Part 6: Vision for Bus Priority

INVESTING IN TRANSIT PRIORITY

A Vision for Bus Priority will help the region accomplish its goal to provide bus priority on the full Frequent Transit Network

The 10-Year Priorities/Access for Everyone plan has a goal of providing bus priority across the entire Frequent Transit Network. The plan calls for TransLink to expand bus priority measures to the entire existing frequent bus network and up to 25% of the expanded frequent bus network.[43] Transit is the most efficient way to move the most people. Providing bus priority along the FTN ensures our buses continue to move as fast and efficiently as possible while our region continues to grow.

TransLink has funding to make buses faster and more reliable throughout the region. The 10-Year Priorities will expand funding for the types of bus priority measures described in this report. TransLink wants to partner with local jurisdictions to design and deliver these measures.

Despite significant recent expansions in bus priority, addressing the needs at the scale of the FTN is challenging. As described in the previous part of this report, most of the FTN has no or limited priority. A conceptual vision that prioritizes where and how to invest in bus priority will help TransLink, local governments, and BC MOTI determine how to most effectively address our region's transportation needs.

The Bus Priority Vision establishes a shared understanding of the types of bus priority solutions that can be established across the FTN. It will help TransLink and its partners work towards identifying specific solutions in different parts of the network.

This part of the report helps advance a regional vision for expanding bus priority. Part 6:

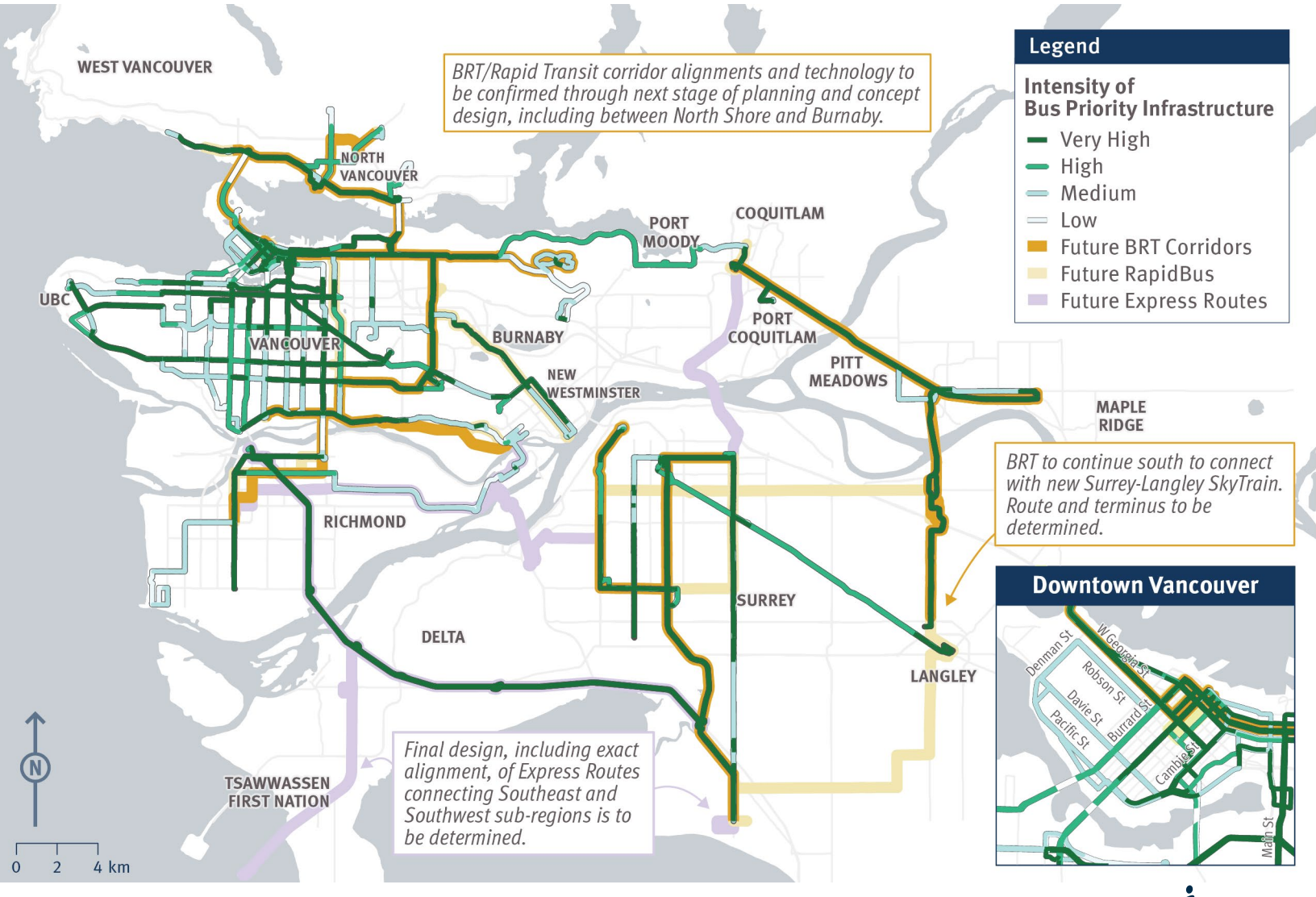
- **Proposes a regional Bus Priority Vision that establishes a shared understanding of the types of bus priority solutions that can be established across the FTN.** It will be used by TransLink and local government partners to work towards identifying specific solutions in different parts of the network.
- **Highlights the need to manage our streets to serve a variety of users.** Illustrating where the highest need for transit priority overlaps with the highest needs for other transportation networks—goods movement, cycling, walking, and business access—allows us to collaborate to find efficient solutions across our network.
- **Identifies conceptual solutions for the 20 "Profile Areas" identified in Part 3 of this report.** While still conceptual, these are examples of how we can refine the regional vision based on more detailed understanding of local conditions and context.

BUS PRIORITY VISION

The **Regional Bus Priority Vision map** below classifies the FTN into categories that describe the relative intensity of bus priority infrastructure needed to address bus delay due to congestion. The Vision:

- **Illustrates where different levels of priority are needed across the FTN.** Each level of investment is associated with a range of potential solutions based on need.
- **Does not account for existing traffic volumes or goods movement.** More detailed evaluation of solutions will be conducted as part of specific corridor or hotspot projects.
- **Is based on existing service and near-term plans.** It may need to be updated if service levels or plans change in the future.
- **Is intended to be fine-grained enough to account for local context while remaining a high-level tool for communicating policy.** As such, the map aims to account for business districts and major cycling facilities at the level of roadway segments, but not variations in individual blocks. Guided by this policy and vision, local implementation will require further analysis and design. Consistent solutions are important, rather than piecemeal infrastructure such as short bus lanes or discontinuous bike lanes that require merging in and out of traffic.

