



PUBLIC MEETING AGENDA

Revised: April 27, 2021

April 29, 2021, 9:00AM to 10:00AM

Via Videoconference (live streamed to [Mayors' Council YouTube Channel](#))

Chair: Mayor Jonathan X. Coté

Vice-Chair: Mayor Jack Froese

Note that times for each agenda item are estimates only. This meeting will be livestreamed and available afterwards on the [Mayors' Council's YouTube channel](#).

8:50AM	<i>Technology Test: Members please connect to the meeting early, by 8:50AM, to provide time to trouble-shoot any connection problems.</i>	
9:00AM	1. PRELIMINARY MATTERS	
	1.1. Adoption of agenda	Page 1
	1.2. Approval of Minutes (April 1, 2021)	2
9:05AM	2. PUBLIC DELEGATES	7
9:25AM	3. REPORT OF THE EXECUTIVE DIRECTOR	
Report added	3.1. Federal and Provincial Budget Update	62
9:35AM	4. REPORT OF THE FINANCE AND GOVERNANCE COMMITTEE	
	4.1. Low Carbon Fleet Strategy Implementation	8
9:45AM	5. REPORT OF THE NEW MOBILITY COMMITTEE	
	5.1. Overview of Transport 2050 Phase 2 Public Engagement	15
9:55AM	6. OTHER BUSINESS	
	6.1. Next Meeting (via videoconference) – May 27, 2021	
10:00AM	7. ADJOURN to closed session	

Note that Mayors' Council members and Public Delegates will be participating via Zoom videoconferencing. Zoom connection information sent separately via e-mail.

MEETING OF THE MAYORS' COUNCIL ON REGIONAL TRANSPORTATION

DRAFT PUBLIC MEETING MINUTES

Minutes of the Public Meeting of the Mayors' Council on Regional Transportation (Mayors' Council) held Thursday, April 1, 2021 at 9:00 a.m. via videoconference.

PRESENT:

Mayor Jonathan Coté, New Westminster, Chair
Mayor Jack Froese, Langley Township,
Vice-Chair
Chief Ken Baird, Tsawwassen First Nation
Mayor Malcolm Brodie, Richmond
Mayor Linda Buchanan, North Vancouver City
Councillor Craig Cameron, West Vancouver
(arrived at 9:07 a.m.)
Mayor Bill Dingwall, Pitt Meadows
Mayor George Harvie, Delta
Mayor Mike Hurley, Burnaby
Mayor Mike Little, North Vancouver District
(arrived at 10:18 a.m.)

Mayor Doug McCallum, Surrey
Director Jenn McCutcheon, Electoral Area A
Mayor John McEwen, Anmore
Mayor Ron McLaughlin, Lions Bay
Mayor Mike Morden, Maple Ridge (arrived at
10:24 a.m.)
Councillor Alison Morse, Bowen Island
Mayor Jamie Ross, Belcarra
Mayor Richard Stewart, Coquitlam
Mayor Rob Vagramov, Port Moody
Mayor Val van den Broek, Langley City
Mayor Darryl Walker, White Rock
Mayor Brad West, Port Coquitlam

REGRETS:

Mayor Kennedy Stewart, Vancouver

ALSO PRESENT:

Michael Buda, Executive Director, Mayors' Council on Regional Transportation Secretariat
Gigi Chen-Kuo, Interim Chief Executive Officer, TransLink
Ilan Elger, Manager, Transportation Forecasting, TransLink
Geoff Cross, Vice-President, Transportation and Planning, TransLink
Rex Hodgson, Manager, System Plans, TransLink
Eve Hou, Manager, Policy Development, TransLink
Sarah Ross, Director, System Planning, TransLink
Steve Vanagas, Vice-President, Customer Communications and Public Affairs, TransLink

PREPARATION OF MINUTES:

Carol Lee, Recording Secretary, Mosaic Writing Group

CALL TO ORDER

Chair Jonathan Coté declared that a quorum was present and called the meeting to order at 9:00 a.m.

Chair Coté acknowledged that the meeting is taking place on the unceded and traditional territories of the Halq'eméylem, Semiahmoo and Skwxwú7mesh speaking people. These refer to the language groups that more widely encompass the Indigenous people of many nations who use and continue to use the land on whose territories TransLink works, operates and serves. As a council, we recognize the importance of doing our best to build respectful relationships that contribute to stewarding the land and waters in the community with integrity and consideration for future generations.

1. PRELIMINARY MATTERS

1.1. Adoption of the Agenda

Draft agenda for the April 1, 2021 Public Meeting of the Mayors' Council on Regional Transportation, version dated March 30, 2021, was provided with the agenda material.

It was MOVED and SECONDED

That the agenda of the April 1, 2021 Public Meeting of the Mayors' Council on Regional Transportation be adopted, as presented.

CARRIED

1.2. Approval of Minutes (February 25, 2021)

Draft minutes of the February 25, 2021 Public Meeting of the Mayors' Council on Regional Transportation was provided with the agenda material.

It was MOVED and SECONDED

That the minutes of the February 25, 2021 Public Meeting of the Mayors' Council on Regional Transportation be adopted, as presented.

CARRIED

2. PUBLIC DELEGATES

Report titled "Item 2 – Public Delegate Presentations", dated March 23, 2021, was provided with the agenda material.

2.1. Connie Hubbs

Ms. Hubbs recommended actions that could be taken by TransLink to attract transit ridership.

Member Arrived

Councillor Craig Cameron joined the meeting at 9:07 a.m.

3. REPORT OF TRANSLINK MANAGEMENT

Gigi Chen-Kuo, Interim Chief Executive Officer (CEO), TransLink, led the review of the presentation titled "TransLink Management Report" and highlighted:

- Commencement of public engagement on the HandyDART Modernization Program
- Elements of the SkyTrain Customer Communications Upgrades Program
- Launch of the Regional Bike Monitoring Program
- Support to local health authorities for the COVID-19 vaccine rollout
- Development of a ridership recovery plan for the post-pandemic environment.

It was MOVED and SECONDED

That the Mayors Council on Regional Transportation receive this report.

CARRIED

3.1. COVID-19 Ridership Update

Report titled "Item 3.1 – Ridership Update", dated March 28, 2021, was provided with the agenda material.

Geoff Cross, Vice-President, Transportation and Planning, and Ilan Elger, Manager, Transportation Forecasting, TransLink, led the review of the presentation provided with the agenda material and highlighted:

- Development of a new forecasting approach to provide support for future decisions
- Ridership changes across the transit system since the onset of the COVID-19 pandemic
- Recovery of transit ridership compared to Knight Street, Pattullo and Golden Ears Bridge volumes
- Significant uncertainties in underlying conditions that impact travel demand:
 - Employment
 - Willingness to share rides
 - Strength of economy and discretionary spending
 - Automobile ownership
 - Percentage of population that will work from home
 - Percentage of student population participating in distance learning
 - Fuel prices
- New forecasting approach explicitly considers many possible outcomes
- Forecasted "new normal" ridership and fare revenue post-pandemic
- 10-Year revenue loss and expenditure savings forecasts.

Discussion ensued on:

- Management's confidence in the exploratory modelling within the range
- The transition from transit usage to driving as a result of the pandemic
- The need to protect transit from the impact of traffic congestion
- Concern that the recently announced fare increase, and the bus stop rebalancing initiative will disincentivize transit ridership
- The 10-year revenue loss includes the impact of ridership decline and foregone fare increases
- Whether the modelling can differentiate between sectors and geographic areas
- TransLink's rate of ridership recovery from the pandemic compared to other cities in the world and other catastrophic events
- Suggestion to consider options to transition to free public transit and the elimination of fare increases in excess of the cost of inflation in the next investment plan.

It was MOVED and SECONDED

That the Mayors Council on Regional Transportation receive this report.

CARRIED

3.2. Update on Printed Transit Schedules

Report titled "Item 3.2 – Printed Timetables", dated March 25, 2021, was provided with the agenda material.

Steve Vanagas, Vice-President, Customer Communications and Public Affairs, TransLink, referenced the report provided with the agenda material and noted:

- Research undertaken to canvass how many customers use a printed timetable, where they normally obtain it and frequency
- Twenty-six requests for copies of printed timetables were received when the Fall and Winter Service Changes timetables were not printed and distributed
- Elements of the new focused distribution of printed timetables:
 - Email subscription
 - Mailed by request
- Launch of a customer education campaign to communicate the new alternative options to obtain a transit schedule and ensure those who require a printed version know they can still obtain one.

Member Arrived

Mayor Mike Little joined the meeting at 10:18 a.m.

Discussion ensued on:

- The need to ensure the information posted at TransLink bus exchanges are current
- Suggestion to work with municipalities to translate printed timetables into other languages to be accessible to newcomers.

It was MOVED and SECONDED

That the Mayors Council on Regional Transportation receive this report.

CARRIED

4. REPORT OF THE FINANCE AND GOVERNANCE COMMITTEE

4.1. COVID-19 Impacts on Long-Term Planning

Report titled "Item 4.1 – Response to COVID-19 Impacts – Progress Update on Near Term Actions", dated April 1, 2021.

Eve Hou, Manager, Policy Development, and Rex Hodgson, Manager, System Plans, TransLink, led the review of a presentation titled "Response to COVID-19 Impacts: update on Near Term Actions" and highlighted:

- COVID-19 impacts on the regional transportation system
- Key areas of progress to:
 - Rebuild ridership
 - Support walking and cycling
 - Discourage more driving

Member Arrived

Mayor Mike Morden joined the meeting at 10:24 a.m.

- Supporting digital trip substitution

- Ensuring e-commerce is delivered smartly with less impact
- Mitigating the negative household financial impacts of COVID-19
- Exploratory work with municipalities to support cycling:
 - Major Bikeway Network (MBN)
 - Urban Centre Bikeway Networks
- Redirecting some funding for regional cycling investments to support near-term actions in 2021:
 - Municipal funding application period from April 1 to 15, 2021
- Opportunity to leverage new federal funding.

Discussion ensued on:

- Concern regarding the equity of the aggressive timeline for the submission of funding applications given the capacity constraints at smaller municipalities
- The need to ensure that smaller municipalities, whose projects may not meet all the criteria, are provided with an equitable opportunity to obtain funding.

Action Item (01): *TransLink staff to distribute minutes of meetings with municipal partners regarding rapid deployment of funding for regional cycling investments to Mayors' Council members.*

It was MOVED and SECONDED

That the Mayors Council on Regional Transportation receive this report.

CARRIED

5. OTHER BUSINESS

5.1. Next Meeting

The next Public Meeting of the Mayors' Council was scheduled for April 29, 2021 and will be held via videoconference.

6. ADJOURNMENT

There being no further business, the April 1, 2021 Public Meeting of the Mayors' Council on Regional Transportation was adjourned to a Closed Session at 10:45 a.m.

Certified Correct:

Mayor Jonathan X. Coté, Chair

Carol Lee, Recording Secretary
Mosaic Writing Group

TO: Mayors' Council on Regional Transportation
FROM: Gemma Lawrence, Coordinator, Mayors' Council Secretariat
DATE: April 23, 2021
SUBJECT: **ITEM 2 – Public Delegate Presentations**

RECOMMENDATION:

That the Mayors' Council on Regional Transportation receive this report.

PURPOSE:

To introduce the objectives and process for hearing from public delegates.

BACKGROUND:

Public participation at meetings is valued by the Mayors' Council, and 30 minutes is set aside at each open meeting to receive public delegations. The Mayors' Council will only receive public delegations who intend to speak on matters that are within the authority of the Mayors' Council.

Individuals can apply to be a delegate by completing the online [Application Form](#) up until 8:00AM, two business days prior to the meeting. In situations where there isn't enough time to hear from everyone wishing to speak, the Mayors' Council encourages written submissions be sent to mayorscouncil@translink.ca.

The webpage for public delegates includes a Protocol for Public Delegates that notes:

- the Mayors' Council Chair will exercise discretion in maintaining a reasonable level of order and decorum;
- delegates and all meeting participants are reminded that different points of view are respected, and discussions are kept above the level of personal confrontation, disruptive behaviour and profanity.

DISCUSSION:

The deadline to apply to speak to the Mayors' Council is 8:00am two days prior to the meeting. At the time of this report, not all prospective speakers will have had a chance to complete applications. Accordingly, the **list of approved speakers, as well as any written submissions or presentations, will be provided on table**. Any presentations provided by delegates will also be provided to Mayors' Council members only, on table (up to 10-pages maximum). Each delegation will be given a maximum of three minutes to address the Mayors' Council. As a general rule, there are no questions or discussion between Council and delegates. The policy governing Public Delegates can be [found online](#).

TO: Mayors' Council on Regional Transportation

FROM: Geoff Cross, VP, Transportation Planning & Policy
Olga Kuznetsova, VP, Financial Services

DATE: April 16, 2021

SUBJECT: **ITEM 4.1 – Low Carbon Fleet Strategy Implementation**

RECOMMENDATIONS:

The Finance and Governance Committee recommends that the Mayors' Council on Regional Transportation:

1. Endorse the "aggressive" transition option in the Low Carbon Fleet Strategy as the default fleet plan and associated capital program in the next Investment Plan;
 2. Receive this report.
-

PURPOSE:

To confirm that the "aggressive" transition option in the Low Carbon Fleet Strategy will form the basis of fleet plan and capital program developed for the next Investment Plan.

BACKGROUND:

At their January 15, 2020 meeting, the Metro Vancouver Board adopted a new target of 45% reduction in greenhouse gas (GHG) by 2030 and carbon neutrality by 2050 and requested that TransLink align the Low Carbon Fleet Strategy with these new regional targets.

At their February 27, 2020 meeting, the Mayors' Council resolved to pursue the "Aggressive" approach in order to meet TransLink's greenhouse gas emissions targets and support Metro Vancouver's 2030 climate goals; and to continue to advocate federal and provincial funding to implement this "aggressive" approach.

On October 1, 2020, the Mayors' Council, as part of its 2021-22 Mandate Renewal, agreed to develop and approve the next Investment Plan to recover ongoing COVID-related losses, deliver the remaining elements of the Phase Two Plan and Phase Two Update Plan, including Surrey-Langley SkyTrain and Low-Carbon Fleet Strategy.

On January 26, 2021, TransLink awarded a contract to Nova Bus to purchase 15 battery electric buses. These buses will join 4 battery electric buses operating on Route 100 between New Westminster and Vancouver, which are part of our electric bus pilot in partnership with the Canadian Urban Transit Research & Innovation Consortium. When these buses enter service in 2023, the Route 100 will be all-electric operation.

At their January 29, 2021 meeting, the Metro Vancouver Board approved TransLink's 2021 application to the Greater Vancouver Regional Fund to, in part, purchase 57 battery electric buses and associated charging infrastructure. These buses will replace diesel buses at end of life and represent the first of a total of 591 conventional buses diesel or diesel-hybrid buses that are to be replaced with battery electric buses over the next ten years to meet adopted GHG emission targets.

The Mayors' Council has repeatedly expressed its desire for TransLink to pursue the decarbonization of our transit fleet and facilities and the Federal and Provincial Governments have announced capital programs that should offset much of the incremental capital costs of electrification; as a result, management are seeking endorsement to assume that our fleet and facilities plan will be a low-carbon approach from this point forward. Such a decision, on the part of the Board and Mayors' Council, would provide more certainty for our current and future capital programs, the development of our senior government funding strategy and assumptions for future Investment Plans.

DISCUSSION

TransLink's Aggressive Low Carbon Fleet Transition plan meets adopted GHG targets by replacing end-of-life diesel or diesel-hybrid buses with battery electric buses. Including charging infrastructure and additional buses required due to range limitations of battery technology, the total cost of the program is estimated at \$1.53 billion. This is approximately \$640 million more than would have been required for a diesel-hybrid alternative.

Investment Plan Fleet Assumptions

Management is preparing new Investment Plan for consideration by the Board and Mayors' Council. Previous Investment Plans assumed conventional buses at end-of-life would be replaced with the lowest life-cycle cost propulsion technology available at the time of replacement, typically a diesel-hybrid bus. Considering policy commitments at the regional, provincial and federal levels, Management proposes that this new Investment Plan include replacement of end-of-life buses with battery-electric buses, consistent with the aggressive low carbon transition approach. This will result in higher capital costs than previous assumptions, partially offset by fuel and maintenance savings achieved with electric buses. There are several funding and financing options available to fund these greater capital costs, discussed below.

Funding and Financing Options

As per the federal-provincial-UBCM agreement, the **Greater Vancouver Regional Fund (GVRF)** pools 95% of Metro Vancouver municipalities' federal Gas Tax Fund (GTF) allocations to support regional transportation projects delivered by TransLink. Projects funded with GVRF funding must be proposed by TransLink, typically through an Investment Plan, and approved by the Metro Vancouver Board.

The GVRF fund generates approximately \$140 million a year and grows at 2% annually. The Phase Two Investment Plan (2018-2027) forecasted spending \$1.74 billion in GVRF funding over the ten-year period for transit fleet expansion, fleet replacement, and system modernization projects. Recently announced GTF top-ups by the federal government and deferred service expansion present opportunities to fund electrification projects.

In addition, the following programs are developing and can be potential sources of funding "aggressive" fleet electrification.

- Ministry of Infrastructure and Communities, in collaboration with the Ministry of Innovation, Science and Industry announced \$2.75 billion of the Investing in Canada Infrastructure Program, will be allocated toward a plan to help buy 5,000 zero-emission buses nation-wide. This is a federal grant program.
- The BC Ministry of Energy, Mines and Low Carbon Innovation administers a program under its Part 3 Agreement which is project specific. The program ties specific projects to greenhouse gas savings in relation to fuel switching initiatives and provides carbon credits to public and private entities which can then be sold and used to fund the electrification project.
- To encourage the switch from carbon-based fuels to clean electricity, the Government of B.C. has allocated \$84 million of federal green infrastructure funding to create the CleanBC Facilities Electrification Fund.
- The Canada Infrastructure Bank announced funding of \$1.5 billion which targets the accelerated adoption of an estimated 4,000 zero emission buses, comprising of a mix a transit and school buses. The fund is available as a low interest loan.

