus Service Hours:** up 10,600 (+8.8%)  
**Routes Improved:** 722, 733, 741, 743, 744, 745/746, 748

Notable routes include:

- **745/746 Haney Place/Albion/Cottonwood—largest numerical and percentage growth in Maple Ridge/Pitt Meadows**, especially for West Coast Express connections (+40,000 annual boardings; +24.9%).

Work on the Maple Ridge-Pitt Meadows Area Transport Plan began in spring 2018 and will determine future multimodal transportation improvements in the sub-region.

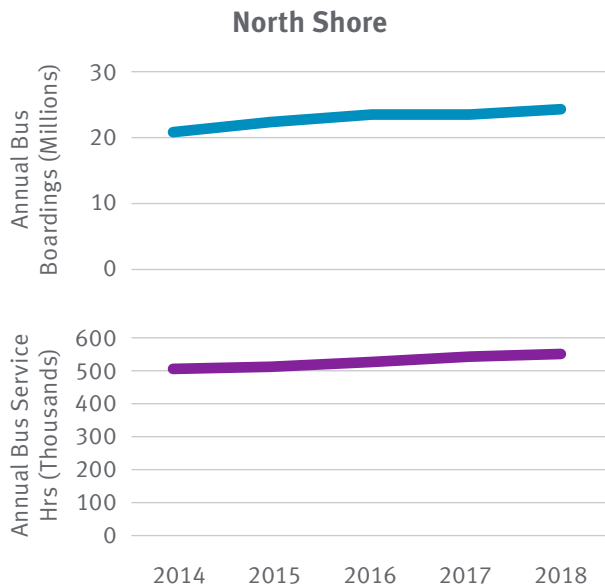


### North Shore (North Vancouvers/West Vancouver/Lions Bay/Bowen)

**Annual Bus Boardings:** up 736,000 (+3.3%)  
**Annual Bus Service Hours:** up 12,200 (+2.3%)  
**Routes Improved:** 228, 229, 239, 247, 257, 259, 262, 282

Notable routes include:

- **240 Vancouver/15th Street—largest numerical growth in North Shore** by 373,000 annual boardings (+12.7%). Many peak trips were overcrowded over the Lions Gate Bridge.
- **257 Horseshoe Bay Express/Vancouver—largest percentage growth in North Shore** by 16.7% (+191,000 annual boardings). In September, 257 service increased to every 20 minutes all day, every day, from 20-30 minutes.
- **More than half the routes in the North Shore are stable or decreasing in ridership (20/34 routes).** These decreases are not consistent with the ridership growth in the rest of the system.



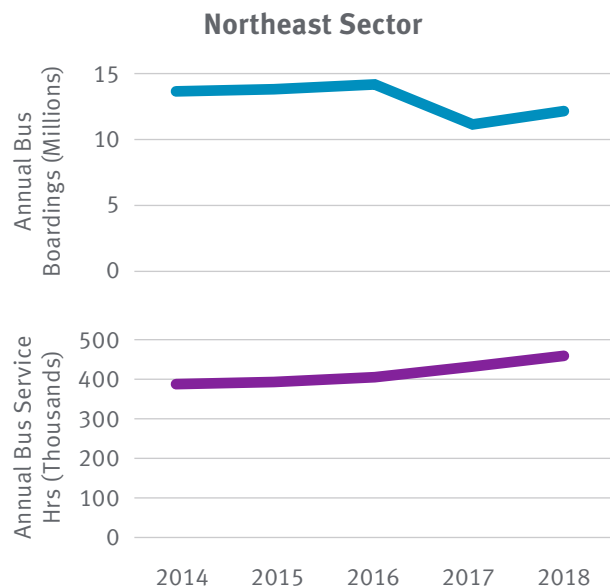
### Northeast Sector (Tri-Cities/Anmore/Belcarra)

**Annual Bus Boardings:** up 628,000 (+5.7%)  
**Annual Bus Service Hours:** up 15,500 (+3.5%)  
**Routes Improved:** 153, 159, 169, 181, 183

Bus ridership grew again after the dip in 2017, which occurred because some customers shifted modes from buses like the 97 B-Line to the new Evergreen Extension SkyTrain.

Notable routes include:

- **159 Coquitlam Central Station/Braid Station—largest numerical growth in Northeast Sector** by 119,000 annual boardings (+16.8%). In September 2018 we rerouted the 159 into Port Coquitlam Station during West Coast Express service to improve connections.
- **171/172 Coquitlam Central Station/Fremont/Riverside—largest percentage growth in Northeast Sector** by 23.0% (+92,000 annual boardings). As part of the Evergreen Extension bus integration, we extended the 171/172 to serve Fremont Village and connect to SkyTrain.





