



Regional Transportation Strategy

For the purposes of the *South Coast British Columbia Transportation Authority Act*, this document constitutes the long-term strategy for the regional transportation system in Metro Vancouver, adopted January 2022.

TRANSPORT
2050



TransLink recognizes the rights of Indigenous Peoples and respects and celebrates the Indigenous Nations on whose treaty lands and unceded territories we are fortunate to live, work, and operate, and recognizes that, in planning and managing the region's transportation system, we have a role to play in advancing reconciliation with Indigenous Peoples.

The standing Welcome Figure was erected by the Skwxwú7mesh Ūxwumixw (Squamish Nation) at the site of a Squamish ūxwumixw (village) called Sun'ahk.





The 2050 we want: Access for Everyone

Our Vision: In 2050, everyone can easily connect to the people, places, and opportunities that they need to thrive — because we all have real choices that we can count on, that we can afford, and that we can safely enjoy for generations to come. Our transportation system supports an inclusive, future-ready region that has meaningfully advanced reconciliation.

Message from the Chair of the Mayors' Council and Chair of the TransLink Board of Directors

A Time of Accelerating Change

The past 30 years have been a time of unprecedented change. Dramatic social, environmental, economic, and technological shifts have transformed the world and how we move and live here in Metro Vancouver. Given this pace of change, it's likely the region of tomorrow won't resemble the one of today. It's up to us to come together as a region — just as we've done throughout the past — to actively shape the future we want.

Thirty years ago, the region adopted the Livable Region Strategic Plan and Transport 2021. These foundational strategies laid out a vision for compact growth, transit-oriented communities, and sustainable transportation, forming the basis for the excellent transit and transportation system we have in Metro Vancouver today. With much of what was first proposed in Transport 2021 now delivered, it's time to look forward, together. Transport 2050 provides this outlook and represents a major update to the region's long-term transportation vision.

Challenges and Opportunities

Like all regions, ours faces extraordinary challenges. From the accelerating climate emergency whose destructive impacts we are now

clearly feeling, to the affordability crisis leaving many struggling to stay in this increasingly expensive region, to our country's reckoning with its relationship with Indigenous Peoples, to our recovery from the COVID-19 pandemic. But each of these challenges also present us with an opportunity to do better — to become the just, equitable, inclusive, and carbon-free region we aspire to be.

A Vision for the Next 30 Years: Access for Everyone

Transport 2050 will help us achieve that aspiration. Together with Metro 2050, the Regional Growth Strategy, and Climate 2050, the region's climate action plan, both of which were developed in tandem with Transport 2050, we have the blueprints that will help us reach our shared regional goals. Oriented around a theme of *Access for Everyone*, Transport 2050 is about making sure that every person in this region has access to the opportunities they need to thrive. To facilitate this inclusive vision, we have proposed making use of many new ideas, such as automated vehicles, as well as some very old ideas, such as people-first streets.

While TransLink facilitated the development of Transport 2050, this strategy includes actions for many partners who have some role to play

in planning, funding, delivering, and managing the region's transportation system. To that end, Transport 2050 provides us with a platform to co-operate like never before. It has laid the groundwork for more collaborative relationships with Indigenous Nations as well as better co-ordination with our municipal, regional, provincial, and federal government partners.

Later this year, we'll work with our partners to produce a more detailed implementation blueprint confirming the key regional transportation priorities that we'll get started on right away.

Together, we look forward to shaping the transportation future this region wants.



A stylized, handwritten signature in black ink, appearing to read 'J. Coté'.

Jonathan X. Coté
Chair, Mayors' Council on
Regional Transportation



A stylized, handwritten signature in blue ink, appearing to read 'L. Cunningham'.

Lorraine Cunningham
Chair, TransLink Board of Directors



A Message From Minister George Heyman

I would like to congratulate the Mayors’ Council on Regional Transportation and the TransLink Board of Directors on completing the new Regional Transportation Strategy (RTS), *Transport 2050*, and all those who have worked to get the strategy to where it is today.

Tens of thousands of people contributed to this plan through the public engagement process because they want to shape a better future that includes convenient transportation options that help address climate change, while creating healthy, more equitable and affordable communities. I believe *Transport 2050* delivers on all these fronts.

Our government has been a proud senior partner in developing *Transport 2050* since its inception. I have enjoyed participating in the Policymakers Coordination Forum with colleagues from the Province, TransLink and the Metro Vancouver Regional District to discuss the big policy issues facing the region and the province at large and exploring how we can work together to reach our shared objectives.

The Province is eager to support regional strategies and actions that align with provincial priorities, including integrated land use and transportation planning, climate action, affordability, and improving mobility for people, goods, and services. Our government is supportive of the steps *Transport 2050* takes towards advancing reconciliation and social equity to make it easier for everyone to travel around the region and access opportunities. We are also supportive of enhancing resiliency — at both the individual and transportation network levels — to adapt and thrive in times of change and disruption.