NEXT STEPS:

Management will update its fleet and capital plans to reflect the "aggressive" transition option in the Low Carbon Fleet Strategy and will include it in our capital budgets and assumptions for all future Investment Plans. Staff will also update forecast operating and maintenance cost savings associated with electric operation, the scale of which is being confirmed through operational experience.

Management will continue to assess the funding and financing opportunities available to implement the transition plan with an objective of reducing the regional share of capital costs. If approved, the recommendation of this report will increase capital expenditure in the new Investment Plan by approximately \$640 million. While not yet fully confirmed, Management believes that there will be additional funding and financing sources available offset these additional capital expenditures.

ATTACHMENTS:

1. Presentation slides



Low Carbon Fleet Strategy Update

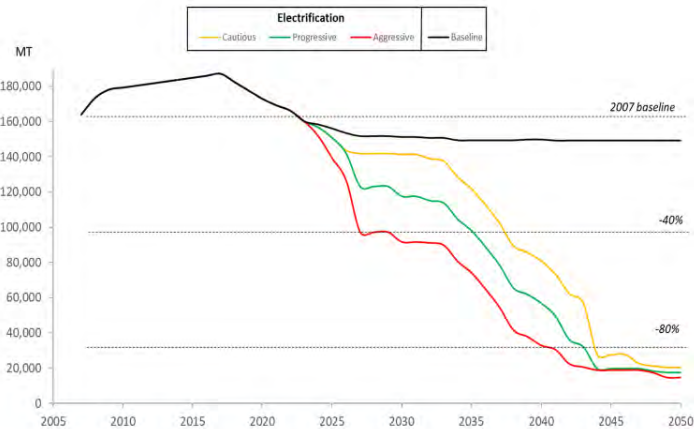
April 29th, 2021

T Together all the way



Background

- In 2018, the TransLink Board approved
 - **80% reduction of greenhouse gas emission** throughout TransLink and its operating companies:
 - Utilization of only **100% renewable energy** across the Enterprise by 2050
- In February 2020, the Mayors' Council committed to commence the "aggressive" bus electrification plan



T Together all the way



Implementation Update

- Route 100 Pilot: 15 additional battery-electric buses and one overhead fast-charger by 2023, adding to the 4-existing battery-electric buses currently in service. TransLink's first route capable of being fully electric.
- 57 battery-electric buses and associated charging infrastructure recently approved for funding through Greater Vancouver Regional Fund.
- New Marpole Transit Centre being designed for full electrification



Pivotal Transition Period for Bus Fleet

Almost 600 diesel buses are coming to end of life (~17 years) that can be replaced with Battery Electric Buses

2023: 57 (approved in 2021)
 2024: 142
 2025: 69
 2026: 236
 2029: 42
 2031: 45

Will result in 677 additional battery electric buses coming into the fleet in next 10 years, most of them in the next 5 years.

New Funding Opportunities to Offset Upfront Capital Costs

- \$2.75 billion of the Investing in Canada Infrastructure Program for Bus Electrification.
- The BC Ministry of Energy, Mines and Low Carbon Innovation carbon credit allocation and revenue.
- Province allocated \$84 million of federal green infrastructure funding to create the CleanBC Facilities Electrification Fund.
- Federal Government approved a one-year doubling of the Federal Gas Tax which will add \$140 million to the Greater Vancouver Regional Fund for 2022
- The Canada Infrastructure Bank \$1.5 billion in low interest loans for the accelerated adoption of an estimated 4,000 zero emission buses.

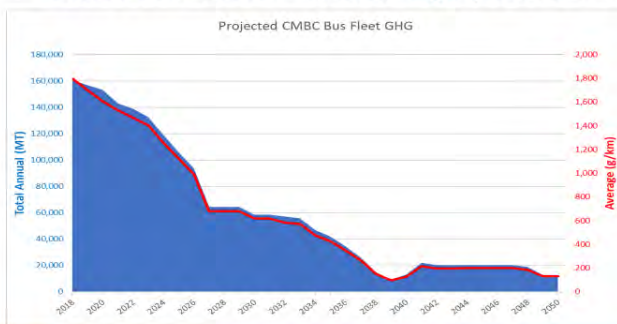
Benefits: GHG Changes & Operating Cost Savings

Projected GHG Reductions

- Achieves 45% reduction by 2030 which aligns with Metro Vancouver 2030 target
- Exceed 80% reduction by 2050 target (90% achieved)

Projected Cost Savings

- Fuel and maintenance savings projected to be **\$96M** from 2023 to 2031



RECOMMENDATION

That the Mayors' Council on Regional Transportation:

1. Endorse the “aggressive” transition option in the Low Carbon Fleet Strategy as the default fleet plan and associated capital program in the next Investment Plan;
2. Receive this report.

TO: Mayors' Council on Regional Transportation

FROM: Geoff Cross, Vice-President, Transportation Planning & Policy
Steve Vanagas, Vice-President, Customer Communications & Public Affairs

DATE: April 22, 2021

SUBJECT: **ITEM 5.1 – Overview of Transportation 2050 Phase 2 Public Engagement**

RECOMMENDATION(S):

That the Mayors' Council on Regional Transportation receive this report.

PURPOSE:

To describe the second phase of public engagement on Transport 2050, currently underway.

BACKGROUND:

Through the first half of 2019, Management worked with the Mayors' Council and Board – through the Joint New Mobility Committee – to begin updating our Regional Transportation Strategy. Through late 2019, the Committee considered input from the residents of the region, as summarized in the Phase 1 Engagement report. After a pause in work due to COVID-19, the project was re-launched in Fall 2020.

DISCUSSION:

The second of three phases of engagement on Transport 2050 will run from April 19 – May 14. In this phase, we're inviting the public to provide their views on four key questions.

Engagement Questions

The first engagement question relates to our draft goals. The next questions pertain to three especially transformative actions we're contemplating for inclusion in the final Strategy: creating more people-first streets, expanding rapid transit, and managing the arrival of automated vehicles.

1. The 2050 We Want: Draft Goals

In phase 1 we asked the public to share their values, concerns, and priorities. We translated what we heard into five draft goals that express what our transportation future should look like. They will guide the work of TransLink and regional partners over the next 30 years. The draft goals are:

- *Convenient Choices:* We all have abundant universally accessible choices allowing us to conveniently connect to opportunities without needing to rely on a car.
- *Reliable Choices:* We all have reliable choices that get us where we need to go on time.
- *Affordable Choices:* We all have affordable choices so that people of all incomes can easily live and move in this region.

- *Safe & Comfortable Choices*: We all have safe and comfortable choices that make us healthier and happier.
- *Carbon-Free Choices*: We all have carbon-free choices enabling us to achieve our Provincial and regional climate action targets.

The Phase 2 survey asks the public if these goals are on the right track or if any changes are needed.

2. People-First Streets That Invite Walking, Cycling, and Rolling

Most people would like to use active transportation more often but don't because of the stress and anxiety of travelling next to high-speed motor vehicle traffic. This anxiety is warranted given that 100 people are being killed in motor vehicle crashes in Metro Vancouver every year, 40 of whom are people who were walking or cycling.

This transformative action focuses on creating streets that make walking, biking, and rolling safer and more comfortable for most people by repurposing space on some streets for these active modes, making more convenient connections, and by reducing traffic speeds.

The Phase 2 survey asks the public about their level of support for these sorts of changes to streets.

3. Fast & Frequent Rapid Transit That's a Competitive Choice for Most Longer Trips

This proposed action is to significantly expand the length and reach of the rapid transit network.

Phase 2 Engagement asks the public about their preferred approach to this expansion. The survey presents two conceptual approaches – Network A and Network B - defined by the proportion of:

- rapid transit running in dedicated lanes at street level; and
- rapid transit running above or below the street in guideways or tunnels.

Both of these types of rapid transit offer very fast, frequent and reliable service. Where anticipated ridership volumes are very high, grade-separated transit offers higher capacity through its ability to run longer vehicles more frequently. However, it costs five times more to build this type of rapid transit and so Network A – which puts somewhat more emphasis on grade-separated rapid transit – would reach fewer neighbourhoods by 2050.

Network B – which puts somewhat more emphasis on street-level rapid transit – would take less time to bring online and reach relatively more neighbourhoods by 2050 but would require the conversion of some existing road space to exclusive use by transit.

4. Automated Vehicles That Provide Convenient Access to Car Trips Without Adding to Congestion

Automated vehicles (AVs) could start to become viable within a decade, and common by 2050. They have the potential to help people with mobility challenges, help reduce collisions, and make driving more energy efficient. Shared automated vehicles could serve multiple passengers around the clock. Reducing the number of cars on the road – and the amount of land used for parking.

However, the introduction of AVs carries risks. With our roads already strained, AVs could prompt more car travel. Including much longer trips, and more trips including trips with zero passengers. One of the key risks we need to manage is the potential for a substantial increase in traffic congestion.

The action proposed in this section is ensure that AVs provide convenient travel options without overwhelming the transportation system by:

- Promoting car sharing - creating incentives to make the sharing of vehicles easier, cheaper, and more convenient.
- Reducing the number of empty cars on the road - introducing fees to discourage AV trips without any passengers
- Reducing congestion - introducing fees for AVs to pick-up and drop-off in congested areas like downtowns and entertainment districts.

The Phase 2 survey asks the public about their level of support for these sorts of measures to help mitigate the negative congestion impacts of automated vehicles as they arrive on roads in our region.

Engagement Approach

The primary tool to collect public feedback is an online survey at [Transport2050.ca](https://transport2050.ca). TransLink is promoting the survey through advertising in digital and conventional media, social media channels, TransLink newsletters, and through partner and stakeholder networks. Dedicated efforts and more focused engagement are underway to reach out to historically under-represented groups including people who don't speak English, new Canadians, people with disabilities, youth, and people impacted by poverty and homelessness.

More focused engagement is underway with transportation stakeholders including the freight sector, business, labour, student, and environmental organizations. In addition, engagement is ongoing with First Nations, local governments, Metro Vancouver and the Provincial government.

To support informed feedback on these questions, a short discussion guide is available at [Transport2050.ca](https://transport2050.ca) (also in Attachment A). The survey itself includes a series of short videos that help explain the key issues under consideration. And for people who would like more detailed technical background on these proposed actions – three technical backgrounders are also available online at [Transport2050.ca](https://transport2050.ca). A call-in option is available for people without internet access.

CONCLUSION:

After a COVID-related pause, the Transport 2050 project is back up and running with the second phase of engagement now in market until mid-May. After which Management will provide the Mayors' Council with a summary of what he heard in order to inform the development of a draft of the full Strategy. This full draft will be the subject of the third and final phase of engagement in late summer / early fall, prior to seeking final approval by the Board and Mayors' Council in late 2021 or early 2022.

ATTACHMENTS:

- ATTACHMENT A: Transport 2050 – Phase 2 Discussion Guide
- ATTACHMENT B: Transport 2050 – Phase 2 Technical Backgrounders



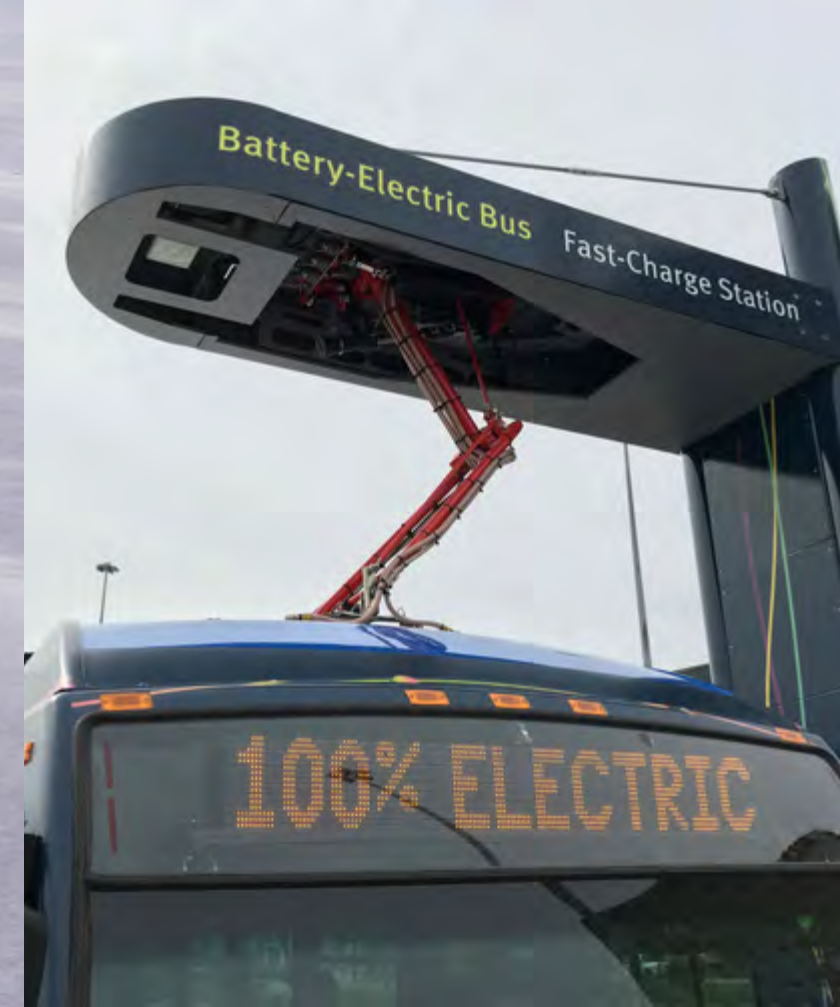
Phase 2

DISCUSSION GUIDE

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Introduction

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TransLink is leading the development of a new Regional Transportation Strategy

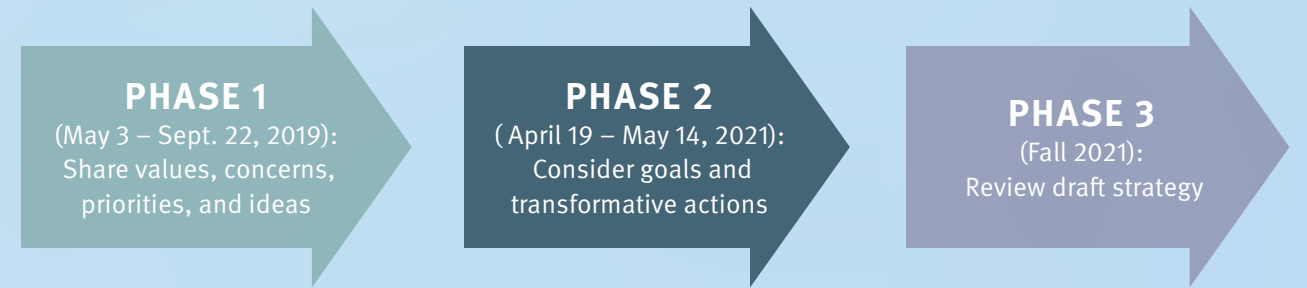
Transport 2050 aims to improve transportation for the people who live, work, and play in Metro Vancouver. As a shared strategy for the region – with actions for all levels of government – Transport 2050 will cover all modes of transportation.

Help us shape the future of how we move and live! Join us for a conversation on the next 30 years of transportation.

Transport 2050: Our largest-ever public engagement

A regional strategy needs regional input. That’s why we launched our largest-ever engagement to shape Transport 2050.

In Phase 1 of Transport 2050, people in Metro Vancouver and beyond told us what’s important to them. They also shared their bold and creative ideas for the future. We’ve translated this input into draft transportation goals – as well as some actions the region could take to help reach those goals.



WE NEED YOUR INPUT!

For Phase 2 engagement, we have four questions to ask you:

- Are we on the right track with the draft goals?

And what do you think of three actions that we’re proposing:

- People-first streets that invite walking, biking, and rolling
- Fast and frequent rapid transit that’s a competitive choice for most longer trips
- Automated vehicles that provide convenient access to car trips, without adding to congestion



Read about our survey:
See page [8](#) for goals and page [14](#) for actions.

This discussion guide provides background information to help inform your feedback.

We’re involving you so we can ensure your concerns and aspirations are addressed. Your input will help improve goals and actions in the draft regional strategy. To take part, visit transport2050.ca



What You Told Us in Phase 1: Values, Concerns, and Priorities

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To kick off Transport 2050, TransLink launched its largest-ever public engagement. From May 3 to September 22, 2019, we sparked a regional dialogue on the future of transportation. TransLink convened hundreds of events, consulting people through surveys, public polling, and stakeholder meetings.

VALUES

People most value about the region and their neighbourhoods:

1. Natural areas and parks
2. Access to shops and amenities
3. Proximity to transit

CONCERNS

People are most concerned about:

1. Housing affordability
2. Road congestion
3. Climate change

PRIORITIES

As the region changes, people want to prioritize:

1. Transit expansion and improvement
2. Transportation options that are timely and convenient
3. A transport system that's cost-effective and efficient

How we're using this input

We're translating this input into a vision statement, goals, objectives, targets, and key performance indicators. Taken together, this framework will express what our transportation future should look like. It will guide the work of TransLink and regional partners over the next 30 years.



By the Numbers: Transport 2050 Phase 1



158,575
conversations



315
events



7
languages to engage in



31,682
survey responses



4,024
ideas submitted



500+
stakeholders engaged

Find out what else we learned

Read the Transport 2050 Phase 1 [Report](#).

Working together: Transport 2050, Metro 2050, Climate 2050

TransLink is working with Metro Vancouver as it develops other important regional strategies. For more information about Metro 2050 and Climate 2050, visit metrovancover.org

The 2050 We Want: Draft Goals to Guide the Region

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In Phase 1, you shared your values, concerns, and priorities for the future of transportation.

From this input, we've envisioned a future where we all have real choices, that we can count on, that we can afford, and that we can safely enjoy. To connect us with the people and places that matter most.

To get us there, we're proposing five goals to guide the region into the future.