## Southeast (North Delta/Surrey/Langleys/White Rock)

**Annual Bus Boardings:** up 6,765,000 (+15.6%)

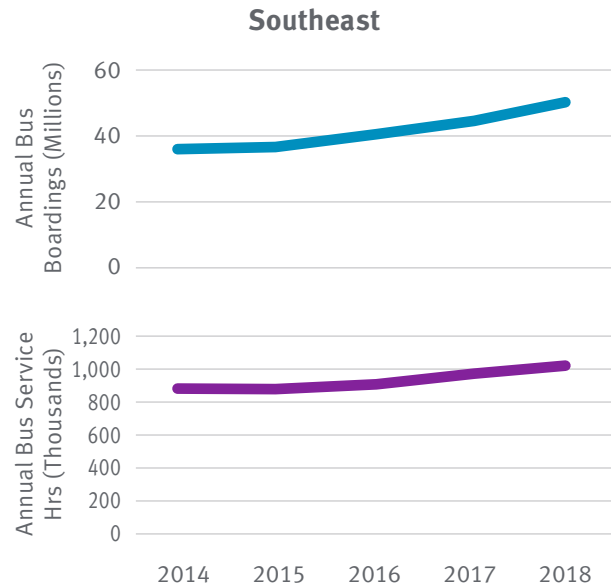
**Annual Bus Service Hours:** up 47,100 (+4.8%)

**Routes Improved:** 96 B-Line, 104, 310, 312, 319, 320, 321, 323, 325, 335, 337, 345, 351, 372, 388, 555

Southeast (also known as South of Fraser) had the largest percentage growth in the region by 15.6% over 2017. This is a massive increase of nearly 6.8 million annual boardings – the same as the Vancouver/UBC sub-region.

Notable routes include:

- **96 B-Line—continued to grow with double the weekday boardings since its launch in 2013.** Saturday and Sunday/holiday boardings already doubled in 2017 over four years.
- **319 Scott Road Station/Newton Exchange—experienced the second largest numerical growth in the entire bus network** by 1,228,000 (+23.6%; top route is the 49). The 319 is also one of the most overcrowded routes in the network. We implemented increases on the 319 in every service change in 2018 but did not keep up with the increased demand.
- **502 Surrey Central/Langley Centre—largest numerical growth in the Langleys** by 343,000 annual boardings (+12.1%).
- **640 Scott Road Station/Ladner Exchange—largest numerical and percentage growth in North Delta** by 121,000 (+17.7%).
- **Three quarters of the routes in the South of Fraser had double digit percentage growth (40/53 routes).** This is a large increase for any bus route, let alone multiple bus routes, and it surpassed the region-wide bus growth rate of 8.0%.



The Southeast sub-region had phenomenal growth in one year, but this contributed to wide-spread overcrowding. In fact, Southeast also had more than double the number of trips with overcrowding (see *overcrowding* on p. 7).

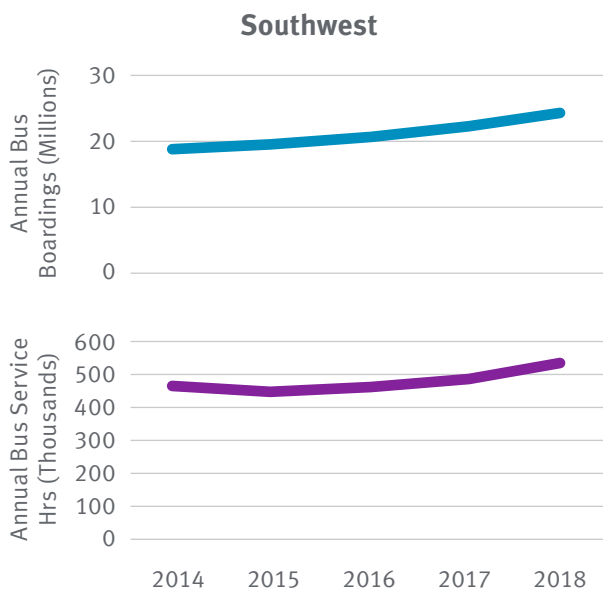
### Southwest (Richmond/South Delta/Tsawwassen First Nation)

**Annual Bus Boardings:** up 1,840,000 (+8.8%)  
**Annual Bus Service Hours:** up 24,200 (+4.9%)  
**Routes Improved:** 401, 402, 403, 406, 408, 410, 601

Notable routes include:

- **403 Three Road/Bridgeport Station—large numerical growth related to SWATP service increase** in Sep 2018 (by 191,000 annual boardings; +9.8%).
- **430 Richmond—Brighthouse Station/Metrotown Station—largest numerical and percentage growth in Richmond** by 418,000 annual boardings (+27.9%).
- **620 Tsawwassen Ferry /Bridgeport Station—largest numerical and percentage growth in Ladner/South Delta/Tsawwassen** by 130,000 annual boardings (+15.3%).