As part of delivering on the goals and targets of *Transport 2050*, I would like to highlight the Province’s *CleanBC Roadmap to 2030* and *Homes for B.C.* plans and their importance in the Metro Vancouver region. I expect the implementation of the RTS will support these provincial initiatives. By aligning priorities — such as the shared goal to have 50% of personal trips in the region be made by transit or active transportation modes by 2050 — TransLink and the Province will create a better, cleaner transportation system that will serve generations to come.

As *Transport 2050* moves into implementation, our government will continue working closely with the region to deliver on the long-term goals and targets of the strategy.

Sincerely,

A handwritten signature in blue ink that reads "G. Heyman".

George Heyman
*Minister of Environment and Climate Change Strategy
and Responsible for TransLink*





Recognition of Indigenous Peoples and Voices

TransLink invited the Indigenous Nations with modern treaties and unceded territories within the Lower Mainland, as well as Indigenous organizations, to participate in the Transport 2050 Indigenous Advisory Committee (IAC). The Indigenous Nations and Indigenous organizations that were invited to participate in the Transport 2050 IAC are:

- ǵǵǵǵ (Katzie First Nation)
- q'wa:ń ǵ'ǵń (Kwantlen First Nation)
- Kwikwǵǵǵ (Kwikwetlem First Nation)
- mǵthxwi (Matsqui First Nation)
- Métis Nation BC
- xwmǵkwǵǵǵ (Musqueam Nation)

- qiqǵyt (Qayqayt First Nation)
- se'mya'me (Semiahmoo First Nation)
- Skwxwǵ7mesh Úxwumixw (Squamish Nation)
- scǵ waθǵn mǵsteyǵxw (Tsawwassen First Nation)
- sǵlǵlwǵtaǵǵ (Tsleil-Waututh Nation)
- Vancouver Aboriginal Friendship Centre Society

It should be noted that Tsawwassen First Nation negotiated a modern treaty with a formalized role in decision-making processes through the TransLink Mayors' Council on Regional Transportation, per the *South Coast British Columbia Transportation Authority Act*.

Indigenous Nations and Indigenous organizations were offered opportunities to participate in the Transport 2050 IAC and to provide input on the Transport 2050 engagement process and the development of the draft Regional Transportation Strategy (RTS) through group meetings, individual meetings, and written submissions.

Through the engagement process on the draft RTS, key interests, issues, and priorities were expressed by the Transport 2050 IAC as follows:

Service Provision

- Transportation services to on-reserve communities
- Improved transportation services to treaty lands
- Improved accessibility for people utilizing bicycles to access transportation services near on-reserve communities
- Improved accessibility for people with disabilities and mobility challenges
- Safe and well-lit access to transportation, including bus shelters, pedestrian walkways, and transit facilities
- Consideration for improved security on transportation services

- Improved recruitment and retention of Indigenous employees
- Improved cultural awareness training for staff and decision-makers
- Cultural recognition and public education

Project Consultation and Engagement Processes

- Engagement in early transportation system planning, land use, and environmental management processes
- Inclusion of Indigenous cultural and archaeological knowledge and permitting processes

We extend our sincere gratitude to the Indigenous Nations and Indigenous organizations that have participated in the Indigenous Advisory Committee and helped shape the strategies and actions that we will implement together, with support from our partners, over the coming years.

Recognition, Representation, and Governance

- Representation of Indigenous Nations in governance and decision-making
- Recognition of the rights of Indigenous Peoples

Actions that advance reconciliation with Indigenous communities can be found in Parts E (Strategies and Actions) and F (Implementation Approach), and are shown with this icon:



For a summary of all Indigenous reconciliation-related actions, see Part K (Thematic Index).

TransLink’s Commitment to Advancing Reconciliation with Indigenous Communities

This Transport 2050 strategy contains the broad transportation policy direction expected to guide the actions of many governments and agencies working to plan, deliver, and operate Metro Vancouver’s regional transportation system, including actions related to reconciliation with Indigenous Nations and Peoples.

Commitment and Understanding

As the region’s transportation authority, TransLink recognizes the rights of Indigenous Peoples as well as Indigenous Nations. TransLink is committed to advancing reconciliation through the implementation, by all levels of government, of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and the Truth and Reconciliation Commission Calls to Action. It is a commitment to supporting the fundamental paradigm shift required to dismantle the systemic racism, discrimination, and disparity faced by Indigenous peoples in our society today.

TransLink acknowledges that reconciliation means something different to each Indigenous Nation, community, and individual. We recognize that our actions, intended to advance reconciliation, will be tailored to reflect that Indigenous communities have distinct and unique cultures, interests in governance, rights, histories, languages, and traditions. Like our relationship with Indigenous Nations and Indigenous Peoples, our understanding of the meaning of reconciliation, and its application to our work, will grow and evolve over time.