COVID-19 – Reshaping how we move

The pandemic has had a big impact on how we move. Beginning in March 2020, the Province and region introduced measures to keep people safe. Many people changed their habits by moving to personal vehicles – if they weren't working from home. While transit use declined, it continued to prove itself a lifeline for essential trips. Cycling rates also increased amid a renewed interest in biking. More people were shopping online and receiving deliveries at home.

What about the future?

The future is uncertain. Some trends, such as more remote working and online shopping are likely to persist. But when we reach community immunity, we expect many transportation habits to return to pre-COVID levels. Including road congestion and a return to transit, especially as the region welcomes a million new people by 2050.

Draft Transport 2050 Goals



Convenient Choices

We all have abundant universally accessible choices allowing us to conveniently connect to opportunities without needing to rely on a car.



Reliable Choices

We all have reliable choices that get us where we need to go on time.



Affordable Choices

We all have affordable choices so that people of all incomes can easily live and move in this region.



Safe & Comfortable Choices

We all have safe and comfortable choices that make us healthier and happier.



Carbon-Free Choices

We all have carbon-free choices enabling us to achieve our Provincial and regional climate action targets.

For now, we'd like to focus your attention on the goals above – what do you think?

Are we on the right track with these goals?
Is there anything you would like to add or remove?

Take the survey at transport2050.ca



What You Told Us in Phase 1: Ideas

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In Phase 1, we asked people to think big. To share their bold and creative ideas that could help deliver our transportation future. In the end, we received over 4,000 ideas from the public and stakeholders.



Check out the ideas: visit the public [Ideas board](#) or see the [stakeholder submissions](#)

How we're using the input

Now, we're evaluating the ideas for the final strategy. We're doing this by considering new ideas that are suitable for a long-range strategy. Ideas with the most potential to support regional goals – and that are easy to implement – will be prioritized. For other ideas, we're forwarding them to regional partners, such as municipalities. Or considering them for other, more suitable plans.

The focus of this round of engagement is to get your feedback on three specific actions

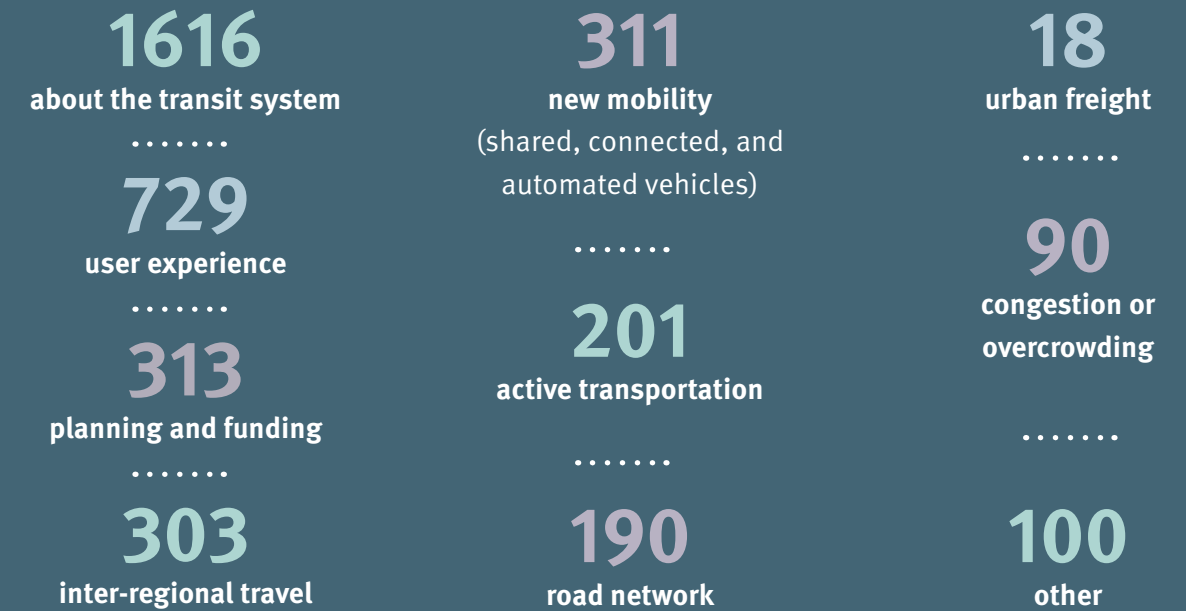
Ideas board

- **Most frequently submitted idea:** improve transit connections with Fraser Valley
- **Most liked idea:** washrooms at major stations (honourable mentions: build Burnaby Mountain Gondola and reduce street parking on busy roads)
- **Most discussed idea:** mobility pricing

These images — automated vehicle, bike ramp, and pedestrian scrambles — were all user-submitted ideas in Phase 1!



Number of Ideas by Category



A Better Way of Moving

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Imagine Metro Vancouver in 2050

Living in a neighbourhood where nearly all of your regular needs can be found within a 15-minute stroll.

Where the streets are quiet and safe, so you can comfortably walk, bike, and roll.

Where the air is clean, and your transportation doesn't generate pollution.

Where you can easily and affordably travel across the region using a range of options.

Fast, frequent, reliable transit supplemented with carsharing make it easy not to have to rely on a car.

Imagine spending more time doing the things you love, instead of being stuck in traffic.

To deliver this vision, we need a transportation system over the next 30 years that supports a better way of moving.

In a growing region we need to rethink how we use urban space and streets. Build out the next generation of rapid transit. And take advantage of new and emerging technologies that in some cases have not yet been imagined. So that everyone can access an integrated, multimodal transportation system. Offering choice and reducing the need for you to rely on a car.

But to achieve this vision, we need to imagine a region that looks different from what we know today.

Three key trends reshaping how we move and live:

15-MINUTE NEIGHBOURHOODS

As the population grows in a space-constrained region, the Regional Growth Strategy foresees more people living in complete and compact communities. In this future, more people will be able to access most of their daily needs within an easy 15-minute walk.

DIGITAL ACCESS

During the pandemic we've come to rely more on digital access, such as remote work or learning. In the future, we foresee even more digital services. Making it easier to access opportunity without needing to travel.

AUTOMATED VEHICLES

Partly automated vehicles (AVs) are already here. With evolutions in sensors and artificial intelligence, it's only a matter of time before vehicles without human drivers hit the road in Metro Vancouver. These fully automated vehicles could be commercially available within a decade.



Photo credits: shared bicycles - Mobi by Shaw Go and multimodal city - Town of Innisfil

Transformative Actions: We Need Your Input

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Thinking about this vision and trends, we're developing a strategy to shape the next 30 years of how we move and live. We're considering a range of actions to improve transport. That includes giving you more and better walking, biking, and transit options. Ensuring that transportation is affordable – and that you can afford to live close to excellent transit. Making driving less congested. And helping businesses deliver goods and services efficiently throughout the region. All the while ensuring we draw on B.C.'s abundant clean energy to power transportation. So that when we move, we're travelling carbon-free.

We'll provide more details on these ideas in the next phase of engagement, later on this year. The focus of this phase is to get your input on three particular actions that could make big strides towards our goals.

- **People-first streets** that invite walking, biking, and rolling
- **Fast and frequent rapid transit** that's a competitive choice for most longer trips
- **Automated vehicles** that provide convenient access to car trips, without adding to congestion

We need you to help us consider the implications and trade-offs associated with these actions.

As you read about the proposed actions, try to imagine the region evolving over the next 30 years:

- How will your transportation needs change?
- What new technologies might be part of your life?
- How will regional growth reshape your community?

If you'd like more in-depth information on the proposed actions, we've created some detailed backgrounders on them. Learn more by downloading them here.

We'll use your input to help refine actions in the draft Transport 2050 strategy document. The draft strategy will contain many other actions, which will help get us to our transportation future. Later in 2021, we'll engage you on the draft strategy with a full list of actions.

These actions will support reconciliation with Indigenous peoples. They will also help create a more socially equitable and inclusive transportation system. These actions will also improve the resilience of transportation. So that we can all get to where we need to go — even in the face of future disruptions.



Action 1: People-First Streets That Invite Walking, Biking, and Rolling

What's the issue?

In many parts of the region, people would like to use active transportation, which includes walking, biking, and rolling. "Rolling" includes a range of wheeled vehicles, such as wheelchairs or scooters. One of the biggest barriers for people to use active transportation is they don't feel safe next to fast-moving traffic.

What's the opportunity?

To make active transportation safe and comfortable, the region will need to provide more "people-first" streets. That requires tailoring streets for the diverse needs of different transportation users. Including for people walking, biking, and rolling, who need proper infrastructure.

Some trends will free up road space to achieve this. By 2050, we foresee more people living in compact communities throughout the region. Meaning people will be closer to services, jobs, and amenities. This requires some more coordination on land use, to bring people, shops, and jobs closer together. With more digital access, like remote work or online shopping, we won't need to rely on cars as much. And as shared automated vehicles come online, street parking

could be freed up. Cars could drop people off at the door, pick up the next passenger, and self-park.

With more road space available for non-automobile uses, we would have an opportunity to reimagine our streets. We could prioritize some street space for transit or goods movement. We could also prioritize some streets or areas for lower-speed travel.

Transformative action: create more people-first streets to make walking, biking, and rolling safe and comfortable. Quieter, residential neighbourhoods could slow down traffic to make the streets safer. In high-density town centres, pedestrian-only areas could be expanded. In some cases, large streets could see protected biking infrastructure or widened sidewalks. More streets could see priority for transit.

Trade-off: would require slowing speeds and/or repurposing some space currently dedicated to driving and parking.

Trend: during COVID, cities experimented with slower streets, giving more road space for walking, biking, and rolling. And supported local businesses with new and expanded patios and parklets.

Action 2: Fast and Frequent Rapid Transit That's a Competitive Choice for Most Longer Trips

What's the issue?

Our region already enjoys great public transportation. As the most efficient way to move people, transit will be an important part of our future. And it will continue to evolve with new technologies, including electrification and automation.

Over the next 30 years we expect significant investment in local, frequent, express, and inter-regional services. Including some improvements to the existing rapid transit system over the next decade. But to make it easy for people not to have to rely on a car, we need to more than triple the size of the existing rapid transit network. So that more people have quick, convenient, and affordable options to travel across the region.

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What's rapid transit? Fast, frequent, and high-capacity public transportation. Many technologies can deliver this level of service, whether on rubber wheels or rails. It's the separation from traffic that makes rapid transit fast.

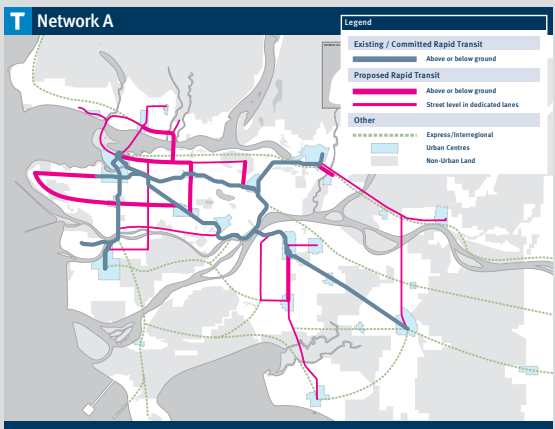
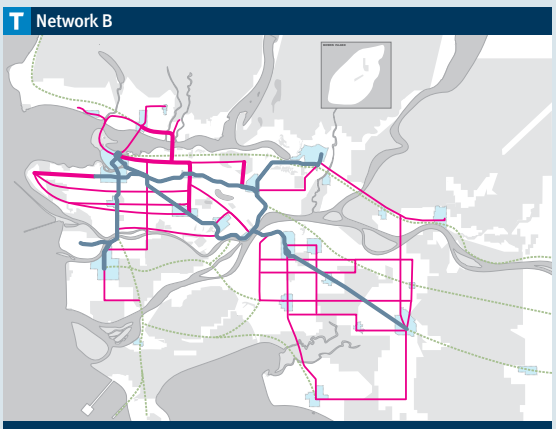
What's the opportunity?

Now's the time to imagine what the next generation of rapid transit could look like. While we've traditionally relied exclusively on SkyTrain, there are different ways we could expand the rapid transit system. We're considering two different approaches, with different trade-offs, and need your input.

There are two different types of rapid transit that could be part of the system in 2050 - both of which offer fast, frequent and reliable service.

Above or below street level	Street level in dedicated lanes
SkyTrain or similar services running on elevated guideways or in tunnels.	Bus-rapid transit (BRT), light-rail transit (LRT), and other emerging forms of automated, electrified rapid transit.
	
	

Photo credits: Subway "Metropolitan Transportation Authority of the State of New York" Black tram "Wikinuk" Creative Commons licenses 2 and 4, respectively

Approach	Network A	Network B
What's the idea?	This approach to building rapid transit looks a lot like what we know today. It would rely primarily on SkyTrain, built above and below street level.	This approach would rely primarily on road-based rapid transit. The vehicles would run in dedicated lanes at street level.
What are the trade-offs?	Building SkyTrain involves tunneling, and constructing rail guideways above ground. This makes it relatively expensive and slower to build compared to other systems.	A more street level rapid transit would require dedicating some road space, currently used for automobiles, towards rapid transit.
What could the network look like by 2050?		
Advantages	Network A shines when it comes to moving people between town centres as quickly as possible – given the greater emphasis on complete separation from street vehicles. It can also move a lot of people during peak periods, such as when people commute to and from work.	Because a more street-level network puts a greater emphasis on using existing road space, each kilometre would be less costly to build. For the same investment, we could have a network several times larger than SkyTrain-only. Opening up rapid transit for more people. This system excels serving people throughout all times of the day and for sub-regional travel.
Current network	100 kilometres Length of the current SkyTrain network, with Surrey-Langley and Arbutus extensions	
Network expansion	200 more kilometres than today SkyTrain: 100 kms BRT and LRT: 100 kms	400 more kilometres than today SkyTrain: 50 kms BRT and LRT: 350 kms
Cost	Both networks would cost about the same. While the scale of expansion would be ambitious, both networks are within the realm of what we could expect to fund. In either case, senior governments would be important partners.	

Phase 1 engagement connection: your number one priority was transit expansion and improvement. You also said you wanted the future transportation system to be cost-effective and efficient.

Transformative action: build a fast and frequent rapid transit system that's a competitive choice for most longer trips for most people in the region.

Action 3: Automated Vehicles That Provide Convenient Access to Car Trips, Without Adding to Congestion

What's the issue?

Automated vehicles (AVs) could start to become viable within a decade, and common by 2050. They have the potential to help people with mobility challenges. AVs could also help reduce collisions and make driving more energy efficient. Shared automated vehicles could serve multiple passengers around the clock. Reducing the number of cars on the road – and the amount of land used for parking.

However, the mass introduction of AVs carries risks. With our road system already strained, automated vehicles could prompt more car travel. Including much longer trips, and even trips without passengers. If everyone had a private AV, we could see much more driving, congestion, and sprawl.

What makes an automated vehicle?

When a critical safety function (i.e. steering, throttle, braking) occurs without driver input. Some vehicles are already partly automated, with lane assist or self-parking features. Fully automated vehicles need no driver input and wouldn't require a steering wheel. While the commercial introduction of fully automated vehicles in B.C. is a few years off, they are the subject of this proposed action.



What's the opportunity?

With the technology emerging, now's the time to think about how we want AVs to work in the region. Imagine living in a neighbourhood where most daily needs are within a 15-minute walk. Where walking, biking, and rolling is the most convenient option for short trips. Where abundant rapid transit makes it easy to cross the region. If you need the convenience of a car, an automated vehicle is available on-demand.

To support this vision, we need to carefully manage the introduction of AVs. So people can access an automated vehicle when they need it, without the transportation system becoming overwhelmed. To do that, we need to ensure that automated vehicles are used efficiently. This would allow the region to serve its transportation needs with far fewer vehicles on the road. Freeing up urban space for other uses, such as parks, affordable housing, or new business opportunities.

Transformative action: manage how automated vehicles are used in the region. Ensure they provide convenient travel options without overwhelming the transportation system.

- **Promote car sharing.** Create incentives to make the sharing of vehicles easier, cheaper, and more convenient.
- **Reduce the number of empty cars on the road.** For automated vehicles, introduce fees to discourage trips without any passengers.
- **Reduce congestion.** For automated vehicles, introduce fees for passenger pick-ups and drop-offs in congested areas (i.e. downtowns, entertainment districts, etc.).

Trade-offs: owning and using automated vehicles may become more expensive.

We need your input:
Visit **transport2050.ca**
to take the survey

Action 1: People-First Streets That Invite Walking, Biking, and Rolling

Phase 2
ENGAGEMENT BACKGROUNDER

TRANSPORT
2050



This backgrounder expands on information in the Transport 2050 Phase 2 Discussion Guide.

Overview

Through Transport 2050, we are proposing actions to better serve the needs of people who live, work, and play in Metro Vancouver.

One transformative action that could be taken is to redesign our streets to: *create more people-first streets to make walking, biking, and rolling safe and comfortable.*

What is our current situation?

Streets serve many functions. They act as vital connectors, moving people that travel by a variety of modes, including walking, biking, rolling, driving, and public transit. Streets also facilitate goods movement and provide access to shops and services, as well as social spaces for gathering.

What is rolling?

Rolling includes a range of wheeled vehicles, such as wheelchairs or scooters.

However, most streets were designed to prioritize high-speed vehicle movement at the expense of other uses and users. Streets use about a third of the land area in urban Metro Vancouver and make up 80% of all public space. So how we use them has a big impact on the shape of our region.

Today, approximately 50% of all trips made in Metro Vancouver are less than 5 kilometres in length. Many of these trips are being made by car even though many 1-kilometre trips could be just as easily made on foot. Also, many trips under 5 kilometres would be faster by bike than by car. This would make cycling a time-competitive alternative to driving for about half the trips in the region.

Many people in our region would like to use active transportation more often, which includes walking, biking and rolling (including such devices as scooters and wheelchairs). However, there are two major barriers preventing people from using active transportation more often:

- First, they don't feel safe or comfortable travelling next to fast-moving traffic; and
- Second, adequate facilities and connections aren't provided that make it convenient to access destinations, such as jobs, amenities, or parks.