We completed the [Southwest Area Transport Plan](#) (SWATP) in April 2018, recommending improvements to all modes of travel. Implementation of SWATP projects began in September 2018.

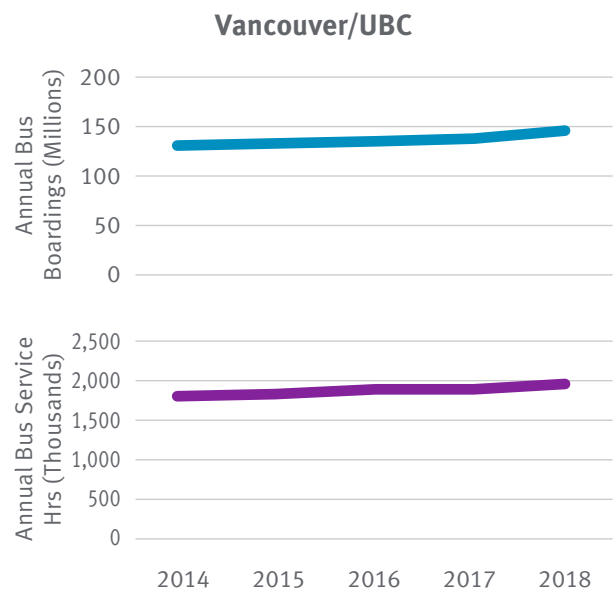


### Vancouver/UBC

**Annual Bus Boardings:** up 6,794,000 (+4.8%)  
**Annual Bus Service Hours:** up 60,500 (+3.1%)  
**Routes Improved:** 20, 23, 25, 28, 41, 43, 44, 99 B-Line, 100, N17

Notable routes include:

- **43 Joyce Station/UBC—large ridership growth driven by service increases** by 676,000 (+35.3%). We added service to the 43 all day on weekdays in advance of the 41st Avenue B-Line. At the same time, we reduced service on the 41 and ridership decreased by 3.5% (-317,000).
- **49 Metrotown Station/UBC—largest numerical growth in the entire bus network** by 1,366,000 annual boardings (+17.2%). This makes the 49 the second busiest route overall behind the 99 B-Line with 9.3 million annual boardings. The 49 had the largest growth in the region in 2017 and 2018.
- **Six NightBus routes had large percentage increases**, namely the N8 (+54.4%), N9 (+20.5%), N15 (+17.7%), N20 (+46.3%), N22 (+22.2%), and N35 (+41.2%). We launched the NightBus District to help customers find late night services downtown in June 2018.



## NEW SERVICE AREA HIGHLIGHTS

As part of implementing the 10-Year Vision, we introduced or extended service to five new areas:

- Burke Mountain in Coquitlam on the 191
- Clayton Heights in Surrey on the 372
- Morgan Creek in Surrey on the 354 and 363
- Silver Valley in Maple Ridge on the 733 and 741
- Willoughby in Langley on the 595

All of these areas are new and growing residential neighbourhoods where we introduced service at a basic level and would expect lower levels of ridership.

After more than a year of service, we saw improvements in ridership (measured by average weekday boardings), efficiency (measured by cost per boarding), and utilization (measured by peak load factor).

Table 3 shows the new service areas with routes serving the areas, when they were implemented, and some key performance indicators. In general, the new routes are in the bottom half of our routes, with average weekday boardings under 1,000 and costs per boarding over \$4.00. However, we anticipate that their performance will continue to improve if their ridership continues to grow over time.

Notably, some of the new routes were performing as well as similar routes in their respective areas. For example, the 191 to **Burke Mountain** had the second highest growth rate in the Northeast Sector.

**Clayton Heights** had the largest performance improvement with more than double the ridership from fall 2017 (+143%). The 372 surpassed the annual boardings on the nearest route, the 370, which also serves Cloverdale.

**Morgan Creek** also had large year-over-year improvements, which is consistent with Clayton Heights and the rest of the Southeast sub-region.

**Silver Valley** service on the 733 and 741 had the lowest ridership and least efficient service of the new service areas. However, these routes performed similarly to other shuttle services in Maple Ridge.

**Willoughby** service on the 595 was rerouted from 200th Street to 208th Street, with about a quarter of the average daily boardings at the new stops. The route has been a well-established connection across the Golden Ears Bridge since before the change. The efficiency and utilization are better than the other new service areas due to pre-existing ridership.