Bus Priority Vision Map

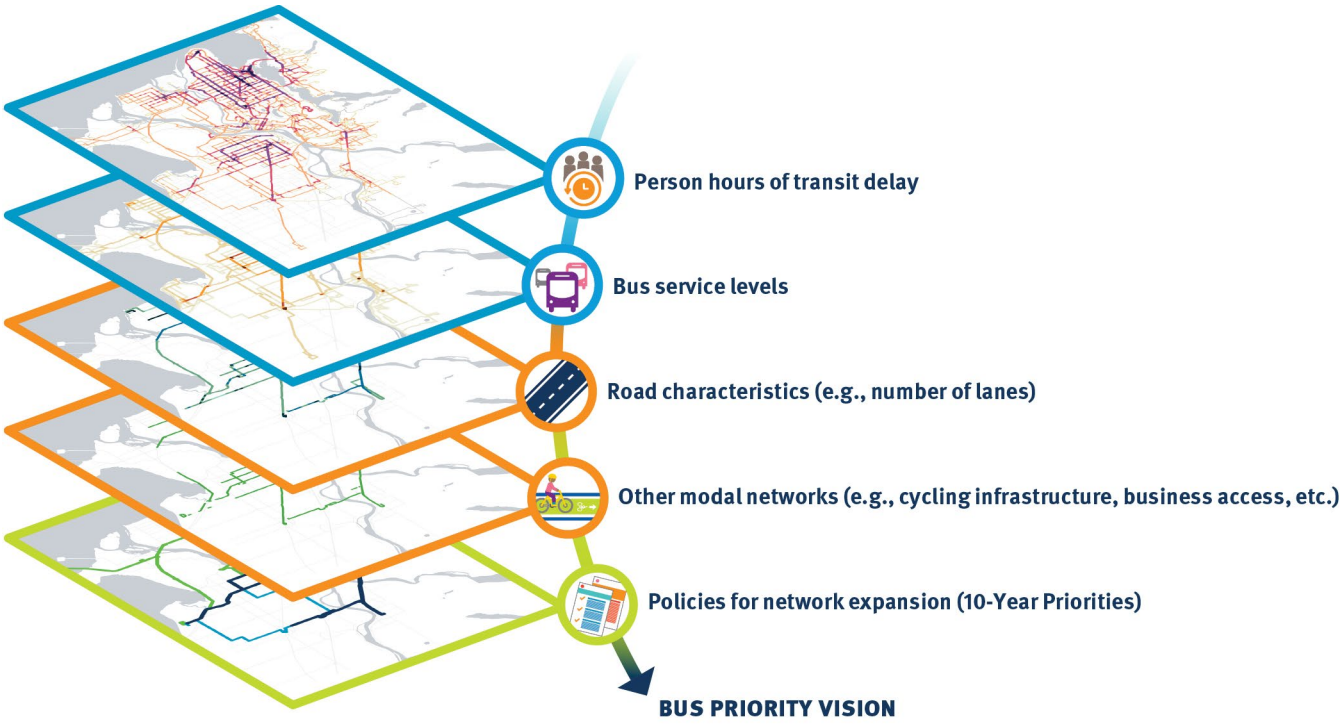


Establishing the Regional Bus Priority Vision

The Bus Priority Vision uses data and policy to assess where there is a strong case for better bus priority measures.

- We focused on the FTN; this is where we run the most buses, carry the most passengers, and can see the highest return from bus priority.
- We considered where there is the greatest need to provide more bus priority using two measures (see page 24) of how fast and reliable current service is:
  - **Transit delay,** in terms of person-hours, accounts for both delay to buses and the number of riders affected.
  - **Travel time reference ratio,** a measure of reliability, compares typical travel times in each hour to the best typical travel time during daytime hours (6 am – 10 pm).
- We considered compatibility with our existing infrastructure, including existing right-of-way, active transportation, and business access, to understand where there are possible constraints to implementing specific types of transit priority improvements.
- We considered both current service levels and where we are making large service investments in the near-term, as identified in the 10-Year Priorities/Access for Everyone plan.

The Bus Priority Vision is Driven by Data and Policy



How we developed the Bus Priority Vision

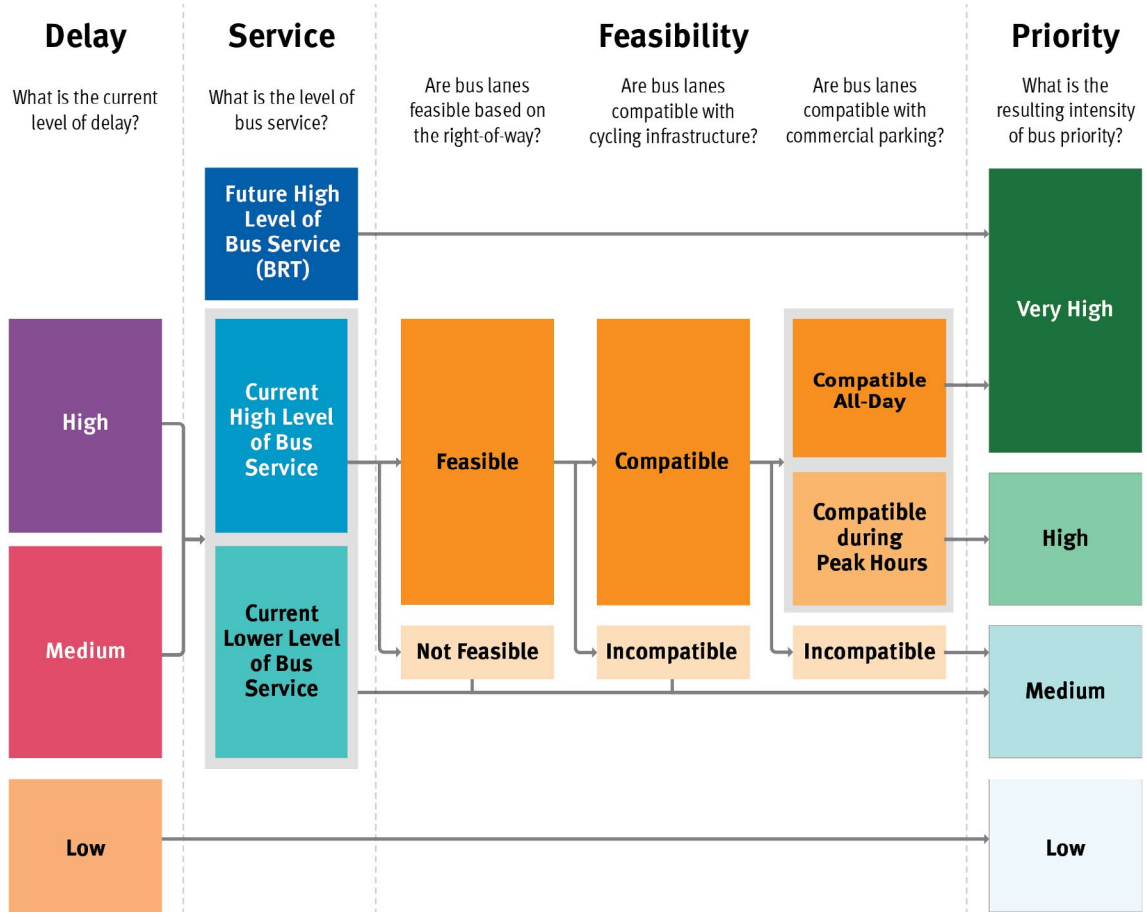
We developed the Bus Priority Vision through an iterative, data-driven process that also included outreach to municipal partners. The graphic below illustrates what we considered.