With respect to **safety**, peoples' anxieties about walking, rolling and cycling next to fast-moving traffic are justified. According to ICBC data, motor vehicle crashes kill nearly 100 people in our region every year, an average of 40 of whom are on foot or bike. The key factor in these fatalities is motor vehicle speed.

Based on the human body's ability to withstand impact, illustrated in Figure 1, the National Association of City Transportation Officials (NACTO) recommends the top design speed for urban streets should be no higher than 40km/h.

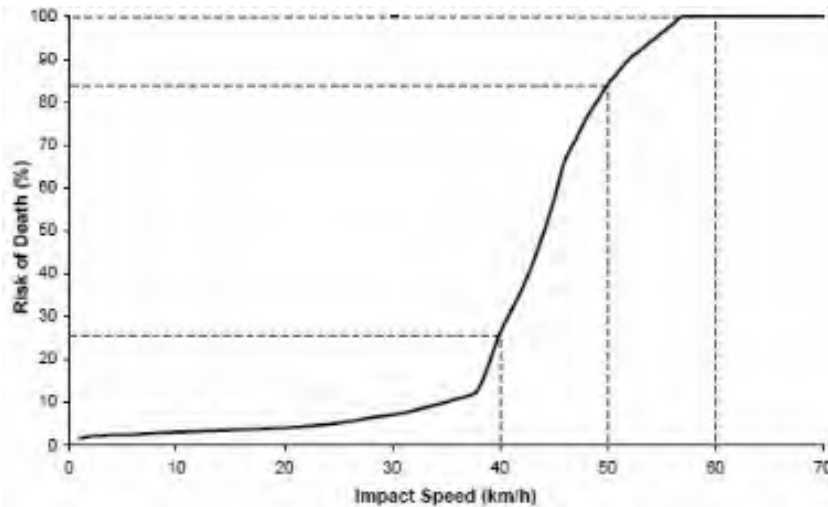


Figure 1 – Risk of pedestrian death as a function of vehicle impact speed

Source: Anderson, R., McLean, A., Farmer, M., Lee, B., & Brooks, C. (1997). Vehicle travel speeds and the incidence of fatal pedestrian crashes. *Accident Analysis and Prevention*, 29(5), 667-674.

Conventional engineering practice typically builds roads with a design speed that is even higher than the posted speed limit, ostensibly to accommodate driver errors. However, this practice is now understood to encourage speeding and increases the likelihood of traffic crashes and fatalities. A key step towards creating safer streets and eliminating traffic fatalities is to reconfigure most of our roads so their physical design aligns with their intended speeds.

With respect to **convenience**, in many parts of our region, easy walkway and bikeway connections are missing.

- **Walkways:** Sidewalks are an important space allocation along roads to give people a safe place to walk and roll. Only approximately 28% of roads in Metro Vancouver have sidewalks on both sides, while 56% have sidewalks on at least one side, and the remaining 16% do not have sidewalks. These gaps in the sidewalk network leave unsafe or uncomfortable conditions that discourage people from walking.
- **Bikeways:** Most people feel safest biking when they have physical separation from vehicle traffic. Of the cycling network within our region, 40% is made up of neighbourhood street bikeways or shared bikeways, 37% of the network is made up of painted bike lanes and bike accessible shoulders that do not protect cyclists from vehicle traffic, 21% of the network is made up of multi-use paths for people biking, walking, or rolling, and 2% is made up of protected bike lanes or protected bike paths. Facilities that are only comfortable for people with lots of cycling experience discourage many people from biking either for recreation or for commuting purposes.

But it's not always as easy as just carving out space on all roads for all users such as people walking, rolling, biking, driving, using transit, and moving goods. Often providing adequate space to comfortably accommodate all travel modes is challenging due to limited road space within communities. We need to consider the street network as a whole to see where different modes could be provided with adequate space on different streets, to ensure safety, comfort, and efficiency.

The potential people moving capacity of streets

We need to reconsider the efficiency of streets, increasing the *people moving capacity*—the number of people that can travel a given route within a given amount of time—rather than the vehicle moving capacity. As illustrated in the graphic below, one 10-foot lane can move many more people walking, biking, or rolling, than by car.

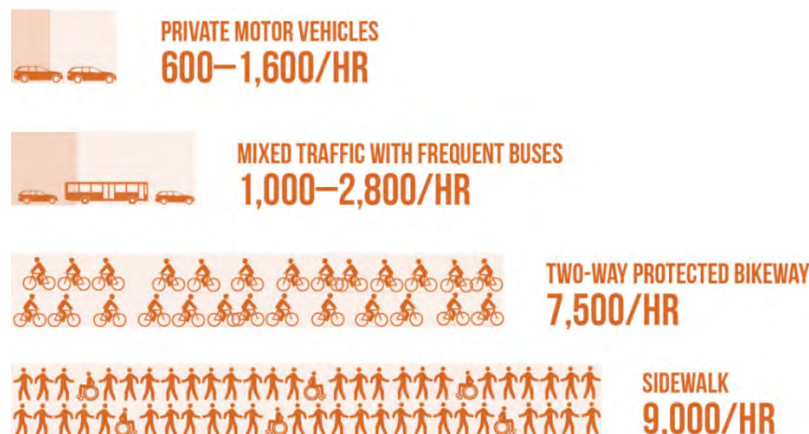


Figure 2 - Excerpt from *Transit Street Design Guide*, National Association of City Transportation Officials (NACTO)

Global lessons from pandemic responses

Many cities, including some in Metro Vancouver, have experimented with different ways to use urban space and roads during the COVID-19 pandemic. Reduced vehicle traffic volumes and an increase in needing to socialize, travel and exercise outside, resulted in a need and opportunity to repurpose road space for new public space, active transportation, and recreational opportunities. This experience is likely to lead to a heightened awareness of the importance of healthy outdoor public spaces.

For example, the City of North Vancouver created slow streets and piloted temporary [changes to Grand Boulevard West](#) in order to create additional space for people walking, biking, and rolling. The City changed the separated bike path that parallels Grand Boulevard West to a walkway, creating more space for pedestrians to safely distance while getting around on foot. In order to provide more safe space for cyclists, this project also repurposed the northbound travel lane on Grand Boulevard West to cyclists only, creating additional space for cyclists, while restricting northbound traffic on this road.



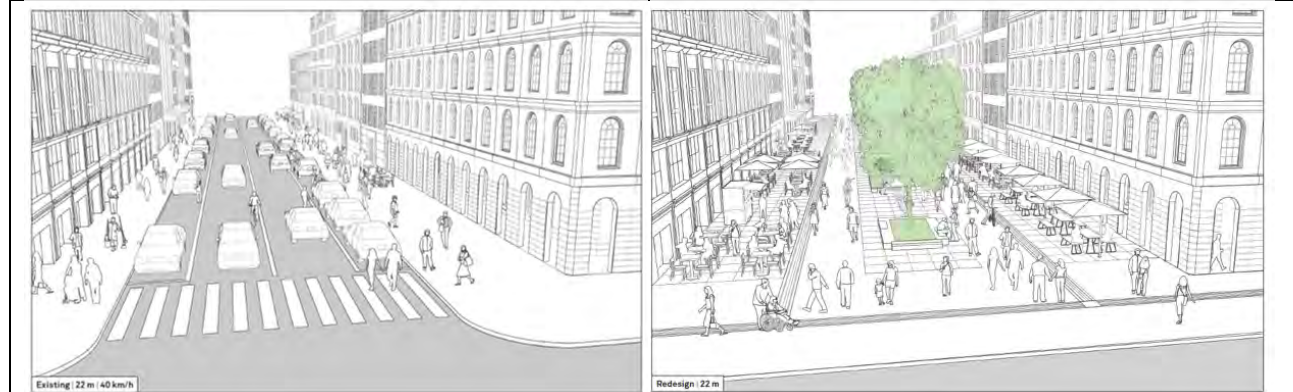
An example of a temporary slow street in North Vancouver. Photo: City of North Vancouver

What could safer, more people-oriented streets look like?

As noted earlier, we need to consider the street network as a whole to see where different modes—driving, transit, walking, biking, rolling—could be provided with adequate space on different streets. People-first streets prioritize safety, livability, and connection through the reallocation of road space, currently oriented to cars, for use by people walking, biking, rolling, or taking transit. They can be designed in a variety of ways, ranging from expanding public plazas and space for parks, to enhanced sidewalks, separated bike lanes, dedicated transit lanes or reduced vehicle speed limits.

Here are three examples of how different types of streets in our region could be reimagined. Although these images depict urban locations, other less dense areas could also see and benefit from these types of change.

In **urban centres**, pedestrian-priority areas could be expanded to give priority to people walking, trees to shade the sidewalk, benches for people to sit, and extending patios and outdoor gathering space for socializing or dining.



Before: 50km/h street with parked cars.


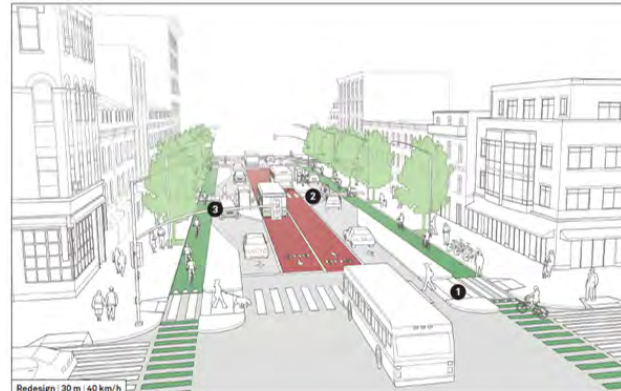
After: 10km/h zone with pedestrian space and room for occasional low-speed shuttles to serve people with mobility challenges.

Most **neighbourhood streets** could be reimagined as low-speed zones with priority given to people walking, biking, and rolling, children playing, and neighbours gathering.



Before: 50 km/h street with parked cars and little comfortable space for walking, biking, and rolling.

After: 20km/h street where placement of street furniture, landscape design, and limited number of parking stalls ensure that users travel at walking/cycling speeds. Cars are welcome as guests but only if travelling to or from a destination in the zone.

<p>On urban boulevards, wider sidewalks and separated bike lanes can give people comfortable places to walk, bike and roll.</p>	
 <p>Existing: 30 m 60 km/h</p>	 <p>Redesign: 30 m 40 km/h</p>
<p>Before: 60km/h boulevard with three general purpose lanes in each direction.</p>	<p>After: 40km/h boulevard with wider sidewalks and shortened crossings, separated bike lanes, and transit priority lanes.</p>

Images: Urban Street Design Guide, National Association of City Transportation Officials (NACTO)

Different urban street types can combine to create **complete networks of safe and comfortable** walkways and bikeways providing everyone with access to all destinations across the community. The concept below is based on guidance in the Global Street Design Guidelines (2016) from the National Association of City Transportation Officials (NACTO).

Target Speed (km/h)

- 10

Pedestrian-priority streets, with geometry keeping speeds low. Or pedestrian-only zones.
- 20
Neighbourhood or low-volume streets that allow play and social activity in the street. Good for **cycling-priority**.
- 30
 Neighbourhood **main streets**. Comfortable for cycles to ride in mixed traffic. Low risk for people walking across or along edge.
- 40
Boulevards. Top design speed for most streets in urban areas. Frequent signalized crossings and traffic-protected cycle tracks
- 50
 Possible on **a limited number** of large streets with cycle tracks, wide sidewalks, medians, and frequent signalized crossings.
- 60
Not safe on urban streets. Speeds of 60km/h and above should be reserved for controlled-access highway environments.

What's our opportunity?

Our communities are changing rapidly as the population grows in a space-constrained region.

Between now and 2050, with one million more people coming to the region, Metro Vancouver's Regional Growth Strategy encourages growth and development in urban centres. As these communities grow, residents will be able to access more of their daily needs closer to home. Ensuring they can easily and comfortably access those daily needs means providing good quality active transportation facilities in a connected network.

With more digital access to everyday goods and services, such as working from home and home deliveries of daily needs, people are becoming less dependent on personal vehicles. Fewer trips by personal vehicles means we'll have an opportunity to make more efficient and people-centred use of our streets.

To further support this shift, we will continue to support and invest in active transportation facilities. Active transportation is cost and space effective, healthy, and climate-friendly. Studies have shown that the best way to get more people using active transportation is to provide safe spaces for it.

We have an opportunity on some of our streets to reduce traffic speeds and to use some of our existing asphalt to support and promote active transportation in key areas to make it safer and more comfortable for everyone to walk, bike, and roll.

How can we benefit from redesigning our streets to make walking, biking, and rolling feel safer and more comfortable?

Our streets are public spaces. How we use this public space influences our ability to achieve our desired outcomes.

There are a wide variety of benefits of redesigning our streets to promote walking, biking, and rolling, including:

- **Safety:** Reduces or eliminates traffic-related injuries and fatalities for all road users (whether they walk, bike, roll, or drive) by separating modes and/or reducing speed limits.
- **Health:** Improves physical and mental health by encouraging more active forms of transportation like walking and cycling.
- **Equity:** Increases equity by improving free and physically accessible mobility options for more people of all ages, abilities, incomes and backgrounds in more areas of the region.
- **Climate change and air quality:** Having more people walk, roll and cycle means fewer vehicle trips. This results in lower air pollution and GHG emissions from vehicles, helping improve air quality for people on our streets and in our neighbourhoods, and contributing to regional, provincial, and national efforts to combat climate change.
- **Affordability:** The average personal car costs over \$10,000 per year to own¹. Active transportation on safe facilities provides more affordable and convenient transportation options without the need to own a personal device. The freedom to reduce vehicle expenses and have access to more transportation options can result in a more affordable region.
- **Economic:** Enabling people to easily access the services they need close by, creating new opportunities for local businesses to thrive in our communities.
- **Social:** Improved feeling of community through new and improved spaces for social gatherings and events, connecting people with their neighbours.



A pop-up plaza in Vancouver. Photo: City of Vancouver

¹ Canadian Automobile Association Driving Costs Calculator: <https://carcosts.caa.ca>

What are some considerations or potential challenges with redesigning our streets?

Changes to the road network require careful study to fully understand local context and ensure equitable implementation. The advancement of people-first streets would need to be undertaken through a comprehensive and context-specific design approach with a robust public engagement plan.

- **Emerging technologies:** people-first streets need to be able to respond to changes in technology and vehicles. Shared public bikes and scooters have unlocked new trip types by facilitating flexible one-way trips. Electric bikes and scooters are further reducing barriers and opening up active transportation for more people (including seniors and people with disabilities) and different trip types (e.g., traveling with cargo, kids, or in hilly areas). E-bikes and e-scooters can often travel much faster than traditional bikes and kick scooters, creating the need to ensure sufficient space or separate facilities are allocated to these faster mobility devices.
- **Reconfiguring traffic and transportation plans:** Creating more people-first streets will require repurposing some street space previously dedicated to general purpose traffic for active transportation. While we anticipate fewer people needing to drive over the next 30 years, drivers could experience slower driving times on some roads and increased parking costs. These are big shifts in street design and use that should be integrated with local and regional traffic and transportation plans as well as educational campaigns.
- **Cooperation across governments:** The successful implementation of people-first streets will require collaboration with the Province, TransLink and municipalities to bring land use, transportation, and social plans into alignment. This type of cooperation—along with support from residents and business owners—will help to foster an environment where people-first streets can thrive.

Promoting 15-minute neighbourhoods

Redesigning our streets and enhancing the connectivity of our walkway and bikeway networks can also help support the development of more complete communities—or 15-minute neighbourhoods—where residents can complete most of their daily tasks within an easy 1-kilometre walk or roll. 15-minute neighbourhoods entice people to stay local by providing more convenient and attractive access to local neighbourhood shops and services.

The graphic below illustrates the difference between a disconnected and well-connected street network. The disconnected street network (on the left) results in long walking or biking distances. The well-connected street network (on the right) enables shorter, more direct walking and rolling connections.



Figure 3 - Walking distances are shorter in more connected networks (source: TransLink Transit-Oriented Communities Primer).

There is a lot of potential for growth in active transportation; an opportunity to build on the recent momentum of the increasing walking and rolling mode share and to intensify efforts to grow the cycling mode share.

Supporting compact and complete communities as outlined in *Metro 2040: Shaping Our Region*, as well as increasing the connectivity of our walkway and bikeway networks, will help shrink the distances people need to travel and enable more people to access their daily needs through walking, cycling or rolling.

Examples of people-first streets from here and around the world

New Westminster's Front Street Mews

New Westminster removed a portion of the Front Street Parkade and redesignated a section of Front Street as a "Mews." [The Front Street Mews](#) is now a pedestrian-friendly street that includes new features such as widened sidewalks, street furniture, lighting, street trees, traffic calming, planters, and angled parking spots to access local businesses. Prior to 2020, the Front Street Mews was the site of Fridays on Front, a weekly summertime community event including artisan vendors, live music, and New Westminster merchants.



Front Street Mews, Photo: City of New Westminster

Toronto's King Street Priority Corridor

The [King Street Transit Priority Corridor](#) project in Toronto helped to improve transit reliability, speed and capacity by giving traffic priority to streetcars. Changes included prohibiting through movements for cars at select intersections, eliminating on-street parking, and expanding space for streetcar stops. Cyclists are able to continue to use King Street, travelling straight through at intersections. This has allowed for a greater diversity of public space in the curb lanes, including parklets, public seating, patio seating for restaurants and cafés, and taxi stands.



King Street Transit Priority Corridor, Photo: City of Toronto

New York City Pedestrian Plazas

New York City has partnered with local organizations on a [NYC Plaza Program](#) to convert underused streets into vibrant, social neighbourhood plazas. The program prioritizes sites in neighbourhoods that lack open space, and partners with community groups that commit to operate, manage, and maintain these spaces. Each plaza begins with the creation of temporary, affordable pilot projects and gradually transitions towards the creation of permanent public spaces. New York City has also made significant new investments in separated bikeways over the last decade, creating more options to navigate the city safely using active modes of transportation.