**Table 3: New service areas identified in the 10-Year Vision improved in ridership, efficiency, and utilization in 2018**

New Service Area	Routes	Start Date	Ridership		Efficiency		Utilization	
			Average Weekday Boardings, Fall 2018	YOY Change	Cost per Boarding, 2018	YOY Change	Peak Load Factor (% Crowded) A.M. Peak, Fall 2018 <sup>a</sup>	YOY Change
Burke Mountain	191	Dec 2016	740	+17%	\$5.39	-20%	44%	+7%
Clayton Heights	372	Sep 2017	590	+143%	\$6.97	-28%	36%	+112%
Morgan Creek	354 <sup>b</sup> , 363	Sep 2017	660	+48%	\$5.26	-15%	26% <sup>c</sup>	+73%
Silver Valley	733, 741	Sep 2017	410	+30%	\$8.71	-20%	29% <sup>d</sup>	+81%
Willoughby	595 <sup>b</sup>	Sep 2016	430	+19%	\$3.95	-7%	41%	-7%

<sup>a</sup>Efficiency is measured using the average cost per boarding. Decreases in the cost per boarding mean the route has better efficiency

<sup>b</sup>This metric shows how full the bus was in the peak direction only during the weekday a.m. peak period

<sup>c</sup>For long routes with changes only to a portion of the service (354, 595), only

stops in the new service areas are included

<sup>d</sup>This metric is for route 363 only since the 354 is busiest outside of the new service area

<sup>e</sup>This metric is for route 733 only since it is slightly higher than the 741 (at PLF=20%)

# Additional Tables

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The full TSPR can be found on the TransLink website at: [www.translink.ca/tspr](http://www.translink.ca/tspr)

Table A — Annual Bus Boardings by Sub-Region

Sub-Region	Annual Bus Boardings (Millions)					1 Year Change [2017 - 2018]
	2014	2015	2016	2017	2018	
Burnaby/New Westminster	32.6	33.9	35.2	35.9	37.8	5.5%
Maple Ridge/Pitt Meadows	3.1	3.0	3.1	3.1	3.2	2.2%
North Shore	20.6	21.3	22.1	22.4	23.2	3.3%
Northeast Sector*	13.4	13.4	14.1	10.9	11.6	5.7%
Southeast	34.5	36.3	40.0	43.3	50.1	15.6%
Southwest	18.9	19.1	19.7	20.9	22.8	8.8%
Vancouver/UBC	130.0	132.0	136.5	140.2	147.0	4.8%
<b>System-wide</b>	<b>253.0</b>	<b>259.1</b>	<b>270.8</b>	<b>276.8</b>	<b>295.6</b>	<b>6.8%</b>

\*Note: The 2017 decrease in boardings represents a mode shift from buses like the 97 B-Line to the Evergreen Extension SkyTrain

Table B — 2018 Average Daily Bus Boardings by Sub-Region

Sub-Region	Monday-Friday		Saturday		Sunday/Holiday	
	Avg Daily Boardings	1 Year Change [2017 -2018]	Avg Daily Boardings	1 Year Change [2017 -2018]	Avg Daily Boardings	1 Year Change [2017 -2018]
Burnaby/New Westminster	122,700	4.7%	71,400	6.9%	55,300	10.9%
Maple Ridge/Pitt Meadows	10,600	2.6%	5,700	1.0%	4,400	-0.4%
North Shore	71,600	3.1%	52,000	4.7%	41,400	3.8%
Northeast Sector	38,200	5.7%	20,300	6.6%	15,500	6.0%
Southeast	159,400	15.4%	99,900	17.3%	80,900	17.4%
Southwest	72,400	8.5%	44,700	8.4%	36,900	11.7%
Vancouver/UBC	456,600	4.6%	323,100	6.3%	257,800	5.3%
<b>System-wide</b>	<b>931,900</b>	<b>6.5%</b>	<b>617,200</b>	<b>8.0%</b>	<b>492,100</b>	<b>8.1%</b>

Table C — Annual Bus Boardings by Municipality

Municipality	Annual Bus Boardings (000's)		1 Year Change [2017 - 2018]
	2017	2018	
Anmore	17	19	11.4%
Belcarra	7.1	6.9	-2.4%
Bowen Island	-†	40	-
Burnaby	30,265	31,608	4.4%
Coquitlam	6,546	7,027	7.4%
Delta	4,227	4,917	16.3%
Langley-City	1,223	1,358	11.0%
Langley-Township	2,326	2,556	9.9%
Lions Bay	9.6	8.5	-11.9%
Maple Ridge	1,753	1,832	4.5%
Mission*	7.4	8.0	8.3%
New Westminster	10,220	11,086	8.5%
North Vancouver-City	6,601	6,658	0.9%
North Vancouver-District	6,861	6,864	0.0%
Pitt Meadows	379	370	-2.4%
Port Coquitlam	1,879	1,969	4.8%
Port Moody	1,241	1,262	1.7%
Richmond	16,716	18,113	8.4%
Surrey	34,472	40,235	16.7%
Tsawwassen First Nation	-†	42	-
UBC	7,857	8,075	2.8%
Vancouver	139,333	146,602	5.2%
West Vancouver	4,338	4,527	4.4%
White Rock	465	451	-3.2%

\*Note: Mission is outside of the Metro Vancouver region but is served by route 701 for some trips outside of West Coast Express times.