The Past

Most of the reserve lands throughout British Columbia are not connected to regional transportation networks. This lack of transportation services for Indigenous communities is founded in systemic racial discrimination caused by historical Canadian federal laws, policies, and practices, and complex jurisdictional restrictions. Indigenous communities were purposefully isolated from society, causing marginalization, economic disparity, and impacts on the health and safety of Indigenous Peoples. TransLink collectively acknowledges that past decisions have shaped our region’s current transportation system, including access and mobility options being unavailable for many Indigenous communities.

The Future

Through engagement with Indigenous Nations and Indigenous Peoples on Transport 2050, TransLink has heard that meaningfully advancing reconciliation is reliant on telling the truth. Reflecting that access for Indigenous Peoples is deeply rooted in this history, and with *Access for Everyone* as the theme for Transport 2050, TransLink commits to acting to address access to the transportation system for Indigenous Nations and Indigenous Peoples.

Access for Everyone is about making sure that every person living in our region can conveniently, reliably, affordably, safely, comfortably, and cleanly connect to the opportunities they need to thrive. *Access for Everyone* includes Indigenous Nations and Indigenous Peoples.

TransLink acknowledges that building mutually beneficial relationships and advancing reconciliation with Indigenous Nations and Indigenous Peoples is overdue. Looking forward to the years ahead, there is significant work to be done to foster inclusivity and collaboration with Indigenous Peoples that advances reconciliation within the region.

TransLink knows that demonstrating a commitment to reconciliation requires action. This Regional Transportation Strategy sets out specific actions that we commit to working with Indigenous Nations to implement over the next 30 years. Among these actions, a priority will be to initiate work with Indigenous Nations, federal, and provincial governments, and transportation partners to explore and implement multimodal transportation solutions that provide more equitable access to on-reserve communities. This includes a review with the Tsawwassen First Nation to identify actions for ongoing improvement of the effectiveness of transit service as well as multimodal access.

TransLink understands that it will take long-term sustained commitment and ongoing actions to gain the trust and confidence of Indigenous communities. TransLink extends gratitude to the Indigenous Nations and Indigenous Peoples in our region for the opportunity to build a better future, together.



The Burrard Chinook SeaBus, launched in 2021, is wrapped in art designed by local Indigenous artists

Table of Contents

Executive Summary

16

Part A: Transport 2050 Scope and Linkages to Other Plans

32



| | |
|---|------------|
| GOAL FIVE Carbon-Free Choices for Everyone | 186 |
| 5.1 Reduce the energy requirements of the transport system | 190 |
| 5.2 Transition to zero-emissions vehicles | 192 |
| 5.3 Support ready access to low-carbon fuels for the transportation system | 194 |
| 5.4 Account for and reduce upstream and downstream emissions in the transportation system | 197 |

Part B: Regional Context, Challenges, and Opportunities

44

Part C: The Future We Want

72

Part D: The Tools in Our Toolkit

78

Part E: Strategies & Actions

84



| | |
|--|-----------|
| GOAL ONE Convenient Choices for Everyone | 88 |
| 1.1 Make active transportation the most convenient choice for shorter trips | 93 |
| 1.2 Make transit the most convenient choice for longer trips | 104 |
| 1.3 Make it convenient for all households to make the occasional car trip without needing to own a car | 118 |
| 1.4 Seamlessly connect different transport services both physically and digitally | 120 |



| | |
|--|------------|
| GOAL TWO Reliable Choices for Everyone | 124 |
| 2.1 Make transit more reliable | 127 |
| 2.2 Make goods movement more reliable | 130 |
| 2.3 Make driving and parking more reliable | 136 |
| 2.4 Maintain transportation infrastructure in a state of good repair | 145 |



| | |
|--|------------|
| GOAL THREE Affordable Choices for Everyone | 146 |
| 3.1 Make living close to frequent transit more affordable | 151 |
| 3.2 As a priority, invest in transportation modes that are lowest cost and most affordable for residents | 155 |
| 3.3 Ensure that transportation fees and taxes are affordable for everyone | 156 |
| 3.4 Help people and businesses connect to more economic opportunities | 157 |



| | |
|--|------------|
| GOAL FOUR Safe & Comfortable Choices for Everyone | 160 |
| 4.1 Eliminate traffic fatalities and serious injuries | 163 |
| 4.2 Ensure everyone feels welcome, comfortable, and physically secure while getting around | 175 |
| 4.3 Minimize transportation’s adverse impacts on local communities | 179 |
| 4.4 Safely respond to and recover from disruptions and disasters | 183 |

Part F: Implementation Approach

200

| | |
|--|------------|
| HOW WE WILL PLAN AND MAKE DECISIONS | 203 |
| 6.1 Act with urgency | 203 |
| 6.2 Prepare for uncertainty | 203 |
| 6.3 Be inclusive | 204 |
| 6.4 Make evidence-based decisions | 206 |
| 6.5 Ensure transparency | 207 |
| 6.6 Collaborate with organizations, agencies, and partners | 208 |
| 6.7 Channel private sector innovation towards achieving public benefits | 208 |
| 6.8 Balance multiple demands for limited space | 210 |
| HOW WE WILL FUND | 212 |
| 7.1 Align funding with regional values | 212 |
| HOW WE WILL ORGANIZE OURSELVES | 213 |
| 8.1 Collaboration with Indigenous Nations | 213 |
| 8.2 Build inclusive workplaces and organizations | 214 |
| 8.3 Align governance frameworks with the needs of tomorrow’s transportation system | 215 |

Part G: Roles and Responsibilities: What Commitments Are Required — By Whom?