Pearl-Archway Plaza in Brooklyn, hosted by Brooklyn Flea, Photo: City of New York

We need your input

What do you think about slowing speeds and/or repurposing space on some streets to improve safety and invite more people to walk, bike and roll?

Visit transport2050.ca to take the survey.

Action 2: Fast and Frequent Rapid Transit That's a Competitive Choice for Most Longer Trips

Phase 2
ENGAGEMENT BACKGROUNDER

TRANSPORT
2050



This backgrounder expands on information in the Transport 2050 Phase 2 Discussion Guide.

Overview

Through Transport 2050, we are proposing actions to serve the needs of people who live, work, and play in Metro Vancouver.

During Phase 1 engagement, Metro Vancouverites said their number one priority was transit expansion and improvement. People also said they want the future transportation system to be cost-effective and efficient.

In response, one transformative action that we are exploring and seeking your feedback about is to *build a fast and frequent rapid transit system that's a competitive choice for most longer trips for most people in the region.*

What is our opportunity and our challenge?

Our region already enjoys one of the greatest public transit systems in North America, with ridership levels that are exceeded only by the transit systems in New York, Toronto and Montreal. Still, many who may want to take transit don't for different reasons: perhaps they can't easily reach transit access close to their home, the trip takes too long compared to driving, or they can't rely on transit to get them where they want to go on time.

Over the next 30 years, in order to ensure that everyone can conveniently and reliably get around by transit, we plan to make substantial and ongoing investments to increase service and improve frequency in all layers of the transit network. These layers include:

- Para-transit service like HandyDART;
- Local service primarily focusing on fixed-route but with some on-demand service where appropriate;
- Express service including services that better connect our region with our neighbours in the Fraser Valley and up the Sea-to-Sky highway; and
- A proposed Major Transit Network, made up of fast, frequent, reliable and high-capacity rapid transit services completely separated from traffic.

We'll also keep up with new technologies such as electrification and automation to make sure that transit remains a competitive and affordable travel choice that also contributes to our Provincial and regional climate action targets.

The focus of the transformative action we are discussing in Phase 2 is specifically on *rapid transit*.

Today, across our region, some people have great access to fast, frequent, and reliable transit service through our existing rapid transit network—the Expo, Millennium, and Canada Lines—and our frequent transit network, where service runs at least every 15 minutes in both directions during the day and into the evening, every day of the week.

What is rapid transit?

Rapid transit refers to fast, frequent, reliable and high-capacity public transit.

Many different kinds of technology can deliver this level of service, whether on rubber tires or rails.

It is the full separation from road traffic that makes rapid transit fast and reliable and able to move large volumes of people.

But some people don't have easy access to the rapid transit network because it is not close to where they live or work. For many people, relying on local transit service running in mixed traffic, they often find themselves stuck in congestion, resulting in unreliable travel times.

Through Phase 2 engagement, we want your input about two approaches to how we could expand the rapid transit network. To improve access to fast, frequent and reliable traffic-separated rapid transit by extending the network and bringing it closer to more people across the region.

What considerations are there as we plan for our future rapid transit network?

Population and job growth drive ridership forecasts

Some of the key drivers of transit ridership forecasts are anticipated population growth and job growth, and the location of that growth. The land around this region's rapid transit stations has proven to be very attractive for both residential and commercial development as shown in Figure 1.

Figure 1 illustrates existing population and employment density with dark blue areas focused especially around rapid transit. In its 2050 growth scenario, shown in Figure 2, Metro Vancouver anticipates that the greatest concentration of new residents and jobs is expected to be along the existing rapid transit network. The location of this new anticipated growth is easiest to visualize in Figure 3, which removes existing population and jobs and illustrates just the anticipated difference between today and 2050.

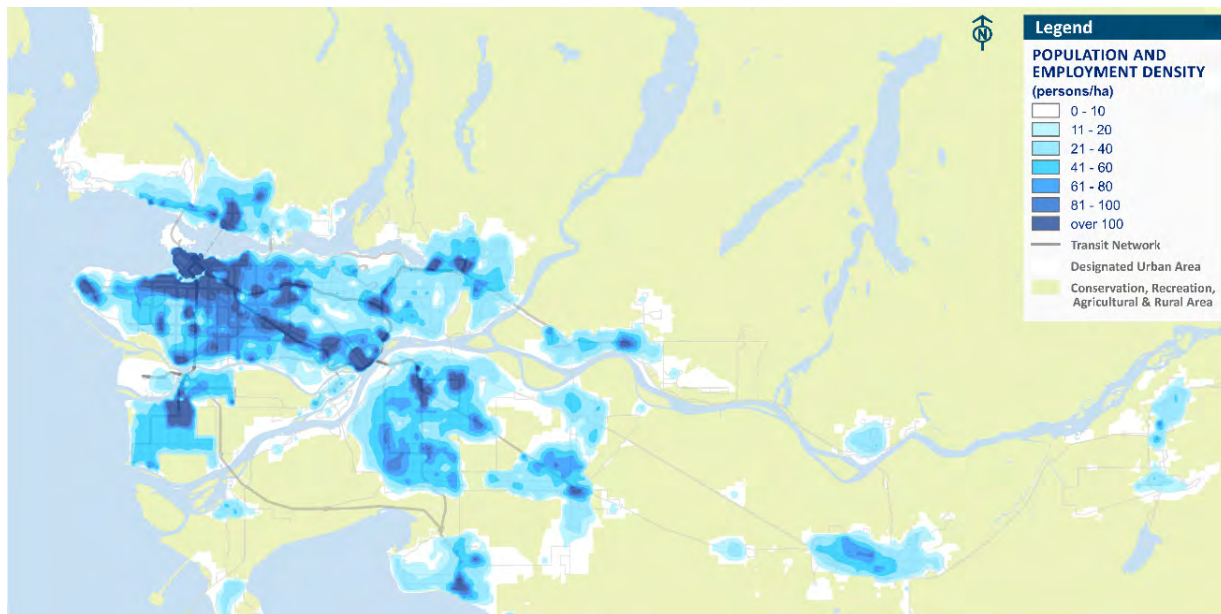


Figure 1 - 2016 Population and Employment Density (Source: Metro Vancouver base 2016 population and employment).

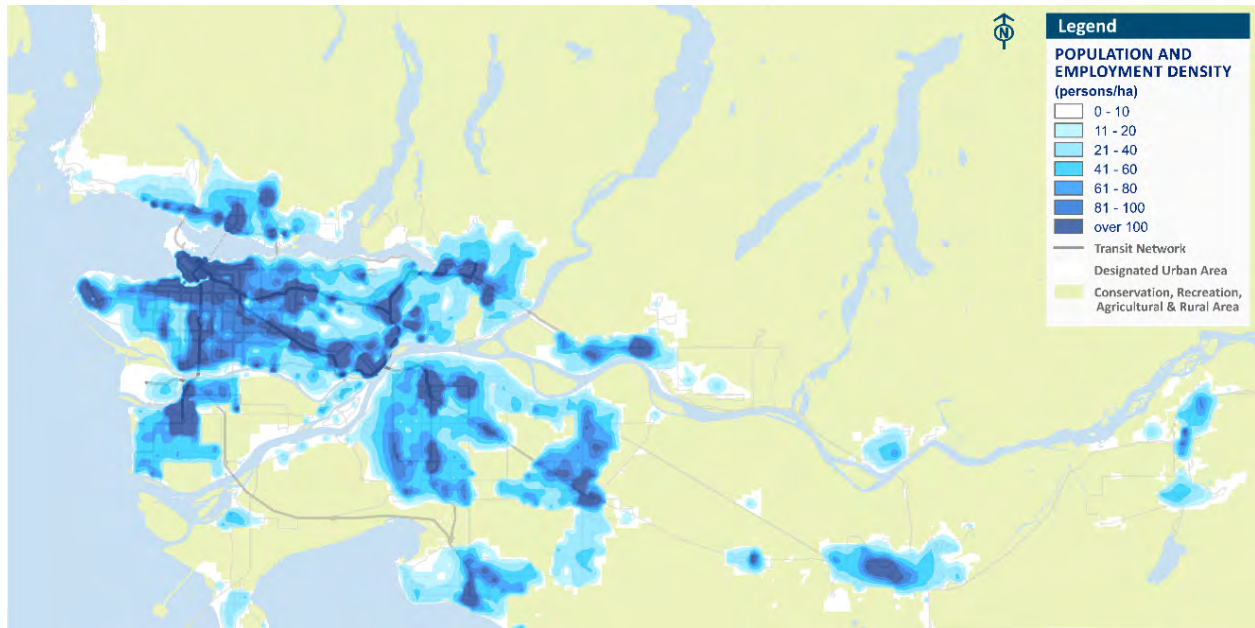


Figure 2 – 2050 Population and Employment Density (Source: Metro Vancouver 2050 Metro Growth Scenario)

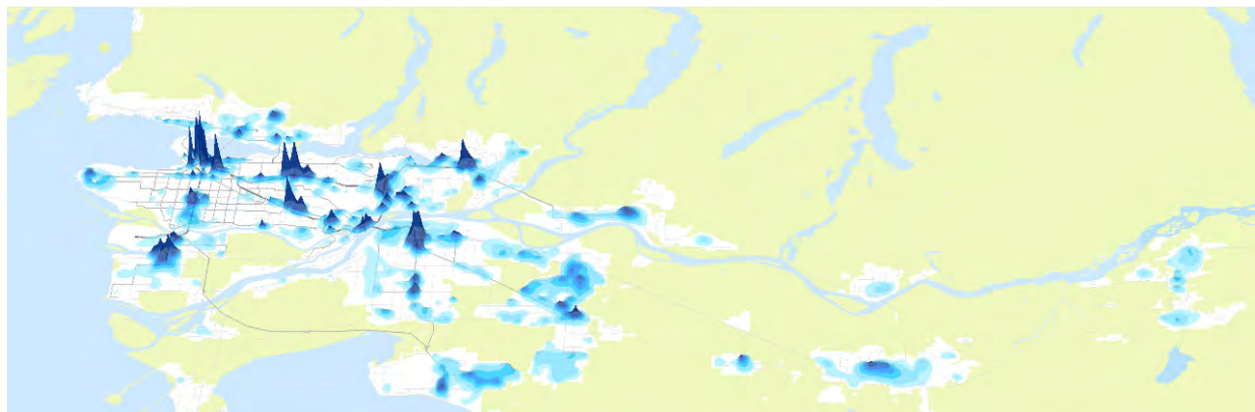


Figure 3 - Locations where growth is expected to occur (difference between 2016 and 2050 Population and Employment Density)

Based on the above land use assumptions, using the Regional Transportation Model, we developed a fictitious scenario that connects every urban centre in the region with rapid transit in order to observe the potential transit ridership demand on different corridors. The output of that assessment is shown in Figure 4 on page 5, which shows peak hour demand, a key determinant of peak capacity need. According to this particular model run, corridors that are not showing as yellow, orange or red would not likely require traffic-separated rapid transit to meet forecast ridership volumes over the next 30 years. Corridors showing in red or orange would warrant consideration for above or below street level rapid transit to meet forecast capacity needs. Providing fast, frequent, reliable traffic-separated transit service may still be warranted in some of the blue corridors in order to achieve other policy objectives, such as influencing land use.

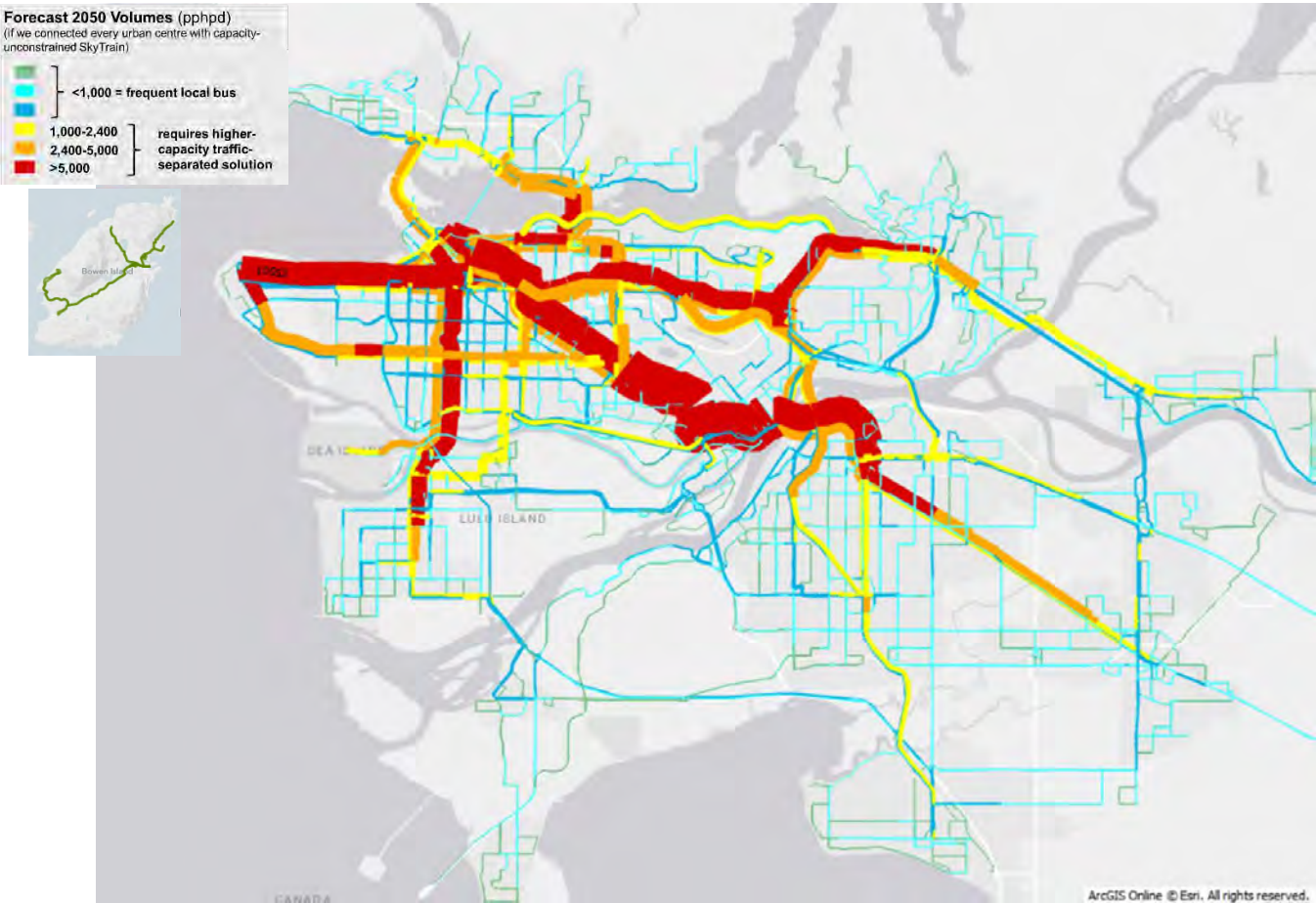


Figure 4 - Forecast 2050 transit ridership volumes in passengers per hour per peak direction (pphd)

Business-As-Usual won't be enough by 2050

While COVID-19 will delay our ridership growth expectations by a few years, we expect long-term ridership to continue to grow with population, employment and increasing urbanization.

Based on a “Business As Usual” (BAU) approach in which future transit expansion is limited to modest annual increases to local bus service and already-committed rapid transit projects (Broadway Subway from VCC-Clark to Arbutus Street and Surrey-Langley SkyTrain extension), our modelling confirms that, by 2050, demand on the Expo and Canada Lines will exceed capacity even with completion of upgrades to their ultimate design capacity.

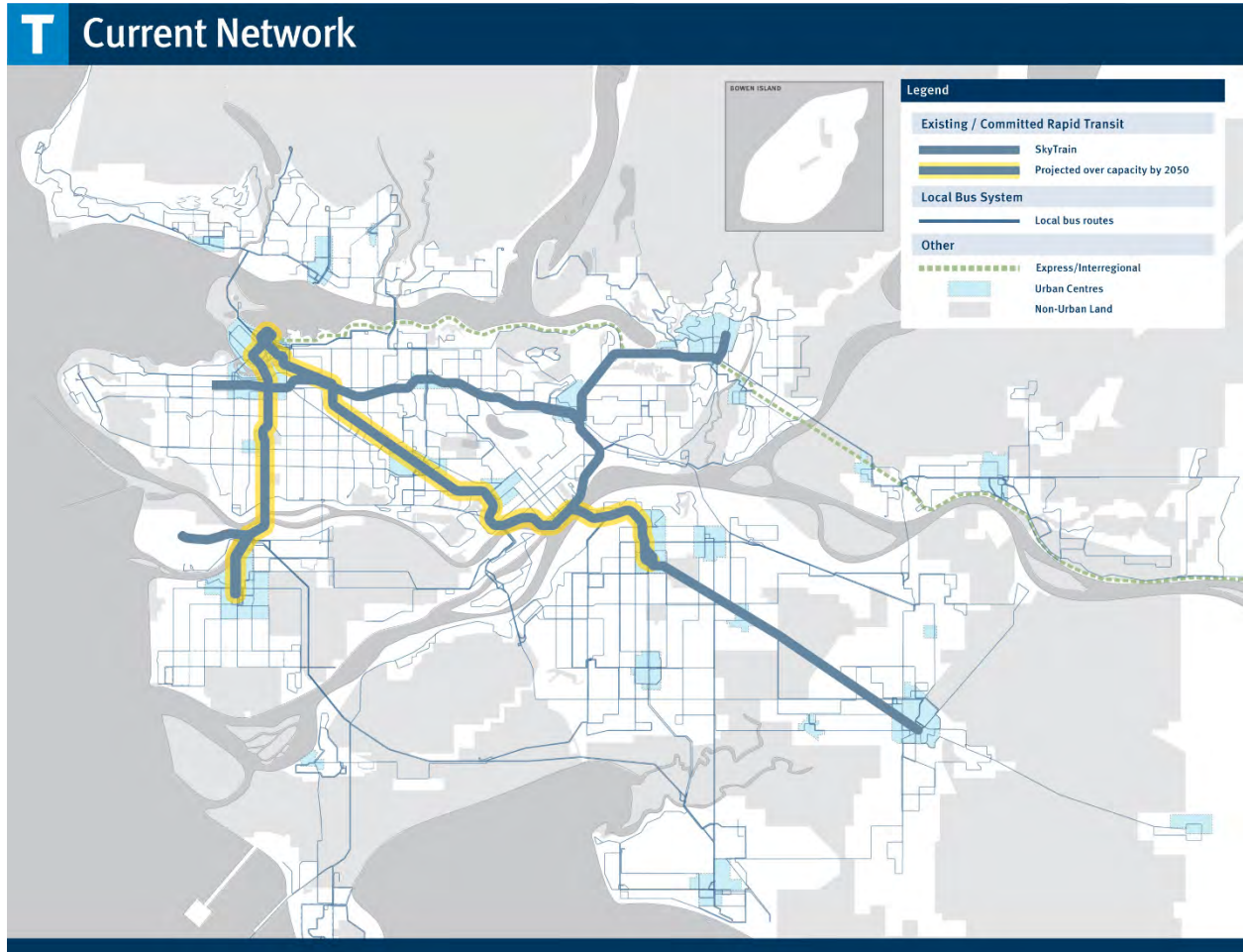


Figure 5 - Current Transit Network (2021), highlighting rapid transit lines projected to be over capacity by 2050

Rapid Transit Line	Ultimate Capacity (pphpd)	2018 Demand/Capacity	2050 Base Demand/Capacity
Canada Line	8,600	75%	112%
Millennium Line	14,500	29%	70%
Expo Line	22,450	70%	101%





Figure 6 - Rapid Transit Demand and Capacity (2018 and 2050)

The region must begin planning for relief solutions for the existing rapid transit system, concurrently planning for expansion of rapid transit to new parts of the region. The preferred solutions to existing capacity challenges on each of these lines is still to be determined and could include reliance on regional passenger rail running parallel high-capacity express service, twinning of existing rapid transit lines, or building of parallel rapid transit lines to spread out the ridership, or some combination of the above.