†Bowen Island and Tsawwassen First Nation had low data sampling in 2017.

Table D — Annual Bus Service Hours by Sub-Region

Sub-Region	Annual Bus Service Hours (ooo's)					1 Year Change* [2017 - 2018]
	2014	2015	2016	2017	2018	
Burnaby/New Westminster	638	646	656	662	684	3.3%
Maple Ridge/Pitt Meadows	115	112	113	120	130	8.8%
North Shore	505	514	523	538	550	2.3%
Northeast Sector	402	404	410	440	455	3.5%
Southeast	928	931	947	982	1,029	4.8%
Southwest	472	463	467	492	516	4.9%
Vancouver/UBC	1,871	1,891	1,914	1,938	1,999	3.1%
<b>System-wide</b>	4,930	4,962	5,030	5,171	5,363	3.7%

\*Note: % change may differ from numbers published elsewhere, since some improvements were implemented part way in the year.

Table E — 2018 Bus Routes Ranked by Annual Boardings

Rank	Route	Sub-Region	Annual APC Boardings
1	99	Vancouver/UBC	17,414,000
2	49	Vancouver/UBC	9,327,000
3	20	Vancouver/UBC	8,718,000
4	41	Vancouver/UBC	8,604,000
5	25	Vancouver/UBC	8,288,000
6	16	Vancouver/UBC	7,910,000
7	9	Vancouver/UBC	7,396,000
8	5/6	Vancouver/UBC	7,182,000
9	3	Vancouver/UBC	7,004,000
10	95	Burnaby/New Westminster	6,808,000
11	319	Southeast	6,420,000
12	410	Southwest	5,967,000
13	19	Vancouver/UBC	5,901,000
14	8	Vancouver/UBC	5,846,000
15	96	Southeast	5,832,000
16	14	Vancouver/UBC	5,782,000
17	10	Vancouver/UBC	4,871,000
18	7	Vancouver/UBC	4,820,000
19	2	Vancouver/UBC	4,785,000
20	100	Vancouver/UBC	4,471,000
21	22	Vancouver/UBC	4,075,000
22	130	Burnaby/New Westminster	3,885,000
23	250	North Shore	3,582,000
24	4	Vancouver/UBC	3,422,000
25	106	Burnaby/New Westminster	3,393,000
26	240	North Shore	3,308,000
27	17	Vancouver/UBC	3,252,000
28	502	Southeast	3,176,000
29	84	Vancouver/UBC	3,145,000
30	239	North Shore	3,130,000
31	321	Southeast	2,906,000
32	335	Southeast	2,876,000
33	15/50	Vancouver/UBC	2,803,000
34	123	Burnaby/New Westminster	2,689,000
35	401	Southwest	2,689,000
36	119	Burnaby/New Westminster	2,673,000
37	33	Vancouver/UBC	2,613,000
38	43	Vancouver/UBC	2,595,000
39	129/133	Burnaby/New Westminster	2,400,000
40	323	Southeast	2,386,000



Table E — 2018 Bus Routes Ranked by Annual Boardings (continued)

Rank	Route	Sub-Region	Annual APC Boardings
41	145	Burnaby/New Westminster	2,320,000
42	320	Southeast	2,295,000
43	144	Burnaby/New Westminster	2,194,000
44	403	Southwest	2,139,000
45	701	Maple Ridge/Pitt Meadows	2,072,000
46	430	Southwest	1,917,000
47	351	Southeast	1,870,000
48	28	Burnaby/New Westminster	1,769,000
49	160	Northeast Sector	1,691,000
50	501	Southeast	1,521,000
51	112	Burnaby/New Westminster	1,466,000
52	407	Southwest	1,452,000
53	44	Vancouver/UBC	1,417,000
54	26	Vancouver/UBC	1,410,000
55	601	Southwest	1,392,000
56	255	North Shore	1,382,000
57	246	North Shore	1,373,000
58	257	North Shore	1,337,000
59	210	North Shore	1,262,000
60	27	Vancouver/UBC	1,243,000
61	23	Vancouver/UBC	1,238,000
62	555	Southeast	1,172,000
63	364	Southeast	1,170,000
64	110	Burnaby/New Westminster	1,156,000
65	340	Southeast	1,147,000
66	101	Burnaby/New Westminster	1,132,000
67	324	Southeast	1,131,000
68	325	Southeast	1,094,000
69	229	North Shore	1,084,000
70	342	Southeast	1,069,000
71	301	Southwest	1,054,000
72	116	Burnaby/New Westminster	1,004,000
73	402	Southwest	995,000
74	620	Southwest	976,000
75	375	Southeast	974,000
76	152	Northeast Sector	955,000
77	480	Southwest	929,000
78	104	Southeast	926,000
79	341	Southeast	923,000
80	230	North Shore	913,000

Table E — 2018 Bus Routes Ranked by Annual Boardings (continued)