218

Part H: Performance Monitoring and Evaluation Framework

228

Part I: Engaging the Region

242

Part J: Glossary of Terms

256

Part K: Thematic Index

274

Part L: Reference Resources

296

List of Maps

| | | |
|--------|---|-----|
| Map 1 | South Coast British Columbia Region | 36 |
| Map 2 | Metro Vancouver Region | 37 |
| Map 3 | Existing and Future Projected Population & Employment Density, Indicating Areas Where Travel Demand is Expected to Grow | 57 |
| Map 4 | Congestion in Metro Vancouver | 59 |
| Map 5 | High Collision Locations on Roads in Metro Vancouver | 59 |
| Map 6 | Neighbourhoods within 1 km of a Retail Cluster | 95 |
| Map 7 | Regional Cycling Network | 100 |
| Map 8 | Areas That Should Be within a Short Walk to Frequent Transit in 2050 | 106 |
| Map 9 | Frequent Transit Network Today | 109 |
| Map 10 | Reliable & Fast Transit Network (Today and 2050 Concept) | 112 |
| Map 11 | Major Transit Growth Corridors from Metro 2050 | 115 |
| Map 12 | Interregional Transit Connections (2050 Concept) | 117 |
| Map 13 | Key “Access to Nature” Destinations | 123 |
| Map 14 | Top 20 Bus Corridors Contributing to Passenger Delay | 129 |
| Map 15 | Industrial Lands from Metro 2050 and Truck Routes, including Long Combination Vehicle Network | 132 |
| Map 16 | Gateway Trade Facilities and Corridors | 133 |
| Map 17 | Existing Regional Roads And Highways Showing Significant Committed Investment Priorities | 140 |
| Map 18 | Posted Speed Limits in Metro Vancouver Today | 166 |

List of Figures

| | | |
|-----------|---|-----|
| Figure 1 | Income Spent on Housing and Transportation as a Proportion of Total Household Income (Median) | 53 |
| Figure 2 | Regional Greenhouse Gas Emissions by Source Sector | 55 |
| Figure 3 | Forecasted Passenger Light-Duty Vehicle Stock in Metro Vancouver | 61 |
| Figure 4 | Typology of Active Transportation Modes | 91 |
| Figure 5 | Status of Sidewalk Availability Today on Streets within Different Areas of Metro Vancouver | 96 |
| Figure 6 | Rapid Bikeway Network Expansion | 99 |
| Figure 7 | Key Characteristics of Different Transit Layers | 102 |
| Figure 8 | Number of Vehicles Required to Serve Any Trip within Different-Sized Cities, with a Maximum 10-Minute Wait Time | 110 |
| Figure 9 | Residents and Jobs within Walking Distance from Different Transit Networks | 111 |
| Figure 10 | Risk of Death for a Person on Foot as a Function of Vehicle Impact Speed | 163 |
| Figure 11 | Energy Efficiency by Mode of Transportation | 190 |

EXECUTIVE SUMMARY



The 2050 We want: Access for Everyone

Imagine a future where getting around Metro Vancouver is easy

Where we all have convenient transportation choices that are reliable, affordable, safe, and comfortable. And where everyone has access to transportation options that don't contribute to climate change.

Imagine a future of *Access for Everyone*, where every person in Metro Vancouver — no matter who they are, where they live, or how they choose to get around — can easily connect to the opportunities they need to thrive.

Because our lives, the future of our region, and its economy depend on a sustainable, effective, and efficient transportation system that works for everyone.

To realize the vision of *Access for Everyone*, we need to understand that every single person in Metro Vancouver is unique. And that they can face different struggles and barriers that make moving and living in the region more challenging or less challenging.

The transportation future we want is one where no one gets left behind.

To create this fairer and more just and inclusive transportation system that truly delivers on the promise of *Access for Everyone*, we need to take steps to help lessen the struggles and reduce the barriers that people face. In the past, transportation justice has not been central to our regional mission and so, as a region, we have catching up to do.

Transport 2050: our roadmap for the next 30 years

Transport 2050 is the new Regional Transportation Strategy for Metro Vancouver. Whether you walk, bike, roll, take transit, or drive, Transport 2050 will shape how you get around. The strategy also lays out a path for goods movement. So that we can keep building a sustainable economy in a growing region.

Designed to be flexible in an era of rapid change, Transport 2050 is our roadmap for the next 30 years. It identifies projects, services, and policies to make transportation better for everyone.