- **Delay:** We assessed the level of delay based on both person-hours of delay and reliability of bus travel times. We considered Medium or High delay locations to have moderate to high person-delay (see map on page 35) and/or have unreliable travel times—where a bus could take over 1.5 times longer in some hours of the day compared to a typical trip at the best time of day.
- **Service:** We considered the level of bus service provided today as well as plans to provide a high level of service in the future, i.e., Bus Rapid Transit (BRT) service (see map on page 94), in assigning a High or Very High level of priority.
- **Feasibility:** We assessed if different types of bus priority are feasible based on roadway characteristics, including width of the road, compatibility with cycling infrastructure, and compatibility with curb uses, in particular commercial street parking.
- **Priority:** The resulting intensity of bus priority was categorized ranging from Very High to Low.

The result is a conceptual vision for bus priority that accomplishes the region's goals of bus priority on the full FTN.

Future planning and design efforts led by TransLink and local government partners will be needed to refine the Vision to account for a detailed understanding of roadway conditions, such as right-of-way and traffic patterns along a corridor, and the needs of different roadway users.

Bus Priority Vision Process



Intensity of Bus Priority Solutions

Identifying the desired level of bus intensity across our transit network allows local governments to understand where different types of bus priority investments are needed and consider how to incorporate them into roadway infrastructure plans. Developing bus priority solutions hinges on partnering with local government staff and leaders. Their local knowledge context and established connections with stakeholders are crucial in tailoring projects to specific community needs.

The Vision identifies the types of measures that are likely to be most appropriate. The four categories of bus priority intensity in the Vision, ranging from Very High to Low, correspond to a general application of the appropriate types of bus priority solutions. The graphic below illustrates the possible solutions to address bus priority where it is most needed.

- Along corridors where we have the most delay and greatest need to address speed and reliability issues, **Very High intensity** priority would often include all-day bus lanes.
- Where we have moderate delay, or our roadways are constrained, **Medium to High intensity** solutions could include bus lanes to address delay at specific times of day or improvements at many intersections.
- For corridors where we have less delay, **Low intensity** priority could be appropriate, including solutions such as bus stop balancing and in-lane bus stops (potentially), along with interventions at key intersections and other hot spots.

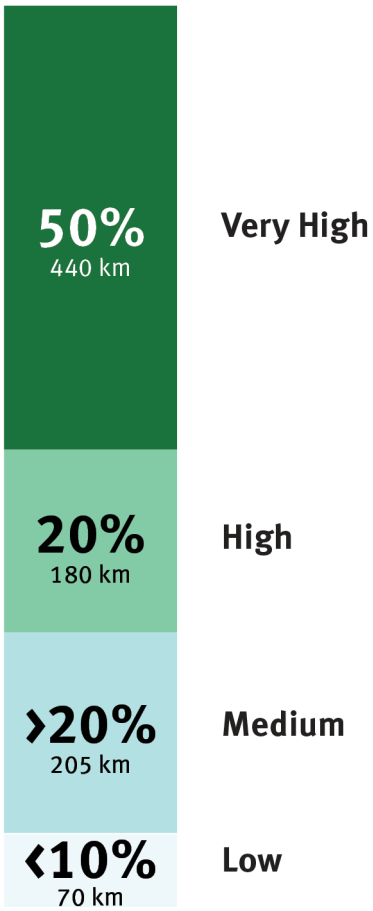
Types of Solutions that are Generally Applicable for Each Category of Bus Priority

	Potential Solutions			
INTENSITY OF BUS PRIORITY	BUS LANES	INTERSECTION IMPROVEMENTS	IN-LANE BUS STOPS	BUS STOP BALANCING
Very High	All Day	Yes	Maybe	Yes
High	Peak Hour	Yes	Maybe	Yes
Medium	No	Maybe	Yes	Yes
Low	No	No	Maybe	Yes

Results of the Bus Priority Vision

The chart illustrates the resulting breakdown of bus priority classifications for the region. The Bus Priority Vision identifies a need for Very High or High intensity bus priority along 70% of the FTN, which could include all-day bus lanes or peak-hour bus lanes.

FTN Bus Priority Vision by Category



Planning For Future Rapid Transit

The Bus Priority Vision map shown above reflects our region's near-term plans for BRT. As illustrated on page 94, the 10 Year Priorities/Access for Everyone plan identifies **nine** new BRT corridors, applying Transport 2050.

- **Three** of these corridors are identified as near-term and will be advanced to BRT or Rapid Transit immediately. (Rapid Transit is characterized by high carrying capacity and speed, frequency, and reliability; it is typically provided by transit technologies such as rail rapid transit, light rail transit, and bus rapid transit.)
- The remaining **six** corridors can still benefit from incremental bus priority measures.

The Vision is based on existing delay. Future concept plans for these corridors should consider solutions that are either "early wins" for BRT implementation or "temporary" measures that are low cost or have quick payback periods.

King George Boulevard, served by the R1 RapidBus line, is one of three priority BRT corridors being advanced to further planning for near-term Rapid Transit.

NETWORK INTEGRATION

The Bus Priority Vision considers the needs of other modes.

Transit is the most efficient mode for moving the most people. It should be reliable, convenient, and provide direct access to destinations. But buses share roadway space and sometimes a single street doesn't have room for everything. We need to manage our streets to achieve common objectives. These are some of the other needs that must be considered in the overall transportation network.

- We depend on **freight and goods movement** to meet our daily needs and allow our economy to grow and thrive. Manufacturing/industrial centers and business districts need to have reliable connections to the freight network.
- **Cycling** creates zero emissions and provides easy access for shorter trips. There should be safe and convenient routes so people can access businesses, schools, parks, transit stops, and other destinations. The Bus Priority Vision supports future expansion of the cycling network, including cycling facilities on parallel streets to support greater transport network modal integration.
- Thriving business districts require **commercial streets** that are inviting, comfortable for walking, support access for deliveries, and enable people to arrive safely by all modes.