The ultimate solutions will require significant technical assessment and decision-maker discussion that will take place in the form of more detailed corridor studies following the finalization of Transport 2050. However, the necessity of these investments should be assumed in any Transport 2050 network concept.

Separating transit from other traffic: the key to speed and reliability

The key to fast and reliable rapid transit is separating it from traffic. There are generally two ways to achieve this, both of which could be part of our rapid transit network in 2050:

Above or below street level	Street level in dedicated lanes
<p>SkyTrain or similar services running on elevated guideways or in tunnels</p>   <p>Image: https://commons.wikimedia.org/wiki/File:R211_Open_House_%2838033469354%29.jpg</p>	<p>Bus-rapid transit (BRT), light-rail transit (LRT), and other emerging forms of automated, electrified transit</p>   <p>Image: https://commons.wikimedia.org/wiki/File:R1-tram.jpg</p>

Each of these ways of providing rapid transit has advantages and disadvantages, and both will be important in our expanded rapid transit network. In the next section, we explore these trade-offs in more depth. It's important to note that although we are seeking your input on these two different approaches to expanding the rapid transit network, multiple possible hybrid approaches are also possible. The intent of the current discussion is to assess and get feedback on these two broad approaches which we will then refine into a preferred approach that we will bring back for engagement in Phase 3.

The evolution of a rapid transit route

As an example of how a transit route can evolve from local bus service and through various forms of rapid transit over time, let's look at what is now the 99 B-Line along the Broadway Corridor.

In 1996, we introduced the B-Line to replace local bus service along the corridor between Lougheed Mall in Burnaby and UBC's Vancouver Campus. The route was immediately one of our busiest shortly after it opened, leading to additional investments of buses and more frequent service.

In 2002, the opening of the Millennium Line SkyTrain replaced the portion of the route from Lougheed Mall to what is now Commercial-Broadway station.

Fast forward to 2019, when the 99 B-Line between Commercial-Broadway and UBC saw up to 60,000 daily trips on articulated buses running every two to three minutes at peak times. It remains one of the busiest and consistently overcrowded bus routes on our region's network.

The Broadway Subway Project, now under construction, will extend the Millennium Line from VCC-Clark to Arbutus Street, replacing a portion of the 99 B-Line.

When the Broadway Subway Project opens in 2025, we expect that the remaining B-Line from Arbutus to UBC will be at capacity in the peak hour. That's why we're currently studying a potential extension of SkyTrain to UBC.

This corridor provides a blueprint for how other routes in our region may evolve over time.

For more information and to provide feedback on our current work to explore a potential Millennium Line UBC Extension, please visit translink.ca/ubcextension.



Two Potential Approaches to Expanding the Rapid Transit Network: At-a-Glance

Approach	Network A	Network B
What's the idea?	This approach to expanding the rapid transit network looks a lot like what we know today. It would rely primarily on SkyTrain, built above and below street level.	This approach would rely primarily on road-based rapid transit. The vehicles would run in dedicated lanes at street level.
What are the trade-offs?	Building SkyTrain involves tunneling and constructing rail guideways above ground. This makes it relatively expensive and slower to build compared to other systems.	A more street-level rapid transit would require dedicating some road space, currently used for automobiles, towards rapid transit.
Advantages	Network A shines when it comes to moving people between town centres as quickly as possible – given the greater emphasis on complete separation from street vehicles. It can also move a lot of people during peak periods, such as when people commute to and from work.	Because a more street-level network puts a greater emphasis on using existing road space, each kilometre would be less costly to build. For the same investment, we could have a network several times larger than SkyTrain-only. Opening up rapid transit for more people. This system excels serving people throughout all times of the day and for sub-regional travel.
Current network	100 kilometres Length of the current SkyTrain network, with Broadway Subway (VCC-Clark to Arbutus) and Surrey-Langley extensions	
Network expansion	200 more kilometres than today SkyTrain: 100 kms BRT and LRT: 100 kms	400 more kilometres than today SkyTrain: 50 kms BRT and LRT: 350 kms
Cost	Both networks would cost about the same. While the scale of expansion would be ambitious, both networks are within the realm of what we could expect to fund. In either case, senior governments would be important partners.	

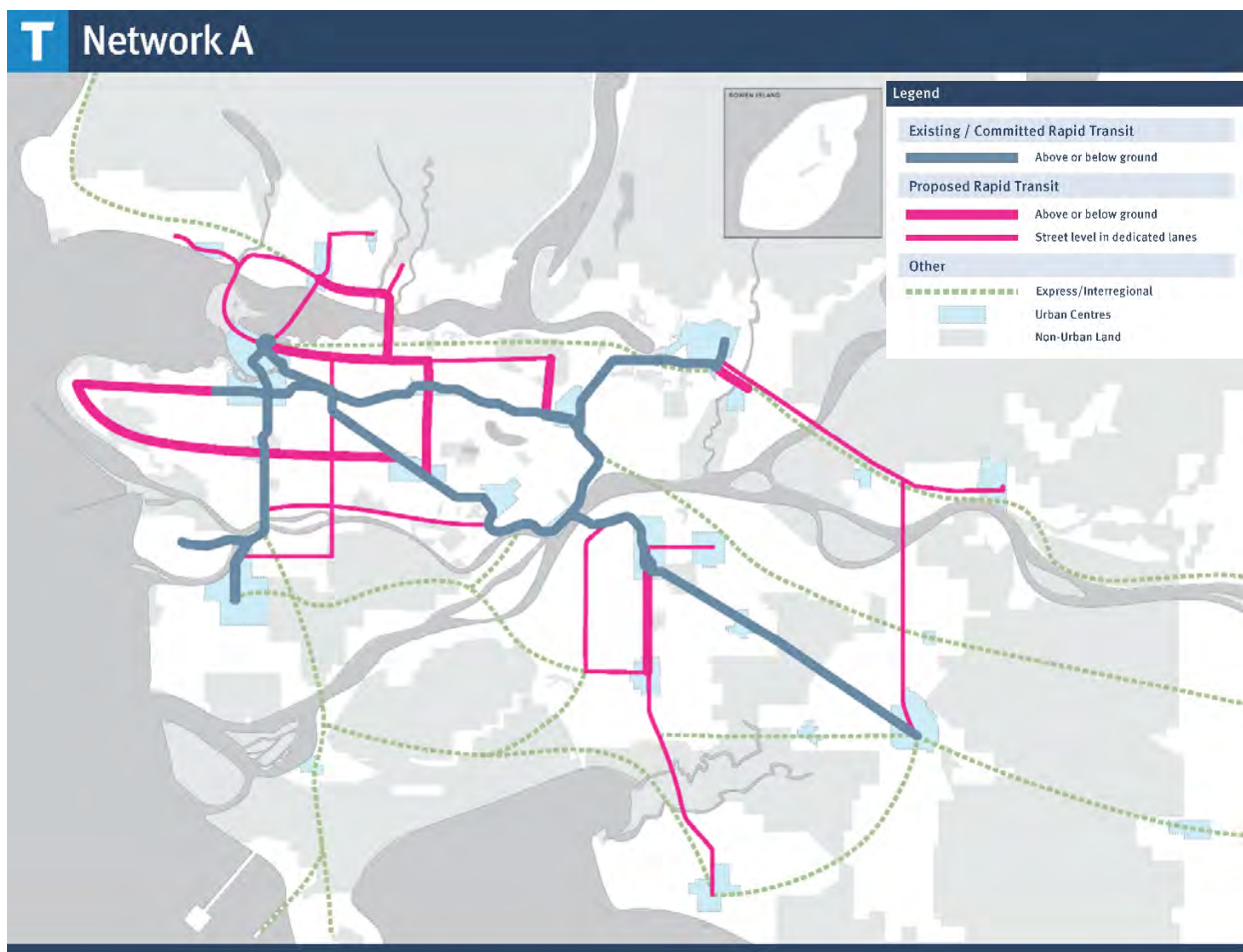
Network A

In the decades since the launch of SkyTrain in 1986, we have expanded the network to include the Millennium Line, Canada Line, Evergreen extension, and soon, the Broadway Subway (VCC-Clark to Arbutus Street) and Surrey-Langley extensions. Once those are complete, we will have 100 kilometres of SkyTrain in the region. This approach has resulted in a high-frequency, high-capacity network that services the region's busiest corridors.

Our current rapid transit network has resulted in well-connected regional town centres. Metro Vancouver has become one of the most livable regions in North America, in large part due to the regional focus on building transit-oriented communities focused around frequent transit – especially at SkyTrain stations. Regional town centres such as Metrotown, Brentwood, Surrey Central, and Coquitlam Central have grown significantly in recent years to meet the high demand to live along a rapid transit corridor.

The Network A approach would add about 200 kilometres of new rapid transit to our rapid transit network. About 100 km would be rapid transit on elevated guideways or in tunnels, and 100 km would be street-level rapid transit in dedicated lanes.

A trade-off to the Network A approach is that investment is focused into fewer but more expensive corridors at a time, meaning that by 2050 some parts of our region would still not have convenient access to rapid transit.

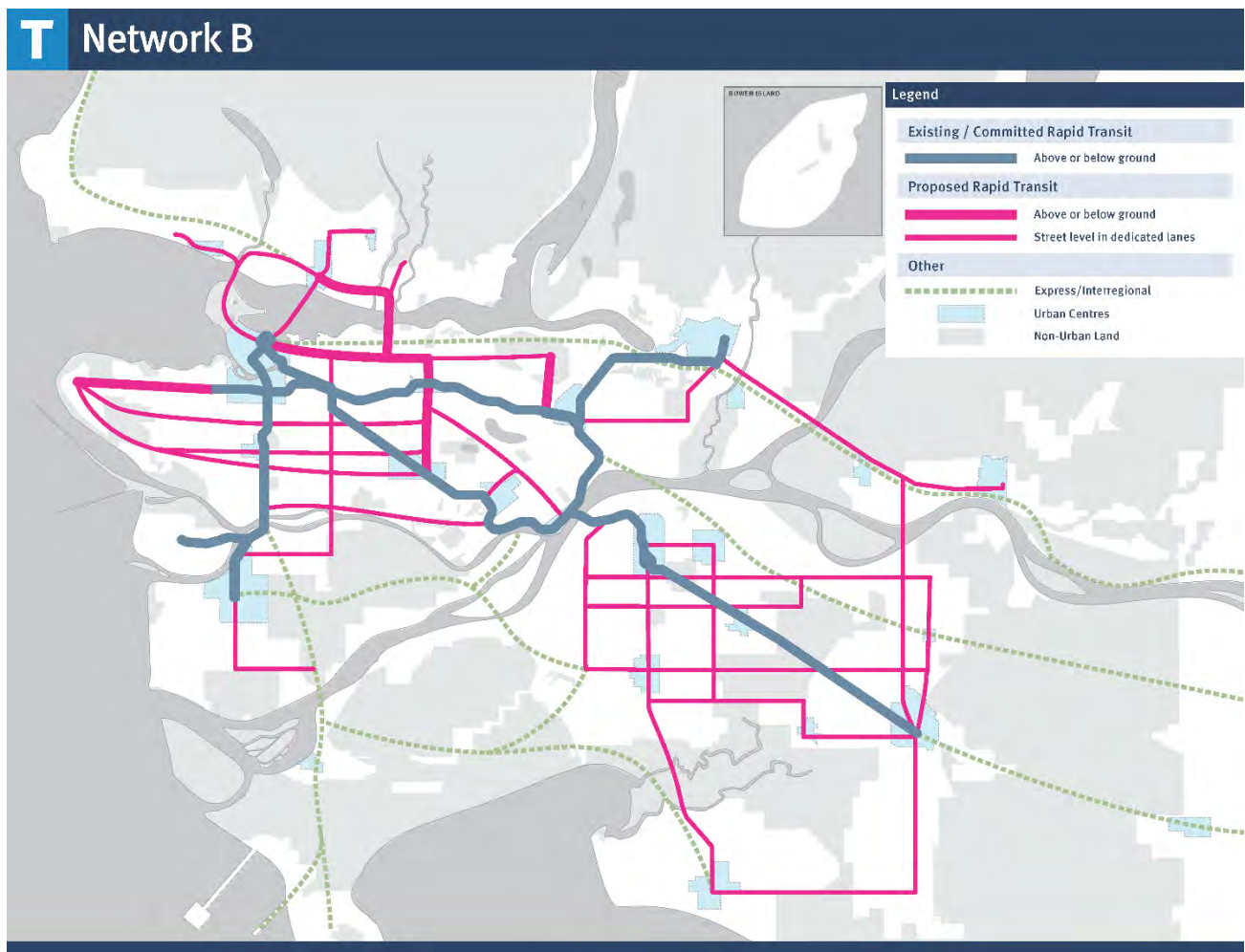


Network B

Street-level rapid transit that makes use of existing road space is much cheaper to build than new guideways and tunnels. Accordingly, the approach illustrated in Network B, which puts more emphasis on street-level rapid transit, would bring more rapid transit to more people in more parts of the region by 2050.

The Network B approach to expanding our rapid transit network would add about 400 more kilometres to our rapid transit network. It would still include about 50 kilometres of new above and below street level rapid transit on those corridors where it is required to meet forecast peak ridership volumes. But, in Network B, the remaining investment would be put towards an additional 350 kilometres of street-level rapid transit.

A trade-off to building more new rapid transit at street-level is a need to change the way our streets are used. While in some cases, new lanes may be able to be added to existing roads to accommodate street-level rapid transit – in most cases it would be achieved through a reduction in general purpose traffic lanes, resulting in less road space for non-transit vehicles. In other cases, it is possible to achieve new transit lanes through a reduction or elimination of curb side parking which could have impacts on local businesses and residents if not managed appropriately.



Note: North Shore crossing alternatives are still under active study and are shown here for illustrative purposes.

How do these two approaches compare?

We have undertaken a preliminary evaluation of how these two approaches to expanding the rapid transit network compare to each other on a series of factors. In addition to analysis for Network A and Network B, we are showing how our current network and a business-as-usual approach compare. Green shading indicates which network approach performs best for each factor.

It should be noted that both the modelling results shown below for Network A and Network B assume a strong foundation of local bus service with frequencies of 15 minutes or better on all routes.

Evaluation Factor	Evaluation Measure	Current	Business-As-Usual	Network A	Network B
Population coverage	Population within walking distance to rapid transit	15%	25%	50%	65%
Employment coverage	Jobs within walking distance to rapid transit	30%	35%	60%	70%
Equitable distribution	Low-income population in areas with low transit access scores	253,000	509,000	83,000	32,000
Flood risk	Kilometres of rapid transit exposed to risk of flooding	15	22	48	72
Service resiliency	Number of high-capacity lines that parallel each other	3	3	17	31
Ridership	Projected passengers per day (million)	1.5	2.4	3.4	3.6
Congestion	Minutes of congested vehicle travel (million)	2,500	8,000	7,200	7,700
Vehicle kilometres of travel	Annual vehicle kilometres of travel from vehicles (million)	13,800	18,500	17,400	17,000
Greenhouse gases from construction	Additional CO ₂ emissions from construction of the network (tons)	n/a	n/a	11,690,000	9,540,000
Cost effectiveness	Cost per additional annual boarding	n/a	n/a	\$223	\$179
	Cost per reduction of vehicle kilometre travelled	n/a	n/a	\$54	\$40
Accessibility	Jobs accessible within 45 minutes by vehicle vs. transit	6.8:1	6.0:1	4.1:1	3.6:1

Figure 7 - Evaluation results for two different approaches to expanding the rapid transit network

As shown in Figure 7, the Network B approach performs better than the Network A approach on most measures including reaching more people and jobs and making transit a competitive choice for more trips, resulting in higher transit ridership at lower costs and a greater reduction in the amount of driving and hence transportation GHGs. Using less concrete, which is a major global source of GHG emissions, the approach shown in Network B also generates fewer GHGs from construction and materials.

However, Network B exposes more kilometres of rapid transit to high flood risk in the low-lying parts of the region, which has an impact on operational resiliency and recovery costs in the event of a flooding event.