Rank	Route	Sub-Region	Annual APC Boardings
81	180	Northeast Sector	894,000
82	337	Southeast	889,000
83	155	Burnaby/New Westminster	855,000
84	312	Southeast	846,000
85	128	Burnaby/New Westminster	840,000
86	159	Northeast Sector	832,000
87	232	North Shore	826,000
88	143	Northeast Sector	816,000
89	640	Southeast	805,000
90	228	North Shore	789,000
91	211	North Shore	774,000
92	345	Southeast	770,000
93	188	Northeast Sector	751,000
94	316	Southeast	741,000
95	503	Southeast	740,000
96	156	Northeast Sector	724,000
97	405	Southwest	696,000
98	531	Southeast	648,000
99	406	Southwest	647,000
100	153	Northeast Sector	627,000
101	183	Northeast Sector	620,000
102	136	Burnaby/New Westminster	613,000
103	236	North Shore	603,000
104	29	Vancouver/UBC	592,000
105	134	Burnaby/New Westminster	581,000
106	791	Maple Ridge/Pitt Meadows	569,000
107	408	Southwest	550,000
108	322	Southeast	538,000
109	314	Southeast	497,000
110	171/172	Northeast Sector	493,000
111	373	Southeast	481,000
112	157	Northeast Sector	478,000
113	253	North Shore	463,000
114	595	Southeast	449,000
115	103	Burnaby/New Westminster	444,000
116	173/174	Northeast Sector	432,000
117	326	Southeast	431,000
118	404	Southwest	425,000
119	151	Northeast Sector	380,000
120	241	North Shore	347,000

Table E — 2018 Bus Routes Ranked by Annual Boardings (continued)

Rank	Route	Sub-Region	Annual APC Boardings
121	147	Burnaby/New Westminster	338,000
122	186	Northeast Sector	325,000
123	562	Southeast	305,000
124	212	North Shore	304,000
125	068/070	Vancouver/UBC	285,000
126	187	Northeast Sector	280,000
127	169	Northeast Sector	278,000
128	215	North Shore	268,000
129	148	Burnaby/New Westminster	262,000
130	184/185	Northeast Sector	256,000
131	388	Southeast	252,000
132	311	Southeast	249,000
133	254	North Shore	247,000
134	310	Southeast	241,000
135	209	North Shore	232,000
136	105	Burnaby/New Westminster	228,000
137	191	Northeast Sector	216,000
138	354	Southeast	209,000
139	N19	Burnaby/New Westminster	203,000
140	745/746	Maple Ridge/Pitt Meadows	200,000
141	395	Southeast	192,000
142	214	North Shore	189,000
143	371	Southeast	174,000
144	363	Southeast	170,000
145	32	Vancouver/UBC	168,000
146	418	Southwest	164,000
147	125	Burnaby/New Westminster	153,000
148	329	Southeast	153,000
149	170	Northeast Sector	146,000
150	412	Southwest	145,000
151	372	Southeast	144,000
152	393	Southeast	143,000
153	227	North Shore	140,000
154	109	Burnaby/New Westminster	139,000
155	352	Southeast	133,000
156	560/561	Southeast	130,000
157	189	Northeast Sector	128,000
158	370	Southeast	127,000
159	394	Southeast	126,000
160	602	Southwest	125,000

Table E — 2018 Bus Routes Ranked by Annual Boardings (continued)

Rank	Route	Sub-Region	Annual APC Boardings
161	182	Northeast Sector	122,000
162	251	North Shore	120,000
163	N20	Vancouver/UBC	112,000
164	361	Southeast	111,000
165	N9	Vancouver/UBC	110,000
166	744	Maple Ridge/Pitt Meadows	106,000
167	391	Southeast	105,000
168	N35	Burnaby/New Westminster	104,000
169	146	Burnaby/New Westminster	102,000
170	413	Southwest	97,000
171	509	Southeast	96,000
172	247	North Shore	89,000
173	256	North Shore	86,000
174	563	Southeast	83,000
175	743	Maple Ridge/Pitt Meadows	79,000
176	252	North Shore	78,000
177	362	Southeast	78,000
178	N8	Vancouver/UBC	77,000
179	603	Southwest	76,000
180	604	Southwest	73,000
181	360	Southeast	72,000
182	N24	North Shore	68,000
183	N10	Vancouver/UBC	68,000
184	181	Northeast Sector	68,000
185	733	Maple Ridge/Pitt Meadows	61,000
186	741	Maple Ridge/Pitt Meadows	53,000
187	564	Southeast	53,000
188	132	Burnaby/New Westminster	45,000
189	416	Southwest	44,000
190	175	Northeast Sector	44,000
191	131	Burnaby/New Westminster	43,000
192	414	Southwest	41,000
193	258	North Shore	39,000
194	N17	Vancouver/UBC	39,000
195	262	North Shore	38,000
196	616	Southwest	36,000
197	231	North Shore	35,000
198	719/722	Maple Ridge/Pitt Meadows	35,000
199	617	Southwest	25,000
200	618	Southwest	25,000