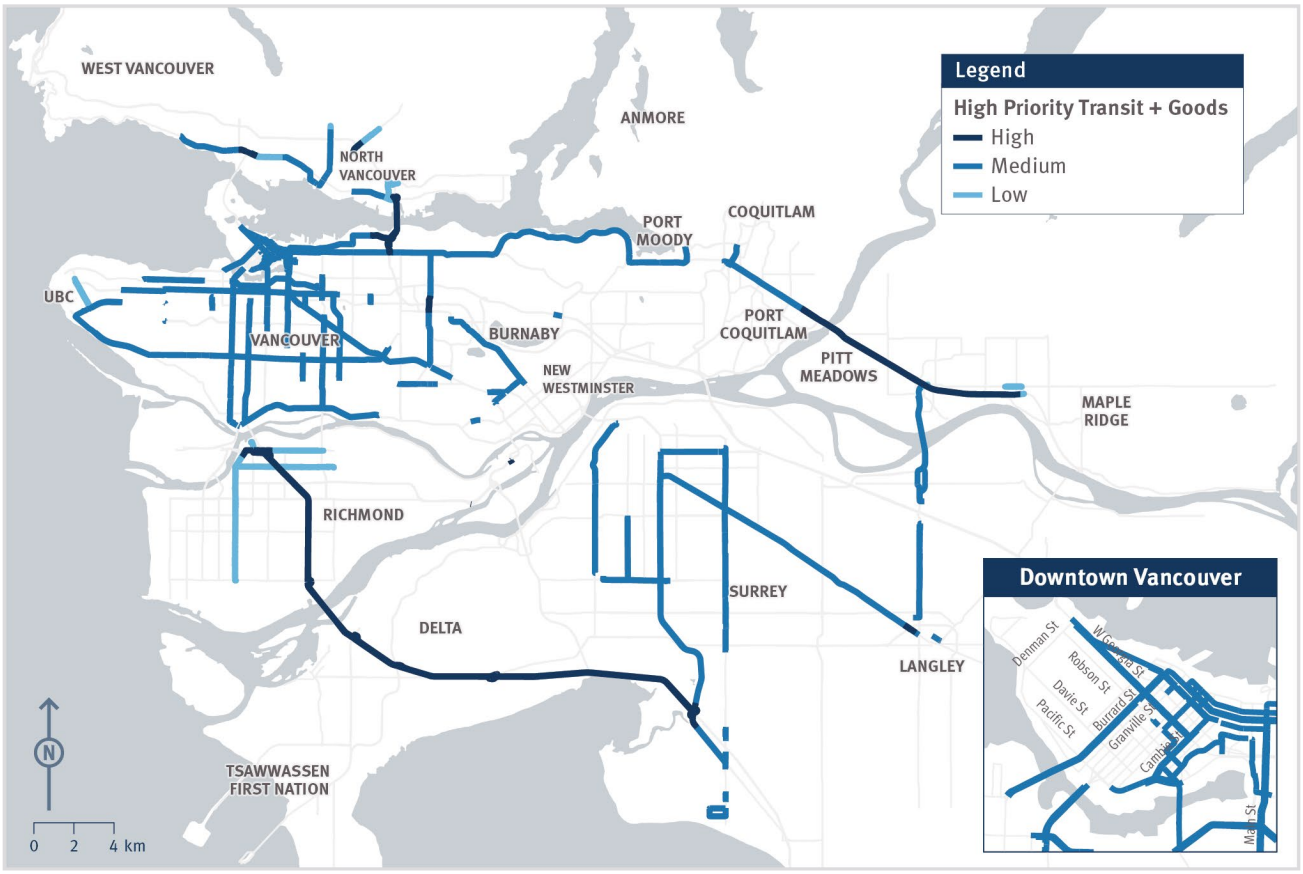
We have identified where we have overlapping needs for roadway space along with solutions to help integrate multiple modes in our transportation system.

The maps on pages 107 to 110 illustrate where implementing High and Very High intensity bus priority is likely to overlap with our needs to move goods, facilitate safe and convenient travel for people cycling, and/or provide access to businesses for people and deliveries. The accompanying graphics describe bus priority improvements that may provide a "win-win" solution where needs overlap.

Together with local governments, TransLink co-funds and co-manages the Major Road Network, which includes hundreds of kilometres of key roads connecting major destinations for people and goods. Investments in the Major Road Network will help advance regional objectives for improving safety and moving people and goods along these regional roads. These investments will also ensure roads are maintained in a state of good repair to support emergency response.

Buses are essential to effective streets planning, providing high people-moving capacity with limited space. TransLink's streets program also includes expanded funding for improving bus speed and reliability (see the Bus Priority Infrastructure portion of this report, starting on page 43, for information) to be carefully planned in coordination with other street uses and street changes.

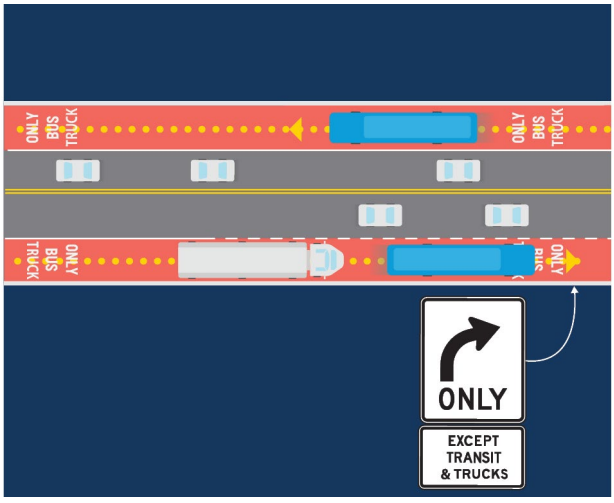
High Priority Transit and Goods Network



This map shows the overlap between transit network (streets identified for peak or all-day bus lanes) and goods movement network priorities. **High** includes overlap with provincial highways. **Medium** includes overlap with designated municipal truck routes (with or without truck travel restrictions) and limited sections of provincial highways (UBC). **Low** includes overlap with municipal roads with no truck travel restrictions.

Note: The major road types in the Goods Network are based on TransLink's Regional Truck Route Network.

Bus and Truck Lanes Along Freight Routes



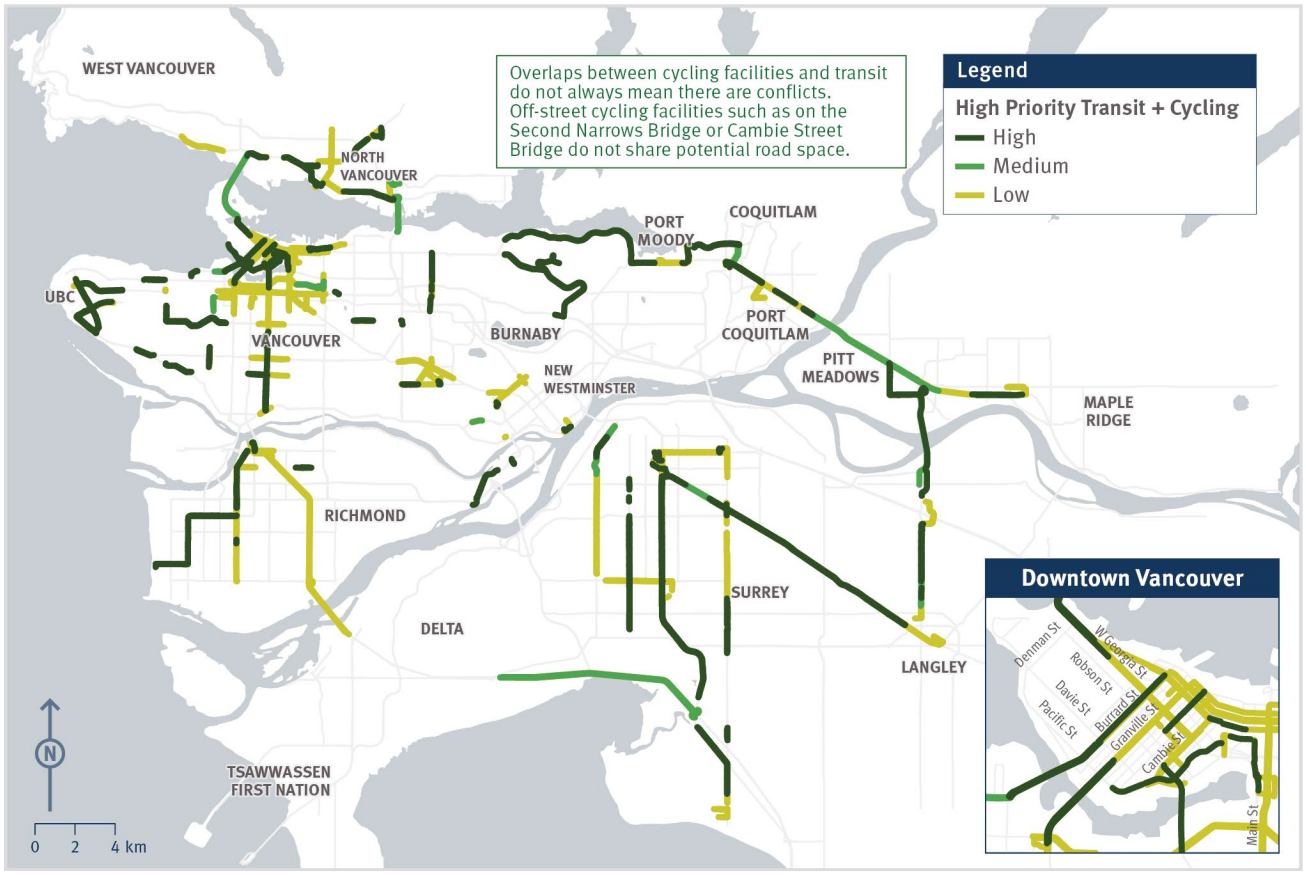
Freight and bus lanes could help provide efficient and reliable travel by buses and freight through congested parts of our transportation network.