The other area where Network A performs better than Network B is with respect to time that people spend in traffic congestion. This is discussed in more detail below.

Spotlight on congestion

We forecast that, over the next 30 years, traffic congestion will continue to grow along with growth in population and the economy. The approaches in Network A and Network B (together with increased local transit frequency) would both result in people spending less time stuck in congested conditions as compared to business-as-usual.

However, Network A which puts more of the rapid transit network above or below street level, results in greater overall congestion reduction (-10%) than does Network B (-4%). While Network B results in greater absolute reduction in driving levels, it also relies on reallocating more road lanes to dedicated transit lanes which is why the overall congestion reduction impacts are not as high.

When we focus on congestion experienced by different road users, Network A is more attractive for people using automobiles while Network B is more attractive for people using transit.

As shown in Figure 8, compared to business-as-usual (BAU), Network A would reduce both transit passenger and auto user congestion (-32% and -9%, respectively). Network B would result in substantially more congestion reduction for transit passengers (-50%) with a modest reduction in congestion for auto users (-1%).

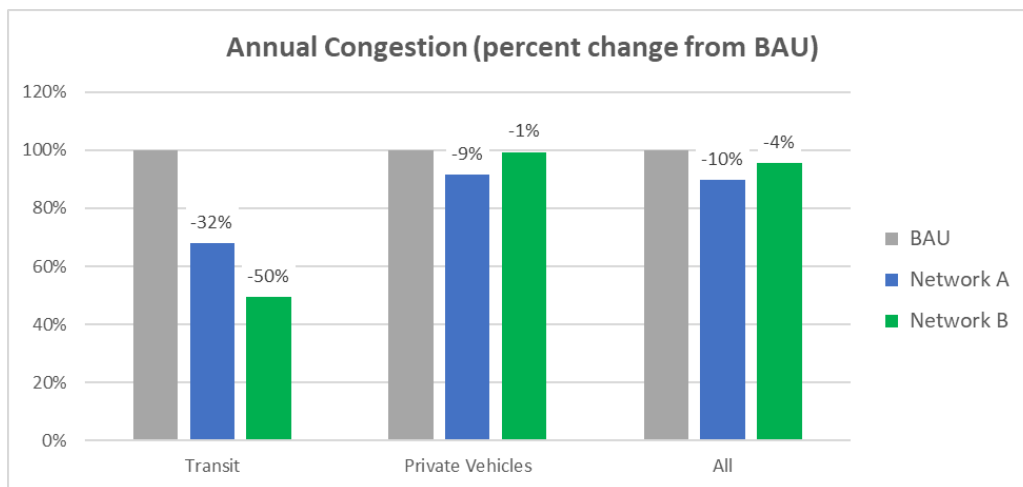


Figure 8 - Annual Congestion (percent change from BAU)

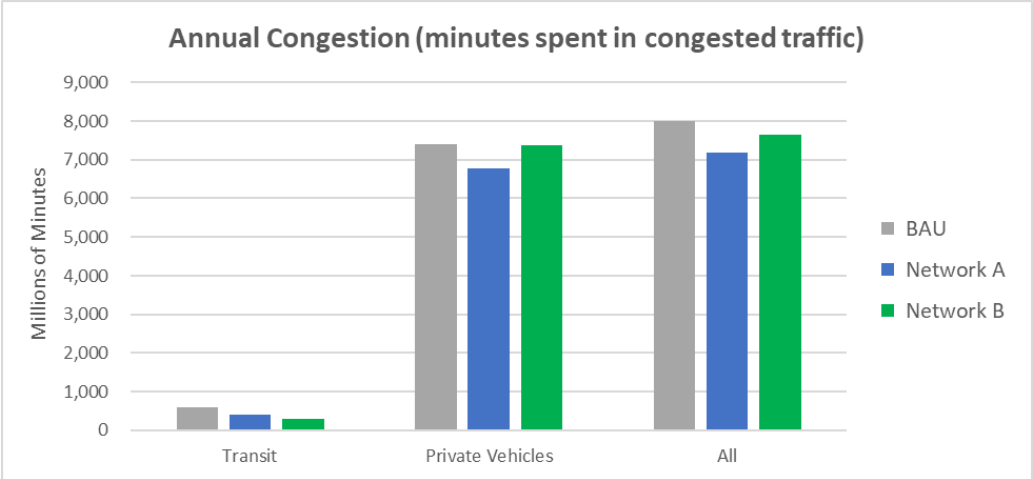


Figure 9 - Annual congestion (minutes spent in congested traffic)

Other traffic reduction and demand management strategies would have the potential to further reduce congestion for both transit and automobiles in relation to business-as-usual.

We need your input

Should we focus on building fewer kilometres of rapid transit but build them with higher levels of traffic separation (above or below street) from the outset? Or should we focus on building as many kilometres of rapid transit as quickly as possible and then upgrade them incrementally over time as additional capacity is needed?

Visit transport2050.ca to take the survey.

Action 3: Automated Vehicles That Provide Convenient Access to Car Trips, Without Adding to Congestion

Phase 2
ENGAGEMENT BACKGROUNDER

TRANSPORT
2050



This backgrounder expands on information in the Transport 2050 Phase 2 Discussion Guide.

Overview

Through Transport 2050, we are proposing actions to serve the needs of those who live, work, and play in Metro Vancouver. One of the transformative actions we are proposing is to *manage how automated vehicles are used in the region. Ensuring they provide convenient travel options without overwhelming the transportation system.*

During Transport 2050 Phase 1 engagement, we received significant feedback about taking advantage of emerging technologies, such as automated vehicles (AVs). Emerging innovations in AV technology have the potential to revolutionize the way we move around the region by promoting safer streets and making transportation more efficient.

At the same time, if not properly integrated, AV technology has the potential to negatively impact transit ridership, increase congestion on streets and curbs, or promote urban sprawl and a dependence on private vehicles.

As new mobility services rooted in AV technology begin to emerge and flourish, the region will need a comprehensive regulatory framework that allows us to benefit from the opportunities while minimizing some of the drawbacks.

What are automated vehicles?

Automation has the potential to drastically reduce crashes and congestion as well as remove barriers for people of different abilities or ages.

Fully-automated vehicles include cars, buses, trucks, drones, delivery robots, self-parking e-scooters, shuttles, and other vehicles that can perform all of the functions of driving using sensors and other technology without a human operator. Once the stuff of science-fiction movies, AV technology has significantly advanced over the last decade.

Increasingly, enhanced driver assistance systems have found their way into the commercial market, including lane assist, collision avoidance systems, and automatic parking. While these systems provide partial automation, a fully automated vehicle is one that never requires the human passenger to take control and does not require a steering wheel.

The Society of Automotive Engineers (SAE) has developed a six-level scale to define varying levels of automation (see *Figure 1*). Each level represents additional transfer of driving responsibility from humans to computers. At the highest levels, vehicles can be operated under total computer control—in certain well-mapped environments for Level 4 (such as urban areas) and in any environment for Level 5. Some critics suggest that Level 5 automation may never be achievable, or is a long way off. However, Level 4 AVs are already in operation in several cities, providing revenue service for both passengers and freight. These are likely to become more commercially available within the decade and commonplace by 2050.

	SAE Level	Name
Human monitors environment	0	No automation the full-time performance by the human driver of all aspects of the dynamic driving task, even when enhanced by warning or intervention systems
	1	Driver assistance the driving mode-specific execution by a driver assistance system of either steering or acceleration/deceleration using information about the driving environment and with the expectation that the human driver perform all remaining aspects of the dynamic driving task.
	2	Partial automation the driving mode-specific execution by one or more driver assistance systems of both steering and acceleration/deceleration using information about the driving environment and with the expectation that the human driver perform all remaining aspects of the dynamic driving task
Car monitors environment	3	Conditional automation the driving mode-specific performance by an automated driving system of all aspects of the dynamic driving task with the expectation that the human driver will respond appropriately to a request to intervene
	4	High automation the driving mode-specific performance by an automated driving system of all aspects of the dynamic driving task, even if a human driver does not respond appropriately to a request to intervene
	5	Full automation the full-time performance by an automated driving system of all aspects of the dynamic driving task under all roadway and environmental conditions that can be managed by a human driver

Figure 1 - Society of Automotive Engineers - Levels of Driving Automation

How could shared AV technology benefit our region?

Picture a world where you can conveniently access a vehicle trip without needing to own one or even having to drive. Where there are far fewer vehicles on the road, meaning less congestion, greenhouse gases, and safety hazards. This is a future that AV technology could make possible.

Instead of using mobile apps to hail a taxi or a ride sharing vehicle, users could hail an automated vehicle to help them reach their destination. Sidewalk delivery drones, such as those now operational in cities like Toronto, and larger goods delivery bots, which have been approved to operate on public streets in California, could reduce private vehicle trips to grocery stores while avoiding congestion from larger trucks and delivery vehicles.

Using smart technology to navigate, shared AVs could help users safely arrive at their destinations before moving on to pick up other passengers. This could reduce the total number of vehicles on the road, freeing up urban space and streets for other applications like wider sidewalks, protected bike lanes, public space, or transit priority lanes.

- **Affordability:** New services are already providing access to vehicles without the need to own one. Over the last few years, services such as carsharing, ride hailing, ride sharing, and peer-to-peer car rentals have become available and increasingly popular. The average personal car costs over \$10,000 per year to own¹, whereas carsharing costs about \$1,500 per year on average.
- **Access to vehicle trips:** Access to autonomous, connected, electric shared vehicles could improve transportation equity for people with disabilities, seniors, youth, people without driver's licenses, and others.
- **Safety:** Connected and automated vehicle technologies have the potential to improve road safety and roadway efficiency by increasing real-time communication and eliminating the human error that is responsible for the vast majority of collisions.
- **Regional cost-effectiveness:** Autonomous vehicles in a transit setting would be more cost-effective to operate and therefore could provide wider transit system coverage and higher frequency service. With fewer vehicles, there would be also less costs associated with maintaining road infrastructure.
- **People-oriented spaces:** Fewer vehicles on the road could allow us to repurpose urban space and streets currently used for parking and movement to create safer streets that prioritize pedestrians without compromising traffic flow.
- **Efficiency:** Automated and connected vehicles can communicate with one another in real-time and therefore could take advantage of 'platooning behaviour'. Platooning would allow several vehicles to travel closely together, improving energy efficiency and traffic flow. Dynamic lanes or curb space reallocation features could also prioritize access for higher order users such as emergency vehicles, as well as transit and shared vehicles.

¹ Canadian Automobile Association Driving Costs Calculator: <https://carcosts.caa.ca>

What considerations or challenges exist with automated vehicle technology?

The introduction of AVs presents challenges and opportunities that will need to be addressed:

- **Ensuring the technology is safe:** Before AVs will be allowed on public streets, the technology will need to be demonstrably safe for all road users, including vulnerable road users, such as pedestrians and cyclists. Of concern is the transition period when AVs are first introduced, and how AVs will interact with human drivers in mixed traffic conditions. Level 3 automated vehicles are noted to be particularly dangerous as they require an otherwise non-attentive driver to take control of the vehicle in uncertain situations. Some observers suggest that Level 3 AVs should not be permitted on public roads as a result of this safety challenge. The true safety benefits of AV technology are realized at SAE Level 4 or higher when human drivers are not required to pay attention.
- **Privacy and cyber-safety:** One concern related to AV technology is data privacy and the potential for cyber-attacks. Reliance on networked vehicles creates a new set of risks, which will require significant cyber-security measures and potential adaptations to safeguard.
- **Labour market considerations:** Local jobs related to goods movement and transportation services could be disrupted by automation. At the same time, the AV market has the potential to create substantial new employment opportunities related to technology, logistics, and communications. Prior to any introduction of AVs in B.C., labour laws and taxation systems will need to be updated to ensure a just, fair, and gradual transition for workers impacted by these technological changes.
- **Urban sprawl:** The low cost and convenience of AVs may encourage people to move further from the urban core, particularly when paired with rising real estate prices in dense urban centres. Urban sprawl promotes greenspace and agricultural land degradation. In addition, with more people living in suburban and exurban areas, the cost to provide infrastructure services increases on a per-capita basis. Demand management tools (such as pricing) can help better manage urban growth by factoring in transportation costs.
- **Regulatory framework:** Work is required to identify roles and responsibilities for governance of automated vehicles, including the identification of regulatory changes needed to address vehicle standards, licensing, registration, insurance and liability. Learning from B.C.'s experience with ride sharing, a coordinated regional approach would be an important factor to ensure functionality.
- **Congestion:** Of particular concern for Transport 2050, without a careful introduction, AVs have the potential to substantially increase vehicle kilometres travelled and traffic congestion. The advent of AVs combined with electrification will drastically reduce the cost to drive per kilometer, incentivizing the additional deployment and usage of private vehicles. AVs will permit zero-occupant trips. And they will allow e-commerce operations to warehouse their goods in automated pods on our streets, closer to end customers. All of these dynamics could lead to more traffic. To avoid increasing congestion, the region will need to have measures in place to promote carsharing and manage transportation demand (see pages 6 and 7).

How do we get to an AV future that creates the kind of region we want to live in?

To make AV technology work well in our region, government, transit agencies, and private partners must cooperate.

In the Phase 2 engagement survey, we're asking for your input about three specific elements of the proposed action around AVs as outlined below.

1. **Promote carsharing.** Create incentives to make the sharing of vehicles easier, cheaper, and more convenient.

Carsharing and ride hailing have already given residents greater access to transportation without needing to own vehicles. These services provide vehicle access for short trips to the grocery store, or longer trips to the ski slopes. Importantly, each carshare vehicle is estimated to take between 5-11 personally-owned cars off the road², because one car can perform multiple trips throughout the day instead of being parked empty.

AV technology has the potential to further shift the trend towards carsharing away from private vehicle ownership because the vehicle will be able to reposition itself and meet the next user as needed, making accessing the vehicles more convenient for more people.

Measures to promote carsharing, both now and in a more automated future, could include:

- Infrastructure access (including parking, road space, curb space, refueling/charging) that prioritizes space for carshare vehicles;
- Taxation, pricing and other financial measures to incentivize carsharing;
- Physical integration of carsharing with other modes of travel, including public transit and active transportation, resulting in more convenience and quicker trips; and
- Integration of trip planning, ticketing and payment of carsharing with other pay-as-you-go modes, such as transit and bikeshare, into a single "Mobility-As-A-Service" app.

2. **Reduce the number of empty cars on the road.** For automated vehicles, introduce fees to discourage trips without any passengers.

As noted earlier, by making driving cheaper, easier and more accessible, AVs could prompt more car travel, including longer trips and trips without anyone in the car.

Imagine someone working in a busy downtown core sending their private AV home after dropping them off in the morning to avoid paying for parking. Or someone sending their AV around the block a few times while they run an errand. Both of these scenarios create trips on our roads with empty cars.

Charging a fee for empty car trips could discourage behaviour that could otherwise have empty cars taking up space on our roads, causing unnecessary congestion.

² [The Metro Vancouver Car Share Study](#) (2016).

3. Reduce congestion. For automated vehicles, introduce fees for pick-ups and drop-offs in congested areas (i.e., congested urban cores, entertainment districts, etc.).

In certain areas of our region, such as in urban cores or busy commercial streets or at sports or concert venues, we already see exceptionally busy curbs at certain times where many people are being picked-up or dropped-off by taxis, ride hailing services, family and friends; and where there is simultaneously demand for the same curb-space from trucks and vans delivering cargo to businesses or parcels to residents.

The ability to conveniently summon a low-cost AV on-demand to pick us up and drop us off anywhere we like will be one of the great advantages of automated vehicles. In essence, it will reduce the cost and improve the availability and convenience of using a taxi, ride-hail or carshare, making this on-demand shared option even more attractive than owning a personal AV for many people. However, now imagine this significant increase in pick-up and drop-off activity in the context of the busy curb-sides described above.

One way of addressing this increased demand for the curb-side could be through implementing an easy and automated system of reservations for curbside pick-ups and drop-offs. This would provide certainty for commuters that they would have a confirmed time and space at the curb. Instead of paying for parking for longer periods as we do today, we would pay to use the curb space in congested areas for just a short period of time.

The future is AV

The emergence of AV technology will change the face of transportation in our region. While the technology may be years away from full commercial implementation, work can begin now to help shape the future of our region and how we want to live in a fully automated world.

By choosing a future with more carsharing and less car ownership, AVs could help foster more sustainable and more equitable mobility options in our cities, and create a greener region with less congestion, and safer streets.



Urban Mobility: Credit "Bosch"

We need your input

What types of measures would be acceptable to help ensure that our region benefits from the advantages of automated vehicles without adding to congestion on our roads and at the curb?

Visit transport2050.ca to take the survey.

TO: Mayors' Council on Regional Transportation
FROM: Mike Buda, Executive Director, Mayors' Council Secretariat
DATE: April 27, 2021
SUBJECT: **ITEM 3.1 (LATE ITEM) – 2021 Federal and Provincial Budgets**

RECOMMENDATION:

That the Mayors' Council on Regional Transportation receive this report.

PURPOSE:

To provide an update and next steps on recent federal and provincial budgets.

BACKGROUND:

Between 2016 and 2021, senior governments invested approximately \$5.5 billion in regional transit and transportation capital projects in Metro Vancouver, most of it delivered as part of long-term funding programs that support long-term regional plans. Senior government invested another \$644 in operating funding, to support the delivery of transit services during the pandemic. This 5-year total dwarfs by a factor of 3 or more any equivalent previous period of senior government funding for regional transit, which were mostly dominated by "one-off" funding for large capital projects like the Evergreen Line and the Canada Line.

Federal funding

Federal transit funding is currently provided to TransLink by the Public Transit Infrastructure Fund (PTIF) and the Investing in Canadian Infrastructure Fund (ICIP)) established in 2016 and 2017 as a 10-year, \$20 billion federal commitment. These federal funding programs together allocated \$2.4 billion to the Phase One and Two Plans of the 10-Year Vision in November 2016 and June 2018, respectively. In addition, the annual \$2.2 billion permanent federal Gas Tax Fund (GTF) delivers approximately \$140 million each year through the Metro Vancouver Regional Fund, administered by Metro Vancouver.