Table E — 2018 Bus Routes Ranked by Annual Boardings (continued)

Rank	Route	Sub-Region	Annual APC Boardings
201	<b>280</b>	North Shore	24,000
202	<b>749</b>	Maple Ridge/Pitt Meadows	20,000
203	<b>N22</b>	Vancouver/UBC	20,000
204	<b>609</b>	Southwest	19,000
205	<b>748</b>	Maple Ridge/Pitt Meadows	18,000
206	<b>150</b>	Northeast Sector	17,000
207	<b>N15</b>	Vancouver/UBC	16,000
208	<b>619</b>	Southwest	16,000
209	<b>281</b>	North Shore	16,000
210	<b>614</b>	Southwest	15,000
211	<b>608</b>	Southwest	13,000
212	<b>242</b>	North Shore	12,000
213	<b>606</b>	Southwest	9,000
214	<b>179</b>	Northeast Sector	4,000
215	<b>42</b>	Vancouver/UBC	4,000
216	<b>259</b>	North Shore	3,000
217	<b>282</b>	North Shore	1,000

Note: Some routes, like the 5/6, are presented as pairs because they run as connected routes.

Table F — 2018 Bus Annual Boardings: Top 5 Routes by Sub-Region

Route	Annual Boardings	System-Wide Rank	Route	Annual Boardings	System-Wide Rank
<b>Burnaby/New Westminster</b>			<b>Southeast</b>		
95	6,808,000	10	319	6,420,000	11
130	3,885,000	22	96	5,832,000	15
106	3,393,000	25	502	3,176,000	28
123	2,689,000	34	321	2,906,000	31
119	2,673,000	36	335	2,876,000	32
<b>Maple Ridge/Pitt Meadows</b>			<b>Southwest</b>		
701	2,072,000	45	410	5,967,000	12
791	569,000	106	401	2,689,000	35
745/746	200,000	140	403	2,139,000	44
744	106,000	166	430	1,917,000	46
743	79,000	175	407	1,452,000	52
<b>North Shore</b>			<b>Vancouver/UBC</b>		
250	3,582,000	23	99	17,414,000	1
240	3,308,000	26	49	9,327,000	2
239	3,130,000	30	20	8,718,000	3
255	1,382,000	56	41	8,604,000	4
246	1,373,000	57	25	8,288,000	5
<b>Northeast Sector</b>					
160	1,691,000	49			
152	955,000	76			
180	894,000	81			
159	832,000	86			
143	816,000	88			

Table G — 2018 Top 25 Routes by Key Performance Indicator

Service Cost per Boarding		Average Boardings per Revenue Hour	
Top 25		Top 25	
99	\$0.80	99	135
96	\$1.05	96	103
319	\$1.07	319	102
323	\$1.08	323	101
3	\$1.15	125	100
20	\$1.15	20	95
49	\$1.23	49	95
112	\$1.24	3	93
106	\$1.24	112	89
41	\$1.29	106	88
8	\$1.30	41	86
5/6	\$1.34	145	85
393	\$1.36	5/6	84
119	\$1.37	8	84
100	\$1.41	393	82
145	\$1.42	25	81
325	\$1.43	119	81
16	\$1.43	32	80
335	\$1.44	100	77
25	\$1.44	84	77
95	\$1.46	325	76
2	\$1.47	44	76
9	\$1.52	335	76
84	\$1.53	16	76
19	\$1.54	2	76

Table H — 2018 Bottom 25 Routes by Key Performance Indicator

Service Cost per Boarding		Average Boardings per Revenue Hour	
Bottom 25		Bottom 25	
609	\$22.35	609	3
281	\$16.54	281	4
259	\$13.84	280	6
606	\$11.97	614	6
280	\$11.81	282	6
614	\$11.49	619	7
619	\$10.42	617	7
282	\$10.25	719/722	8
617	\$9.93	748	8
748	\$9.78	741	8
741	\$9.47	262	8
719/722	\$9.01	749	8
262	\$8.64	259	9
749	\$8.29	42	9
131	\$8.17	733	9
733	\$7.94	360	9
42	\$7.90	131	10
618	\$7.30	372	10
360	\$7.29	564	10
N9	\$7.01	618	10
372	\$6.97	560/561	10
564	\$6.96	182	11
743	\$6.84	363	11
416	\$6.82	743	11
N15	\$6.79	252	11