Bus and Truck Lanes in Other Regions

Cities are experimenting with improvements that both provide bus priority and address freight bottlenecks.

- The City of **Boston** and the MBTA launched a six-month bus/truck lane pilot on Summer Street in December 2023. The project will address delay to buses and truck traffic from the port, and will include protected bike lanes.[44]
- The City of **Seattle** is piloting freight and bus lanes (FABs) on Westlake Avenue N, north of downtown Seattle. Larger trucks (more than 12,000 kg) would be allowed to use the FABs. The City's policy is that FABs would not be used where there are more than 30 buses per hour during peak periods.[45]

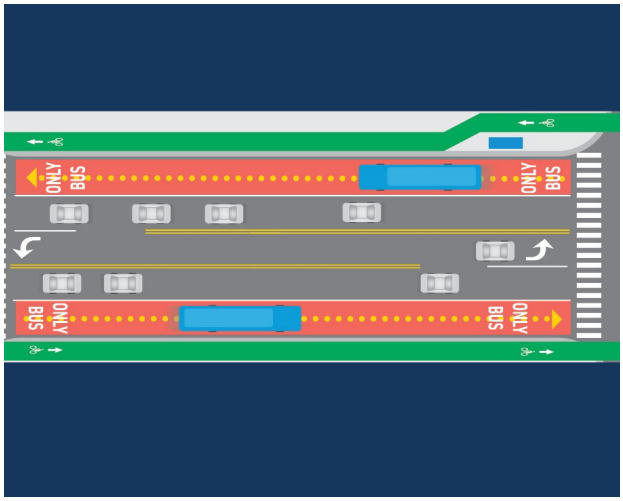
High Priority Transit and Existing and Future Cycling Network



This map shows the overlap between transit network (streets identified for peak or all-day bus lanes) and cycling network (streets that are identified or established as part of the cycling network) priorities. **High** includes overlap with on-street bicycle facilities and in-progress or completed facilities as part of the Municipal Funding Program. **Medium** includes overlap with the existing Major Bike Network. **Low** includes overlap with the proposed Major Bike Network, Frequent Transit Development Areas, or Urban Centres.

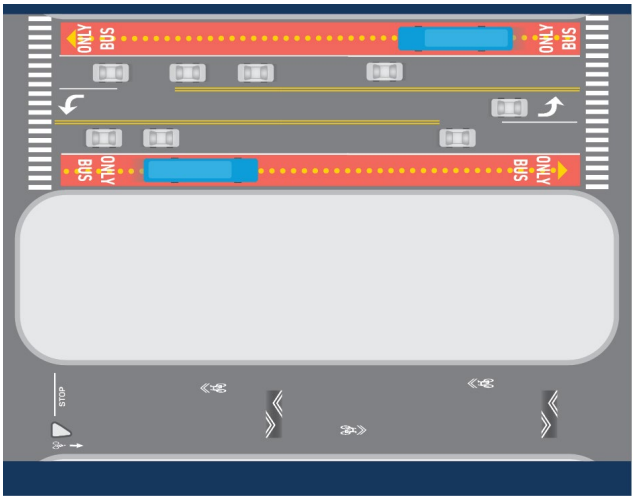
Note: On-street bicycle facilities are from TransLink's State of Cycling work. Major Bike Network infrastructure is defined by the Bicycle Infrastructure Capital Cost Share (BICCS) Program.

Bus Lanes and Bike Facility on the Same Street



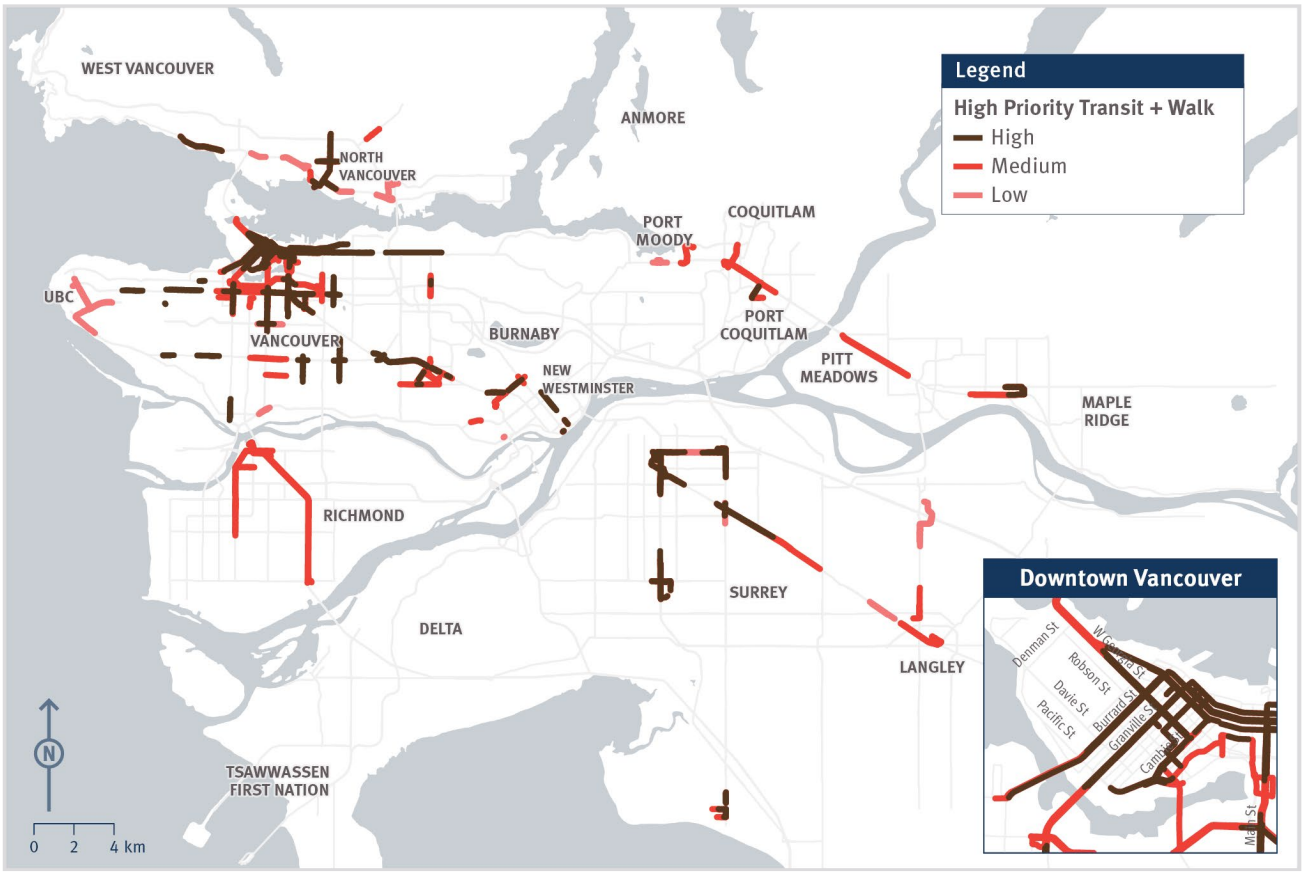
When bus lanes and protected bike lanes are implemented on the same street, “floating” bus stops are one solution to allow people getting on and off the bus to cross the bike lane, which runs between the bus stop and the sidewalk.