Transport 2050 was developed in collaboration with residents, municipalities, Metro Vancouver, the Province of British Columbia, and stakeholders, and through engagement with Indigenous Nations and Indigenous groups. As a shared strategy, it reflects a common vision for the future of transportation in Metro Vancouver. This includes connections beyond the region that are critical to the social and economic well-being of the province.

We are a region that shapes our own future

This is a crucial moment: the choices we make today will influence how we move and live for decades to come. But we also need to remain nimble, so that we can be resilient to whatever the future might bring. From disruptive new technologies to pandemics to extreme natural events, external forces and events have the potential to upend life, especially in our increasingly globally connected region and economy. It's our responsibility to ensure that the future transportation system thrives in a world of shocks and disruptions.

Vision

In 2050, everyone can easily connect to the people, places, and opportunities that they need to thrive — because we all have real choices, that we can count on, that we can afford, and that we can safely enjoy for generations to come. Our transportation system supports an inclusive, future-ready region that has meaningfully advanced reconciliation.

GOALS: OUR TRANSPORTATION FUTURE WILL BE



Convenient



Reliable



Affordable



Safe & Comfortable



Carbon-Free

A SHARED STRATEGY AND REGIONAL PARTNERSHIP



Leveraging technology — for the benefit of everyone

Technology can help transform the region for the better. But only if we make it so. We only need to look to history to know that major unforeseen disruptions, such as in the form of new technologies, can come suddenly, bringing major benefits and consequences.

We’re living in an era of rapid change and disruption, and we are on the cusp of some dramatic revolutions in technology.



Digital access is changing how we connect to opportunity.



Shared mobility can reduce the total number of vehicles on the road.



Urban aerial mobility could see people and goods go airborne.



The transformation to **electric vehicles** is underway.



By 2050, **connected and automated vehicles** could be carrying a majority of passenger and freight trips in the region.

These technologies all hold out promise to make it easier to connect to opportunity, reduce carbon pollution, or bypass congestion. They are also redefining how goods are moved and delivered.

However, these transport revolutions bring with them risks and unanticipated consequences that need to be managed carefully, so that they work in support of our vision: reducing social inequity; addressing the climate emergency; and supporting vibrant, compact, and livable people-oriented cities and streets.

This means asking how new technologies can support — and not replace — the most sustainable modes of walking, biking, rolling, and transit.

The region has work to do: challenges and opportunities

Like all places, the region faces challenges that affect our quality of life, our economy, and our environment.

Not the least of which includes recovering from **COVID-19**. The pandemic has touched all of our lives, impacting our physical, mental, and social well-being, harming our economy, and accentuating social inequalities. While Transport 2050 is a long-range strategy, the pandemic does inform our present reality and has accelerated some transportation trends we’ll need to consider so we can build back better.



Reconciliation

Metro Vancouver sits on **traditional and unceded Indigenous territory**. Throughout our history, colonialism and racism have brought vast harms to Indigenous communities and peoples who have lived here since time immemorial. As the region evolves, we need to address how transportation planning has upheld this system of colonial power so that we can work towards reconciliation.



Social Equity

The gap between the haves — those with options for safe travel, affordable living, discrimination-free mobility, and access to the places they need to go — and the have-nots continues to be a problem. If anything, recent events in the COVID-19 pandemic have shone a light on **social inequity**. By improving transportation, we can help people thrive, no matter who they are.



Affordability

Metro Vancouver is an **unaffordable** region, with its expensive housing and lower incomes relative to comparable jurisdictions. Good transportation connections often increase housing prices, as they make the location more desirable. As expensive housing forces families to pursue more affordable homes in poorly connected or outlying parts of the region, they often have fewer transportation options — often requiring them to rely on cars for their daily needs. As we continue to invest in good transportation facilities and connections, communities can see displacement or gentrification, which can hurt the most vulnerable.



Congestion

Traffic congestion affects nearly everyone in Metro Vancouver, whether they travel by car, bus, bike, or on foot. The result is frustration, time lost to traffic, and more air pollution and greenhouse gases. Congestion also leads to extra costs for goods movers, which erodes our economic competitiveness, and ends up on our grocery bill. To date, no region in the world, including ours, has built its way out of congestion, not even by providing more transit service. Tackling congestion will mean making tough choices.








Climate Change

The global and local challenge of responding to the **climate emergency**, of which transportation is a prime contributor, calls for us to act urgently, at every level of government. Regional greenhouse gas emissions have basically remained stuck at the same level for a decade. Every year we fail to dramatically reduce them requires that we do even heavier lifting in future years, at higher costs, to reach the region’s goal of carbon neutrality by 2050.