TransLink has already directed or is about to direct over 95% of its PTIF and ICIP funding allocation to Phase One and Two Projects. GTF funding is allocated annually to projects identified in the current Investment Plan through a Metro Vancouver application process.

Provincial funding

In the 2017 Provincial Election, the NDP committed to a 40% share of total costs of all capital projects in the Mayors' Council's 10-Year Vision. That commitment was formalized in subsequent Ministerial Mandate letters and implemented in subsequent budgets. The Phase Two Plan, approved in June 2018, included a 40% provincial share of all capital costs of approximately \$2.5 billion.

Pandemic relief and recovery

Over the summer of 2020, the Province of B.C. signed an MOU with TransLink to work in partnership to ensure that TransLink will recover and rebuild from the financial and operational impacts of COVID-19. In September 2020, the provincial and federal governments committed \$644 million in Safe Restart Agreement (SRA) emergency relief funding to cover pandemic-related operating losses at TransLink in 2020 and 2021. The entire amount of this funding was received in January 2021.

DISCUSSION

The Mayors' Council's objectives for the 2021-22 budgets of the Government of Canada and the Province of BC were to secure funding commitments for:

1. Pandemic recovery and rebuilding support that extends beyond the expiry of SRA funding.
2. Capital funding to complete the remaining projects in the Phase Two and Phase Two Update Plans of the 10-Year Vision, including Stage 2 of the Surrey-Langley Skytrain, the Low-Carbon Fleet Strategy, and project studies to support future planning.
3. Permanent transit funding to support new transit expansion projects to be identified in Transport 2050 and the next 10-Year Vision, both to be approved in early 2022.

The Mayors' Council's submission to the federal budget consultation process is attached as Annex 1. No formal submission was made to the provincial budget consultation process given the ongoing and intensive work with the province governed by the pandemic recovery MOU.

The [federal budget](#) was released on April 19 and the [provincial budget](#) was released on April 20.

Analysis of 2021 Federal Budget

The federal budget confirms and implements \$14.9 billion in new transit funding, including a Permanent Transit Fund, announced by the PM in February 2021, and the one-time doubling of the Gas Tax Fund in 2021 (now called the Canada Community-Building Fund (CCBF)) announced in March.

Although not detailed in the budget itself, previous government announcements have outlined how this \$14.9 billion commitment will be allocated:

- \$9 billion for the first three years of the \$3B/year Permanent Transit Fund, beginning in 2026;
- \$5.9 billion for stimulus transit projects between 2021 and 2025, allocated accordingly:
 - \$2.7 billion for zero-emission vehicle (ZEV) buses,
 - \$400 million for active transportation projects,
 - \$250 million for rural transit.
 - The remaining \$2.55 billion is not yet allocated and is expected to be available for shovel-ready major transit projects like SLS Stage 2

GTF funds are allocated to TransLink for regional transit projects by a formula set out in federal-provincial-UBCM legislation. This one-time doubling of the Gas Tax Fund announced by Federal government on March 25th, 2021 will double TransLink's annual allocation of \$140 million in 2021. TransLink will access these funds through an application process administered by Metro Vancouver; an update on this annual application process will be shared with the Mayors' Council in the early Fall.

Although the budget did not make any project-specific announcements for major transit projects like Surrey-Langley SkyTrain Stage 2, the budget has allocated sufficient funding to support projects like this one, if and when the government is prepared to make a commitment.

The 2021 federal budget commitments are significant and respond almost fully to the Mayors' Council's budget submission. The commitment to a Permanent Transit Fund is transformational and responds to a long-time local government "ask" for long-term transit funding to support and enable better long-term planning like Transport 2050 and the next 10-Year Vision. The one omission from the budget is any federal extension to the Safe Restart Agreement that would support continued pandemic recovery at TransLink and alleviate the financial pressures of \$2 billion in 2022 and beyond.

Analysis of 2021 Provincial Budget

As with the federal budget, the provincial budget did not contain any surprises. As expected, and most importantly, the budget committed to:

- Full funding of the costs for BC Transit and TransLink to provide free transit for 12 and under starting in September 2021 (more information on implementation plans to come).
- A commitment to complete the planning for Surrey-Langley SkyTrain, and a notional funding envelope in their capital budget to fund the provincial share.

We had not expected that the province would use this budget to announce its funding commitment to SLS Stage 2 since updated project planning is still underway and must be completed (expected shortly) before commitments can be made. According to Finance Minister Robinson, the budget provides the fiscal room for the province to fund their share of the SLS project:

"Finance Minister Selina Robinson said in her budget speech on Tuesday that "our plan also lays the foundation for the new Surrey-Langley SkyTrain all the way to Langley and a toll-free crossing to replace the George Massey Tunnel." Robinson said Wednesday that the government is committed to both projects and that money in the budget is set aside once plans are finalized. ... Robinson said the province is in touch with the federal government on both infrastructure projects to secure financial support."

- From the [Vancouver Sun, April 21, 2021](#)

Finally, as expected, the province did not use this budget to commit to additional pandemic relief funding for transit. As per the MOU signed last year, the province, TransLink and the Mayors' Council are developing a COVID recovery agreement as part of the next Investment Plan over the summer and fall.

This budget contains previously announced but still significant infrastructure spending, not just for transit, but for active transportation and the Low-Carbon Fleet Strategy, which is good news for the region. Together with the province's ongoing commitment to pandemic recovery through the MOU process, this budget meets the Mayors' Council's expectations expressed prior to the budget.

NEXT STEPS

Work with the Province on COVID financial recovery will continue under the MOU, and separately with the SLS project team to prepare that project for expected senior government funding commitments. The

federal government has committed to work with transit agencies on the design of the PTF in the coming months. More details on the application process for stimulus transit funding is expected shortly.



March 8, 2021

ANNEX 1

Honourable Chrystia Freeland
Deputy Prime Minister and Minister of Finance
and

Honourable Catherine McKenna
Minister of Infrastructure and Communities
House of Commons
Ottawa, Ontario K1A 0A6

Sent via e-mail: chrystia.freeland@canada.ca // infrc.minister-ministre.infrc@canada.ca

Re: Submission to the Government of Canada's Pre-Budget Consultations 2021

Deputy Prime Minister Freeland and Minister McKenna,

I am writing to you on today with our submission to the 2021 pre-budget consultations.

First off, I want to thank the Government of Canada for its recent commitment of \$14.9 billion in new transit funding, including \$2.7 billion for zero-emission buses. This was a welcome response to our 2019 call for long-term, predictable funding. In fact, it is a game-changer for transit in Metro Vancouver, and will enable us to advance planned but unfunded projects like the Surrey-Langley SkyTrain project and to accelerate our Low-Carbon Fleet Strategy, that will help our region create new jobs, protect transit service and recover from the pandemic more quickly, at the same time as giving us funding certainty to support better and more sustainable long-term planning.

In our pre-budget submission below, we urge the government to:

1. Commit recently announced stimulus and zero-emission bus funding as soon as possible to \$2.1 billion in approved and widely supported shovel-ready projects in Metro Vancouver's current transit plans:
 - Surrey-Langley SkyTrain (Stage Two - Fleetwood to Langley)
 - Low Carbon Fleet Strategy (Phase Two)
 - Expo-Millennium Line Upgrade Project (OMC4)
 - Active transportation projects
 - Project plans and studies to advance development of future transit expansion projects to be confirmed through the Transport 2050 planning processes
2. Extend the Safe Restart Agreement for COVID-19 recovery to 2022 and beyond.

COVID-19 recovery

Recovering Canada's transit systems from a global health emergency is too big a challenge for any one order of government to handle on its own which is why we welcomed the Province of BC's and the Government of Canada's partnership with us to get through this crisis with the Safe Restart

Agreement (SRA). This funding has been a critical tool to maintain transit service at levels that essential workers need and to keep our region moving as the economy recovers. Although transit ridership, which decreased as much as 80% last spring, will continue to recover as the pandemic crisis passes, it is projected to take up to 4-5 years for ridership to return to pre-pandemic levels depending on the speed and nature of the economic recovery and changes in travel behaviour. This will result in additional pandemic-related losses of \$800 million to \$1 billion between 2022 and 2026. Without additional senior government relief funding, TransLink will be confronted with the need to reduce transit service levels and delay planned transit expansion – which would prolong ridership recovery, hold back the economy and impact those who depend on transit – and/or dramatically increase regressive revenues like fares or property taxes.

With TransLink’s pandemic-related losses projected to outstrip current SRA funding later in 2021, and to continue for another 4-5 years, we join the Federation of Canadian Municipalities and the Canadian Urban Transit Association in calling on the federal government to extend SRA funding to provinces beyond 2021.

Building back better

At the same time as we focus in the near-term on returning TransLink to financial sustainability following the pandemic, we remain committed to delivering the region’s long-term transit expansion plans. We know that Metro Vancouver’s pandemic recovery and future economic growth, affordability and sustainability prospects rest in part on continuing to expand mobility options that will reduce congestion and GHG emissions and improve quality of life.

Our [10-Year Vision for Metro Vancouver Transit and Transportation](#) was midway through implementation when the pandemic delayed some already-approved and about-to-be approved projects. We are updating our 30-year region-wide, multi-modal transportation strategy, Transport 2050, to identify the region’s future transit priorities that will look to investments from the Permanent Transit Fund.

In the near-term, we have committed to delivering these shovel-ready projects from the 10-Year Vision that are eligible for recently announced stimulus funding and ZEV bus funding:

- Surrey-Langley SkyTrain Stage Two (Fleetwood to Langley):¹ **~\$1.5B**
- Low Carbon Fleet Strategy (Phase Two):² **\$560M**
- Expo-Millennium Line Upgrade Project (OMC4): **\$300M**
- Active transportation projects, and project plans and studies to support Transport 2050 planning processes: **\$50M**

See backgrounder attached for more information on these shovel-ready projects. TransLink has already directed 94% of its \$2.4 billion Investing in Canadian Infrastructure Program (ICIP) allocation to specific, funded and approved projects in the 10-Year Vision that are either in service, in construction or about to go to procurement. The unfunded projects listed above are

¹ Stage One from King George Boulevard to Fleetwood is already funded through ICIP, provincial and regional contributions. Stage 2 cost estimate based on 2019 planning for the whole corridor.

² Phase One (years 1-3) funded by Gas Tax Fund, and regional contributions

included in our region's transit plans that date back to 2014 or earlier and are designed to boost ridership and reduce congestion and GHG emissions, are widely supported, and procurement-ready once senior government funding is finalized.

We believe our region's track record at delivering transit projects based on region-wide, long-term transit plans that in turn lead to dramatically increased transit usage is nation-leading and should be considered in funding allocation decisions.

We look forward to continuing to work in partnership with the Government of Canada, along with the Province of BC, to expand and improve transit, active transportation and new mobility options in Metro Vancouver to keep our economy and residents moving quickly, safely, affordably and cleanly.

Sincerely,



Mayor Jonathan X. Côté
Chair

cc: Minister Selina Robinson, BC Minister of Finance
Minister George Heyman, BC Minister Responsible for TransLink
Metro Vancouver-area Members of Parliament
Councillor Garth Frizzell, President, Federation of Canadian Municipalities
Marco D'Angelo, President & CEO, Canadian Urban Transit Association
Members of the Mayors' Council and TransLink Board



BACKGROUND

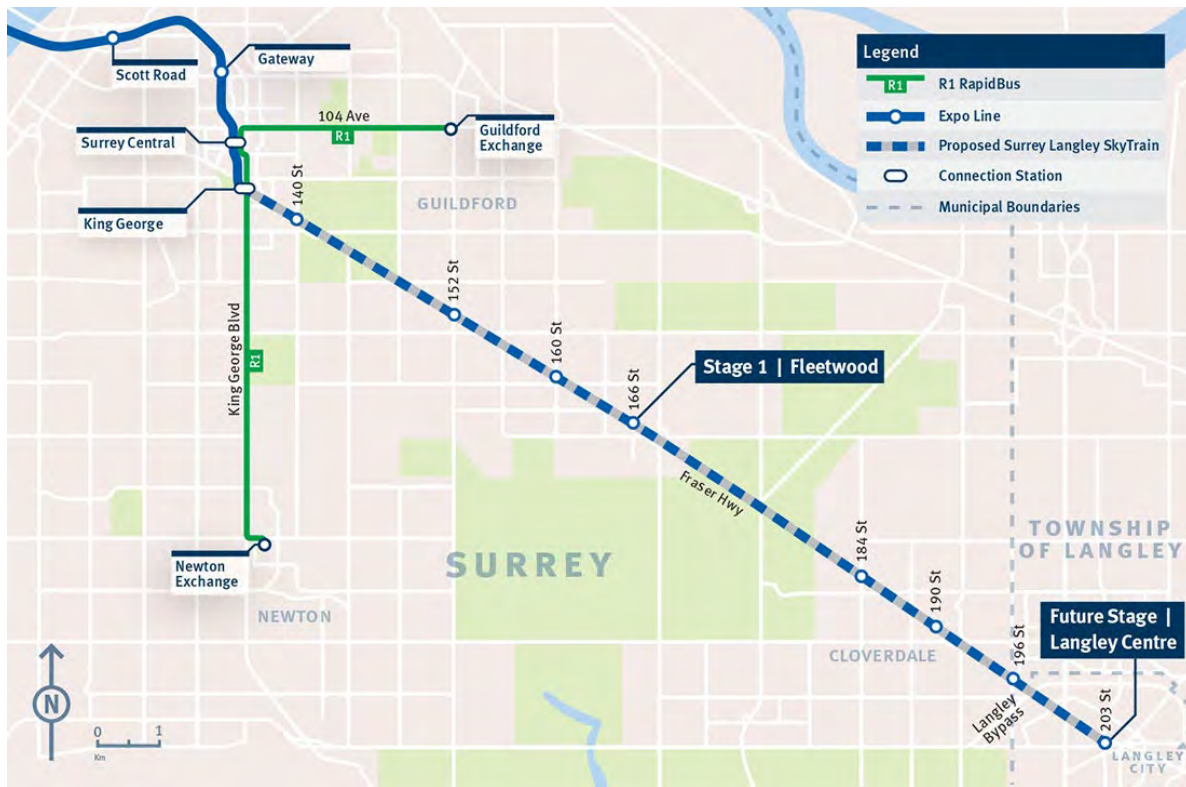
SHOVEL-READY TRANSIT PROJECTS IN METRO VANCOUVER

March 8, 2021

Surrey-Langley SkyTrain

The Surrey Langley SkyTrain project will extend the Expo Line along Fraser Highway, improving connectivity and accessibility for residents and businesses south of the Fraser River – a part of our region that will welcome 420,000 new residents and 147,000 new jobs by 2050 – with high-speed and frequent transit service that provides more than 10 times the capacity of bus service today.

Current estimates put the capital cost of the proposed Surrey Langley SkyTrain – from King George SkyTrain Station to Langley City Centre – at \$3.1 billion. Currently, there is approximately \$1.63 billion in confirmed funding, including \$500 million from the Federal Government, which is enough for Stage 1 to reach 166 St in Fleetwood by 2024. Stage 2 of the project from Fleetwood to Langley City was estimated in 2019 to cost \$1.5 billion but is currently without a federal contribution.



Low Carbon Fleet Strategy

In October 2018, the Mayors’ Council and the TransLink Board of Directors approved the target to reduce greenhouse gas emissions by 80% by 2050 and use only renewable energy in all operations by 2050. The Low-Carbon Fleet Strategy (LCFS) was designed and approved to support these targets by replacing all retiring conventional diesel buses with battery-electric buses and transitioning to a fleet operating entirely on renewable energy by 2050. Each bus is expected to reduce 100 tonnes of greenhouse gas emissions and save \$40,000 in fuel costs per year compared to a conventional diesel bus.

Pilot testing and an initial order of 15 new battery-electric buses was funded through the federal Gas Tax Fund. To accelerate the next phase of LCFS, TransLink requires senior government funding of \$560 million for 57 more battery-electric buses and the supporting charging infrastructure.

Expo-Millennium Line Upgrade Project (OMC4)

To accommodate the future growth of the region, and to support longer trains and more frequent service, TransLink’s Expo-Millennium Line Upgrade Project (EMUP) is making major investments over the next ten years to the existing SkyTrain network. These upgrades will keep the system safe, reliable, and comfortable for our current and future customers. EMUP includes the purchase and delivery of 200+ new train cars to expand capacity and replace aging fleet, expanded vehicle storage facilities to accommodate new fleet, and upgrades to operations and maintenance centres, mainline power, and control systems to support more frequent train service and longer trains.

The Government of Canada, Government of B.C., and the region have already committed to investing \$1.47 billion in the Expo and Millennium Upgrade Program until 2027. This program is funded through Phase 2 of the 10-Year Vision includes funding from the Investing in Canada Infrastructure Program. One component of the project, the new Operations and Maintenance Centre 4 in Coquitlam, remains underfunded by \$300 million, and is critical to supporting already ordered new SkyTrain vehicles to support expanded capacity of the existing network, as well as extensions on Broadway and in Surrey to Langley.

Transport 2050

TransLink is now leading the development of a new Regional Transportation Strategy called "Transport 2050". As a blueprint for the region, Transport 2050 (T2050) will set out the vision, goals, strategies, and key initiatives for Metro Vancouver for the next 30 years. It will outline transportation projects, services and policies that our region will work to deliver between now and 2050. At the same time, Metro Vancouver is developing Metro 2050, an updated regional growth strategy. Together, these strategies will shape our region over the next 30 years.

T2050 will help the region identify and prioritize the expansion of the region's rapid transit network, interregional commuter connections, active transportation and the role of emerging transportation technologies. This planning process will lead to a funding priorities for the new Permanent Transit Fund.

For more information, please contact Mike Buda, Executive Director, Mayors' Council Secretariat, at (778) 375-7669 or mike.buda@mayorscouncil.ca.