Bike Facility on a Parallel Street



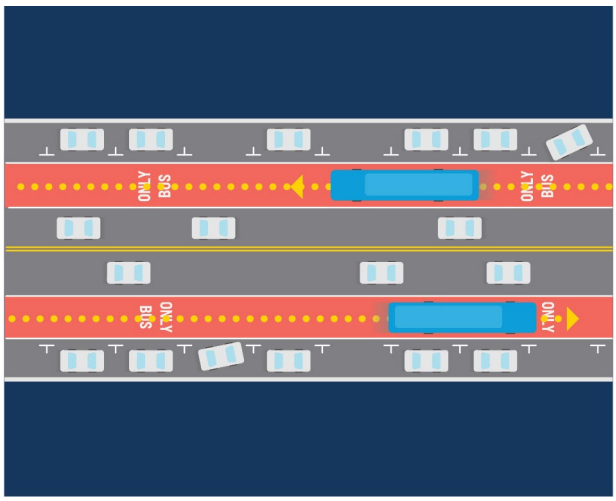
When a street doesn't have room for appropriate cycling infrastructure, a nearby parallel street may be considered if it provides a safe and direct alternative route.

High Priority Transit and Walking and Commercial Streets



This map shows the overlap between transit network priorities (streets identified for peak or all-day bus lanes) and Commercial Streets (approximated by Business Improvement Associations and/or presence of metered on-street parking) that are important for walking and access to businesses. **High** includes overlap with Business Improvement Areas or commercial parking (including paid parking). **Medium** includes overlap with Urban Centres. **Low** includes overlap with Frequent Transit Development Areas.

Offset Bus Lanes in Commercial Districts

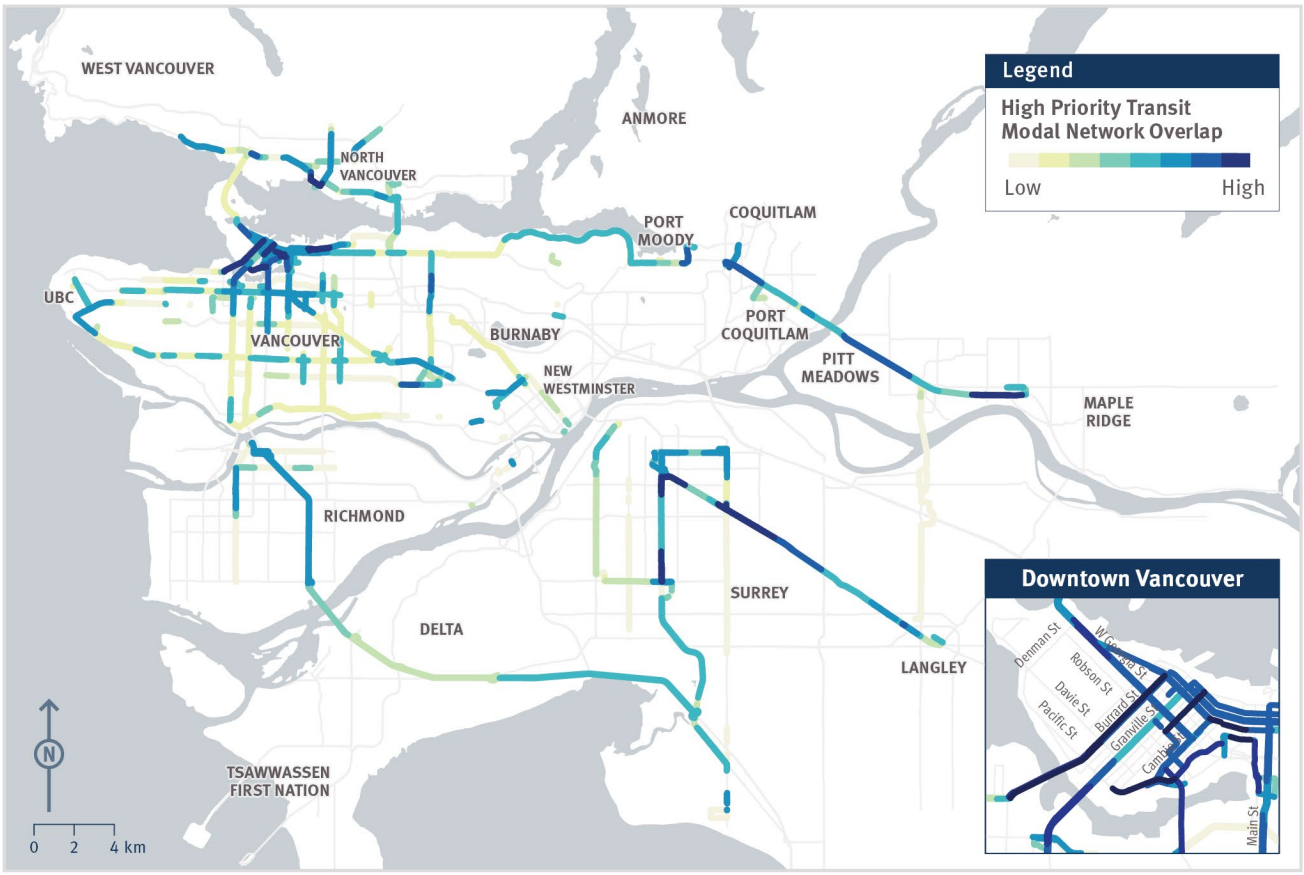


Offset bus lanes preserve parking and loading along the curb in business districts.

Offset transit lanes on West Keith Road maintain on-street parking near a commercial area.

Source: Google Maps

High Priority Transit and Goods Movement, Current/Future Cycling Network, and Walking and Commercial Streets



This map shows the overlap between transit network priorities (streets identified for peak or all-day bus lanes) and all other network priorities (Goods Movement, Cycling, and Walking and Commercial Streets), considering both the number and intensity (High, Medium, or Low) of overlaps.

SUB-REGIONAL BREAKDOWN OF OPPORTUNITIES

Opportunities for bus priority vary by sub-region. Several types of opportunities, particularly traffic signal priority or optimization and bus stop balancing, are most effective along a full corridor or route. Bus lanes may also be more effective along longer extents of corridors. This section quantifies opportunities for these corridor-wide improvements within each sub-region.

Appendix A provides maps showing the Bus Priority Vision for each sub-region along with summary statistics.