Table I – Top 10 Overcrowded Routes by Annual Revenue Hours with Overcrowding

Rank	2016			2017			2018		
	Route	ARHs with Over-crowding	% of ARHs with Over-crowding	Route	ARHs with Over-crowding	% of ARHs with Over-crowding	Route	ARHs with Over-crowding	% of ARHs with Over-crowding
1	99	30,500	25%	99	38,300	30%	99	38,800	30%
2	25	22,400	24%	25	17,800	19%	49	22,600	23%
3	49	19,400	25%	41	17,100	17%	25	20,800	20%
4	41	12,600	12%	49	15,700	18%	502	16,100	27%
5	95	10,100	12%	95	11,100	13%	319	15,800	25%
6	250	10,000	17%	100	9,500	17%	95	13,400	15%
7	14	9,600	11%	319	9,400	15%	240	11,600	23%
8	319	8,200	14%	410	8,700	8%	16	10,900	10%
9	130	7,900	14%	250	8,500	14%	250	9,600	16%
10	410	7,200	7%	16	8,400	8%	41	9,300	9%

Note: Overcrowding methodology changed in the 2017 TSPR. The routes and overcrowding values listed for 2016 differ from those published in previous versions of the TSPR.

Table J – 2018 SkyTrain Stations Ranked by Annual Boardings

Rank	Station	Line	Annual Boardings	1 Year Change [2017 - 2018]
1	Waterfront	Canada and Expo Lines	12,616,000	4.5%
2	Metrotown	Expo Line	8,214,000	19.7%
3	Commercial–Broadway	Expo and Millennium Lines	8,141,000	1.4%
4	Burrard	Expo Line	7,333,000	4.7%
5	Granville	Expo Line	6,821,000	0.7%
6	Vancouver City Centre	Canada Line	6,253,000	2.8%
7	Stadium–Chinatown	Expo Line	5,687,000	5.5%
8	New Westminster	Expo Line	5,049,000	7.9%
9	Main Street–Science World	Expo Line	4,919,000	5.6%
10	Joyce–Collingwood	Expo Line	4,900,000	5.4%
11	Broadway–City Hall	Canada Line	4,696,000	1.7%
12	King George	Expo Line	4,448,000	7.5%
13	Surrey Central	Expo Line	4,210,000	6.7%
14	Lougheed Town Centre	Expo and Millennium Lines	4,087,000	1.5%
15	Richmond–Brighouse	Canada Line	3,968,000	3.9%
16	Bridgeport	Canada Line	3,852,000	4.3%
17	Edmonds	Expo Line	3,852,000	4.8%
18	Yaletown–Roundhouse	Canada Line	3,611,000	4.7%
19	Marine Drive	Canada Line	3,467,000	8.7%
20	22nd Street	Expo Line	3,301,000	6.9%
21	Scott Road	Expo Line	3,081,000	12.2%
22	YVR–Airport	Canada Line	3,012,000	14.2%
23	Oakridge–41st Avenue	Canada Line	2,901,000	1.7%
24	Langara–49th Avenue	Canada Line	2,555,000	9.8%
25	29th Avenue	Expo Line	2,444,000	5.7%
26	Nanaimo	Expo Line	2,314,000	4.6%
27	King Edward	Canada Line	2,221,000	5.6%
28	Royal Oak	Expo Line	1,847,000	5.8%
29	Production Way–University	Expo and Millennium Lines	1,828,000	2.2%
30	Gateway	Expo Line	1,820,000	8.1%

Table J – 2018 SkyTrain Stations Ranked by Annual Boardings (continued)

Rank	Station	Line	Annual Boardings	1 Year Change [2017 - 2018]
31	Brentwood Town Centre	Millennium Line	1,699,000	2.9%
32	Olympic Village	Canada Line	1,694,000	4.0%
33	Patterson	Expo Line	1,617,000	-5.4%
34	Columbia	Expo Line	1,599,000	5.3%
35	Aberdeen	Canada Line	1,581,000	1.3%
36	Lansdowne	Canada Line	1,578,000	6.2%
37	Coquitlam Central	Millennium Line	1,457,000	11.2%
38	Burquitlam	Millennium Line	1,375,000	14.6%
39	Renfrew	Millennium Line	1,337,000	8.4%
40	Lincoln	Millennium Line	1,325,000	9.4%
41	Braid	Expo Line	1,276,000	3.7%
42	Gilmore	Millennium Line	1,196,000	5.3%
43	Templeton	Canada Line	1,185,000	21.1%
44	Holdom	Millennium Line	1,034,000	2.9%
45	VCC-Clark	Millennium Line	1,029,000	6.6%
46	Rupert	Millennium Line	1,008,000	1.6%
47	Sapperton	Expo Line	965,000	3.4%
48	Lafarge Lake-Douglas	Millennium Line	897,000	7.6%
49	Moody Centre	Millennium Line	732,000	13.0%
50	Sperling-Burnaby Lake	Millennium Line	678,000	3.7%
51	Inlet Centre	Millennium Line	656,000	7.9%
52	Lake City Way	Millennium Line	378,000	1.1%
53	Sea Island Centre	Canada Line	296,000	20.1%