How we'll act: creating the transportation future we want

To help create the future we want, Transport 2050 sets out five goals and headline targets, and maps out the key strategies that are needed to get us there.

| Theme | Access for Everyone | | | | |
|------------------|--|--|---|---|--|
| | We all have real choices | that we can count on, | that we can afford, | that we can safely enjoy, | now and into the future. |
| Goals | 1/Convenient Choices for Everyone | 2/Reliable Choices for Everyone | 3/Affordable Choices for Everyone | 4/Safe & Comfortable Choices for Everyone | 5/Carbon-Free Choices for Everyone |
| |  |  |  |  |  |
| Headline Targets | By 2050, active transportation and transit are competitive choices accounting for at least half of all passenger trips, with taxi, ride-hail, and carshare accounting for most of the remaining passenger trips. | By 2050, people and goods are spending 20% less time stuck in congestion, compared to today. | By 2050, none of us — but especially those of us with less ability to pay — need to spend more than 45% of our household incomes on transport and housing combined. | We steadily reduce serious traffic injuries and fatalities by at least 5% annually until we reach zero before 2050. | By 2030, we have lowered greenhouse gas emissions from light-duty vehicles by 65% over 2010 levels; we have eliminated transportation greenhouse gas emissions altogether by 2050. |
| | 1.1 Make active transport the most convenient choice for most shorter trips | 2.1 Make transit more reliable | 3.1 Make living close to frequent transit more affordable | 4.1 Eliminate traffic fatalities and serious injuries | 5.1 Reduce the energy requirements of the transport system |
| Strategies | 1.2 Make transit the most convenient choice for longer trips | 2.2 Make goods movement more reliable | 3.2 As a priority, invest in transportation modes that are lowest cost and most affordable to residents | 4.2 Ensure everyone feels welcome, comfortable, and physically secure while getting around | 5.2 Transition to zero-emissions vehicles |
| | 1.3 Make it convenient for all households to make the occasional car trip without needing to own a car | 2.3 Make driving and parking more reliable | 3.3 Ensure that transportation fees and taxes are affordable for everyone | 4.3 Minimize transportation's adverse impacts on local communities | 5.3 Support ready access to low-carbon fuels for the transportation system |
| | 1.4 Seamlessly connect different transport services both physically and digitally | 2.4 Maintain transportation infrastructure in a state of good repair | 3.4 Help people and businesses connect to more economic opportunities | 4.4 Safely respond to and recover from disruptions and disasters | 5.4 Account for and reduce upstream and downstream emissions in the transportation system |
| Strategic Lenses | Reconciliation | | | | |
| | Social Equity | | | | |
| | Resilience | | | | |



Transformative Actions

The strategies and actions outlined in Transport 2050 will be undertaken in partnership between local governments, TransLink, Metro Vancouver, the provincial and federal governments, Indigenous Nations, and other actors, including the private sector.

Most of the **100+ actions** proposed in Transport 2050 have the potential to fundamentally *change how people move and live* in Metro Vancouver. We think the following **10 actions** will be *especially transformative*.



1

Supporting walkable, complete, and affordable communities where it's easy to access most of your daily needs within a kilometre of home and without having to drive.



5

Serving more people in more parts of the region with **fast and reliable transit service** by adding approximately 300 kilometres to our existing 100-kilometre rapid transit network and working with partners to implement new express and interregional transit connections.



2

Transforming roads that have been designed primarily for cars into **people-first streets** designed for everyone. Where all people using the street, including people with disabilities and people using transit, cycling, walking, or rolling, feel safe, comfortable, and connected.



4

Delivering **frequent local transit service** to within a five-minute walk of nearly all communities within the urban parts of the region.

Implementing complete networks of **traffic-protected bikeways** within every Urban Centre, an **850-kilometre traffic-protected network of major bikeways** connecting every Urban Centre, and abundant bicycle parking everywhere.

3





6

Prioritizing the movement of transit on roads through more extensive provision of dedicated transit lanes, enabling transit users to get around without getting stuck in traffic. This will also allow us to achieve our bold vision for expanding the rapid transit network primarily in dedicated lanes at street level.



10

Ensuring that everyone can afford to get around, with a commitment to **universal basic mobility**, where fares and fees are based on an individual's ability to pay.



7

Expanding **shared mobility** options across the region so that, no matter who you are, where you are, or where you need to go, you'll have access to a shared bike, e-scooter, or car when you want one.



Using the power of new **digital tools** to support an efficient, reliable, and easy-to-use transportation system — where everything is seamlessly integrated, everyone can easily plan and make trips that involve multiple modes, curbside spaces are available when you need them, and traffic headaches are a thing of the past.

9



8

Changing our vehicles and how we fuel them: we'll support and carefully manage the move to **automated, connected electric vehicles** so that they work in support of our region's goals.

How the Actions Complement Each Other

These actions all complement each other and are mutually reinforcing.

For example, walkable, complete, and affordable communities (1) result in more short trips that suit walking, biking, or rolling. Community growth focused around major transit corridors delivers the density required to support even more frequent, fast, and reliable transit service (4, 5).

With more affordable (10) and more time-competitive active and shared travel options (7) and more opportunities to connect online (9), we'll see less driving and less parking demand, freeing up more room on our streets for public spaces, walkways, bikeways (2, 3), and dedicated transit lanes (6).

As connected and automated carshare vehicles scale up and become a more attractive option than owning your own car (8), we will see even less demand for on-street parking, freeing up more space for other uses.