Potential for Signal Priority or Optimization

Traffic signals at intersections control the flow of vehicles, goods, and people. Traffic signal improvements include active signal priority, passive signal priority (e.g., optimization of signal phasing and timing), and bus-specific signals. Signal priority reduces the amount of time buses have to wait at a traffic light and signal optimization improves general traffic flow along a corridor.

As shown in the table at right, the Vancouver/UBC sub-region has slightly less than half of the signals along the FTN.

Number of Traffic Signals along FTN by Sub-Region

Sub-Region	#	% of Signals on FTN
Burnaby/New Westminster	85	12%
Maple Ridge/Pitt Meadows	27	4%
North Shore	57	8%
Northeast Sector	39	5%
Southeast	85	17%
Southwest	38	7%
Vancouver/UBC	340	47%
FTN Total	**671**	**100%**

Potential for Bus Stop Balancing

Bus stop balancing optimizes the spacing (distance) between bus stops along a route. Stops that are too frequent and close together increase travel time, but stops that are too far apart may mean less opportunity to access bus services and destinations. The need for fast and reliable service is balanced with providing convenient access to the system.

As shown in the table at right, nearly half of all stops on the FTN are spaced closer than 300m apart, which is TransLink's minimum spacing guideline for the FTN.[46]

- The Vancouver/UBC and North Shore sub-regions have the highest share of FTN segments that are shorter than the guideline—56% and 60% of segments in those sub-regions, respectively.
- Over half of all FTN segments that are shorter than 300m are in the Vancouver/UBC sub-region.

FTN Stops and Segments with less than 300m Spacing

Sub-Region	% of Stops on FTN below 300m	# of FTN Segments below 300m	% of FTN Segments below 300m (systemwide)
Burnaby/New Westminster	44%	225	12%
Maple Ridge/Pitt Meadows	39%	40	2%
North Shore	60%	238	13%
Northeast Sector	30%	53	3%
Southeast	28%	182	10%
Southwest	43%	110	6%
Vancouver/UBC	56%	1,039	55%
FTN Total	**48%**	**1,887**	**100%**

Note: A segment connects two bus stops along a corridor; duplicate segments were excluded from the statistics.

Potential for New Bus Lanes

Bus lanes are a key bus priority treatment for corridors with the most delay. Different types of bus lanes are possible dependent on the street context, including presence of on-street parking for access to businesses and destinations, adjacent facilities for bicycles, and facilities used for goods movement.

The Bus Priority Vision identifies a need for Very High or High intensity bus priority along 70% of the FTN, which could include all-day bus lanes or peak-hour bus lanes, respectively. Excluding sections of the FTN already served by a bus or HOV lane, this means new bus lanes could be considered as a potential solution on approximately half of the FTN, as shown in the table at right.

Potential for New Bus Lanes

Sub-Region	All-Day Priority (km)	Peak-Hour Priority (km)	% of FTN (within subregion)
Burnaby/New Westminster	42	0	35%
Maple Ridge/Pitt Meadows	24	0	60%
North Shore	23	16	65%
Northeast Sector	16	8	60%
Southeast	70	42	85%
Southwest	25	10	35%
Vancouver/UBC	159	34	50%
FTN Total	**358**	**110**	**50%**

Note: Calculated as the length of FTN sections identified with a need for Very High or High intensity bus priority, accounting for existing all-day or peak-hour bus/HOV lanes, respectively, in place through the end of 2023.

POTENTIAL SOLUTIONS FOR PROFILE AREAS

We identified potential solutions to address delay along some of our most congested and well-used bus corridors.

In the previous parts of this report, we identified 20 Profile Areas covering less than 15% of our network but representing over a third of total bus-delay and nearly half of person-delay (see page 42). We also identified issues for bus speed and reliability, with input including from bus operators, service planners, and municipal partners. In this part of the report we identified potential solutions that could be appropriate to address issues causing delay along each of these profile areas and make transit faster and more reliable.

Appendix B provides information about delay, issues causing delay, and potential bus priority solutions for profile areas.

In identifying potential solutions, we considered and adjusted for factors including:

- The locations, time-of-day, duration, and intensity of bus delay (refer back to previous sections).
- Locations where bus priority solutions would need to be integrated with other transportation needs, including for goods movement, travel by bicycle, and access to businesses.

The purpose of this work was to guide the intensity of potential priority solutions identified in the Bus Priority Vision and set the stage for future work with our local government partners. Project design and implementation will include more detailed analysis of potential solutions, such as traffic analysis for some types of solutions. As more detailed planning and design take place, we will look to identify solutions that are "win-wins" such as widening sidewalks and preserving loading zones in business areas.

Potential Solutions

Key Issues	Intersection Operations *Signal priority, phasing, coordination*	Left- and Right-Turn Solutions *Turn pockets, turn restrictions*	Queue Jumps and Approach Lanes	Bus Lanes *All-Day, Peak-Hour Lanes*	In-Lane Bus Stops	Bus Stop Balancing
Delay from left turns	●	●	●	●		
Delay from right turns	●	●	●	●		
Congestion	●	●	●	●		
Stop re-entry			●	●	●	
Short spacing between bus stops						●

FROM VISION TO IMPLEMENTATION

Our vision for bus priority throughout our region is achievable

Modal priority reflects the services and destinations that each street supports and balances efficiency of the transportation system in moving people. Transit is the most efficient mode for moving the most people. Investments in bus priority should benefit the most people. Our transit network should also integrate with and support the needs of other roadway users such as freight and goods movement and people who walk, cycle, and roll to access jobs, services, and destinations. Buses share roadway space with these other roadway users and the individual needs of each mode sometimes require more space than is available. Providing priority to public transit may require integrated solutions that balance the needs of other modes, ensuring that everyone has safe, convenient access to essential services and destinations.

The cities in our region play a critical role in bus priority. Developing bus priority solutions requires close collaboration with local government staff and leaders, who help shape projects based on local knowledge of conditions and relationships with key stakeholders. Local governments contribute funding and have the ability to efficiently deliver improvements by integrating bus priority elements into planned roadway maintenance and other capital projects. Public and stakeholder engagement from early project stages through project delivery also requires close coordination between TransLink, local governments, and BC MOTI.

Investing in bus priority projects in the near-term will provide long-term benefits. Funding for expanded bus priority investments will be included in TransLink's next 3-Year investment plan, starting in 2025. As part of this effort, TransLink will quantify regionwide transit benefits from implementing the Bus Priority Vision. Investing in bus priority will help us to achieve the sustainable development goals set out in Metro 2050 and continue to support sustainable transportation options. Investing in bus priority also supports social equity and accessibility; prioritizing bus priority investments serving people who rely on bus travel as their sole mode of transportation shows the region's dedication to providing safe, reliable travel for everyone.

The region needs to act now to address the cost of delay. Over $80 million of operating cost per year is attributable to roadway delay. Each year, TransLink adds over $2 million of service to offset the impacts of traffic and roadway congestion. Bus priority projects improving bus speed and reliability are urgently needed to improve bus travel and allow us to invest our resources in delivering better service.