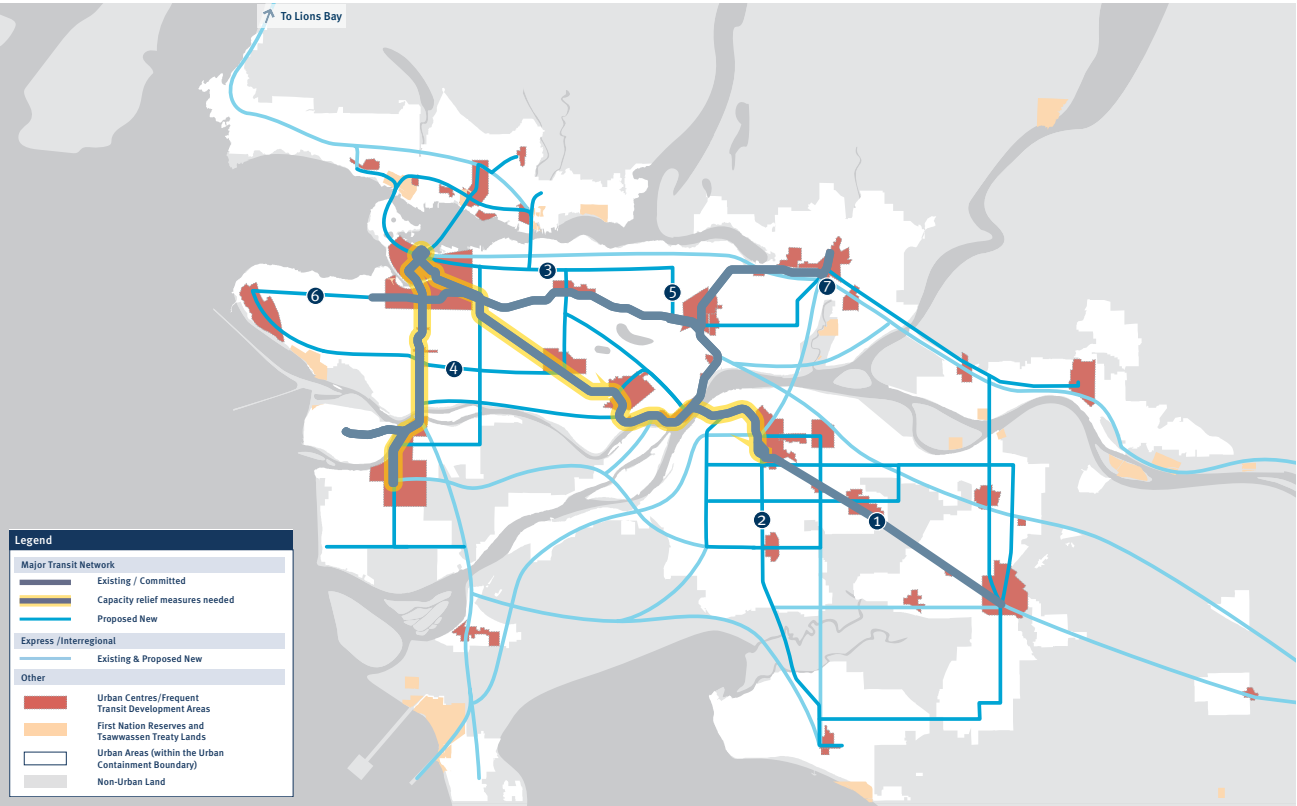
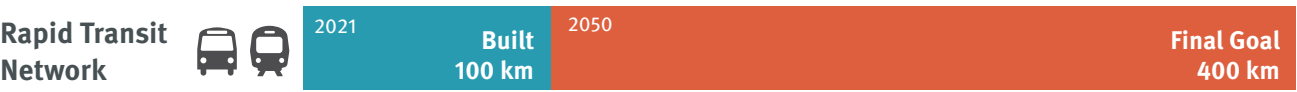
These positive feedback loops will be critical to helping us reach our ambitious targets and transform our region.

Expanding Key Networks

Reliable & Fast Transit Network

Transport 2050 includes a bold vision to build out an extensive network of transit that is both fast (competitive with cars) and reliable, travelling in dedicated lanes, free from congestion.

This Reliable & Fast Transit Network would include: a Major Transit Network with 100 kilometres of existing and committed SkyTrain lines; a 300-kilometre expansion of rapid transit, delivered mostly at street level in the form of bus-rapid transit; and long-distance express services, including connections outside of Metro Vancouver. Technologies used for future expansions will be determined through future corridor studies.