Endnotes

1 TransLink, 2021 Transit Service Performance Review, page 15.

2 TransLink, 2021 Transit Service Performance Review, page 16.

3 Bus loads measured by TransLink Automated Passenger counts; Vehicle estimates from StreetLight Data.

4 TransLink Ridership Recovery Update Report, August 30, 2022.

5 TransLink System Analytics, 2018–2021, based on Compass farecard data.

6 TransLink, 2021 Transit Service Performance Review, page 20.

7 TransLink, 2021 Transit Service Performance Review, page 16.

8 TransLink, 2021 Transit Service Performance Review, page 16.

9 https://www.thestar.com/news/canada/2022/05/25/translink-says-ridership-recovery-outpacing-other-north-american-systems.html. SkyTrain lines rebounded by between 54% and 57% over the same period.

10 Bus loads measured by TransLink Automated Passenger counts; Vehicle estimates from StreetLight Data.

11 Metro Vancouver, Housing and Transportation Cost Burden. Data from 2011.

12 A TransLink annual pass saves over 75% of the typical cost of owning a car. Source: Estimated total annual driving costs from https://carcosts.caa.ca/ (British Columbia, Compact). Cost of TransLink Annual Transit Pass from https://www.translink.ca/transit-fares/pricing-and-fare-zones (Compass 3 Zone). The yearly savings is $7,077.

13 Based on data from https://carcosts.caa.ca/ (car) and https://www.translink.ca/transit-fares/pricing-and-fare-zones (bus).

14 Vehicles: Based on up to 800 to 1,100 vehicles per lane per hour, and 1.3 people per vehicle on average. Buses: Based on 95 people per bus, at 75% to 100% of capacity and up to 20 buses per hour per direction in mixed traffic (every 3 minutes) and up to 40 buses per hour per direction in a priority lane (every 1.5 minutes).

15 Existing: Vehicles – Based on existing vehicles per direction along Hastings Street at Gilmore in the PM Peak hour and 10% of vehicles in the HOV lane and 1.3 people per vehicle on average. Buses – Based on existing transit volumes on Hastings at Gilmore (Fall 2019).

16 Conceptual with Bus Lanes: Vehicles – Based on up to 1,000 vehicles per lane per hour, and 1.3 people per vehicle on average. Buses – Based on 95 people per bus, at ~85% of capacity (85 people), and up to 30 buses per hour per direction in a priority lane (every 2 minutes), plus a local bus with 50 people every 10 minutes.

17 TransLink, Climate Action Strategy, January 2022, page 5.

18 Metro Vancouver, Greenhouse Gas Emissions Inventory, 2019.

19 Metro Vancouver, Climate 2050 Roadmap: Transportation, November 2021, page 22-23.

20 TransLink, Climate Action Strategy, January 2022, page 5.

21 TransLink, Low Carbon Fleet Transition Plan, 2020.

22 Hastings Street in Burnaby Heights. The estimate of people traveling through the corridor was based on traffic counts, bus volumes, and bus passenger loads at Gilmore Street in Fall 2019. It assumed each auto carried 1.3 passengers, which is the regional average.

23 The Centre for Active Transportation. Complete Streets in The 15 Minute City, https://www.completestreetsforcanada.ca/wp-content/uploads/2021/02/Complete-Streets-and-the-15-Minute-City.pdf

24 New York City Department of Transportation. The Economic Benefits of Sustainable Streets, https://www.nyc.gov/html/dot/downloads/pdf/dot-economic-benefits-of-sustainable-streets.pdf

25 The City of Toronto. ActiveTO Midtown Complete Street Pilot Public Intercept Survey Evaluation Report, https://www.toronto.ca/wp-content/uploads/2022/03/970b-8705-atm-intercept-studyAODA-Compliant.pdf

26 San Francisco Municipal Transportation Agency. Results of Intercept Survey. https://www.sfmta.com/sites/default/files/projects/2015/14_Survey_Summary.pdf

27 Downtown Seattle Association. Tourists spend $195 a day in downtown Seattle—that's twice as much as local visitors. https://downtownseattle.org/2017/12/tourists-spend-195-day-downtown-seattle-thats-twice-much-local-visitors/

28 Range between 20th and 80th percentile travel times.

29 Data is based on the comparison of bus speeds on weekdays in February 2020 to speeds in April 2020, for AM peak, midday, and PM peak hours. Values exclude dwell time.

30 Data represents savings on Rapid, All-Day Frequent and Peak Frequent routes. Savings on other routes are not included, but would increase these values.

31 See Figure 4 of the 2021 Transit Service Performance Review, page 19, for a chart illustrating boardings by time of day in Fall 2021 compared to Fall 2019.

32 TransLink, 2021 Transit Service Performance Review, page 12.

33 Transport 2050: 10-Year Priorities for TransLink. https://www.translink.ca/-/media/translink/documents/plans-and-projects/regional-transportation-strategy/transport-2050/t2050_10yr-priorities.pdf

34 Transport 2050: 10-Year Priorities for TransLink. https://www.translink.ca/-/media/translink/documents/plans-and-projects/regional-transportation-strategy/transport-2050/t2050_10yr-priorities.pdf

35 The number of routes does not include night bus or the two pre-existing routes that were launched as RapidBus routes.Transport 2050: 10-Year Priorities for TransLink. https://www.translink.ca/-/media/translink/documents/plans-and-projects/regional-transportation-strategy/transport-2050/t2050_10yr-priorities.pdf

36 King County Metro, MetroConnects, p. 22. https://kingcounty.gov/~/media/depts/metro/about/planning/metro-connects/metro-connects-final.pdf

37 https://www2.gov.bc.ca/gov/content/transportation/driving-and-cycling/traveller-information/routes-and-driving-conditions/hov-lanes

38 https://www.nytimes.com/2019/11/20/realestate/14th-street-manhattan-a-congested-thoroughfare-transformed.html; https://www.masstransitmag.com/safety-security/article/21282903/mta-expands-use-of-automated-bus-lane-enforcement-technology

39 https://www.seattle.gov/police/community-policing/community-programs/transit-only-lane-enforcement; https://sdotblog.seattle.gov/2022/02/16/dont-block-the-box-traffic-cameras/

40 Anecdotally, most of the buses merge out of the bus lane to bypass right-turning cars at this time of day.

41 Based on the number of riders on board buses entering an area with transit priority, plus riders boarding within that area.

42 The Twin Cities region has a wide network of lanes designated all-day busways lanes on freeways and highways (including use of shoulders), making it an outlier among agencies; all-day lanes of freeways and limited access highways were excluded from the comparison of all-day bus lanes.

43 Data for SFMTA reflects only bus-only lanes within the City of San Francisco, and does not include rail-specific transit-lanes in the city.

44 City of Boston, Summer Street Pilot Program Website, https://www.boston.gov/departments/transportation/summer-street-multimodal-corridor-improvements, and Brochure, https://www.boston.gov/sites/default/files/file/2023/08/Summer%20Street%20Pilot%20Program_brochure.pdf

45 City of Seattle, Route 40 Freight-and-Bus Only Lane Pilot Project, February 2024. https://www.seattle.gov/documents/Departments/SDOT/BoardsCommittees/SBAB/Freight%20Lane%20Policy%20-%20briefing%20-%202022-06-01%20-%20web.pdf and Draft Freight Lane Policy, June 2022, https://sdotblog.seattle.gov/2024/02/07/freight-and-bus-only-lanes-route-40-project/

46 TransLink Transit Service Guidelines, p. 13. https://www.translink.ca/-/media/translink/documents/plans-and-projects/managing-the-transit-network/transit-services-guidelines-public-summary.pdf