Map reflects Metro 2050 geographies as of 2021. Additional FTDA's may be designated over time

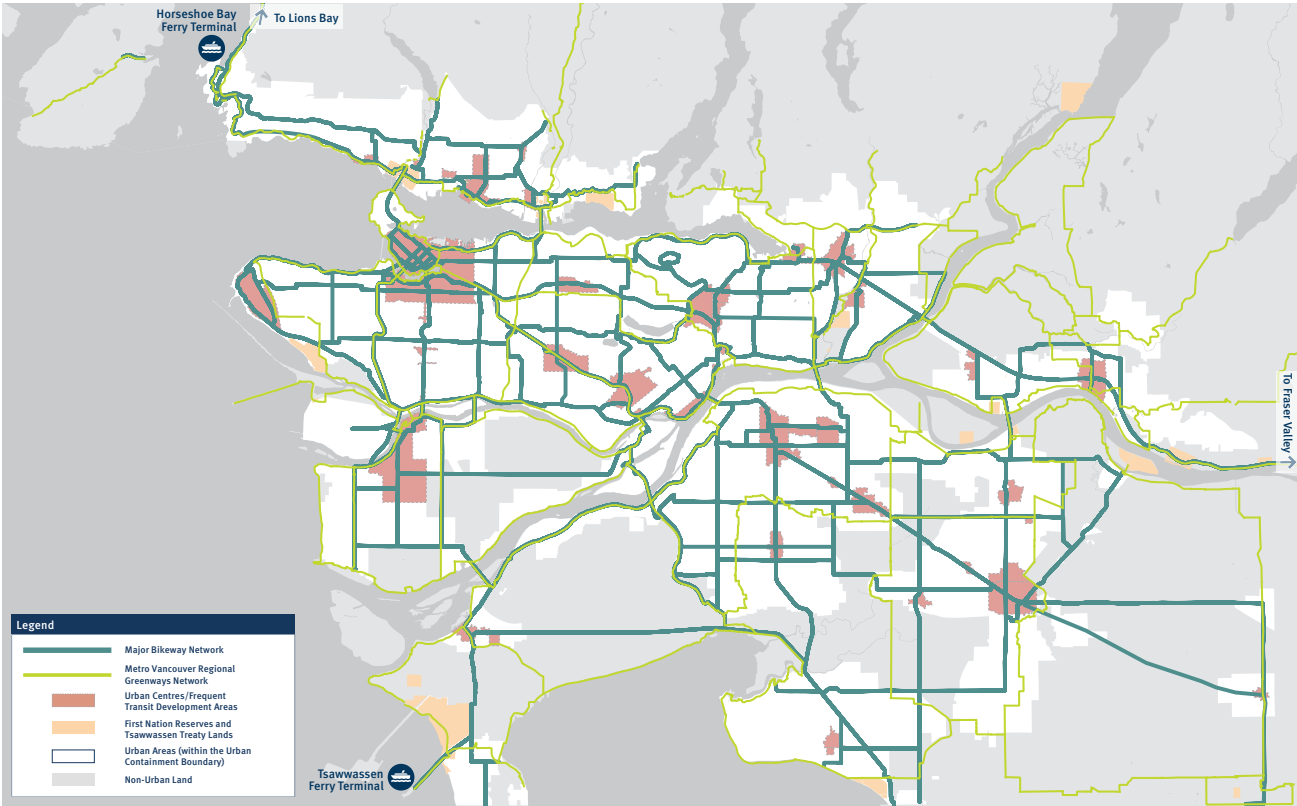
¹Surrey Langley SkyTrain is a confirmed project and highest regional priority. Remaining regional priorities expected to be delivered at grade and within dedicated rights-of-way, with the exception of (2) King George, (3) Willingdon/ Hastings/2nd Narrows, and (4) 41/49 Ave, which may require grade separation. Technology and level of separation to be determined through further studies.

⁵Burnaby Mountain Gondola and (6) UBC SkyTrain Extension to be delivered with grade separation.

⁷Minor extensions to this network may be required to support operational needs (e.g. new operating and maintenance depots) which may create additional opportunities to provide expanded access to transit service.

Major Bikeway Network

Transport 2050 also identifies a Major Bikeway Network of approximately 850 kilometres that builds on existing regional cycling networks and connects Urban Centres and major destinations. This network will make it safer, more comfortable, and more convenient to use active transportation, including e-bikes and e-scooters, for longer distance trips between Urban Centres as well as shorter trips within communities.





Transport 2050 takes a long-term view, but begins with actions starting today. We're excited to start on this path towards our shared transportation future.

Part A

Transport 2050 Scope and Linkages to Other Plans



A Shared Strategy for the Region

Transport 2050 is the Regional Transportation Strategy (RTS) for the Metro Vancouver region. During this time of rapid change, it will help local, regional, provincial, and federal agencies make sound transportation investment and policy decisions that align with where we collectively want to be heading over the next 30 years.

TransLink’s role

As the integrated, multimodal transportation authority for Metro Vancouver, TransLink is mandated to plan, manage, and provide a regional transportation system that moves people and goods. TransLink is also responsible for co-managing the Major Road Network and providing transit service to the Metro Vancouver region, which is shown in Map 2.

The *South Coast British Columbia Transportation Authority Act* requires TransLink to prepare a long-term strategy every five years. The Regional Transportation Strategy must set out the goals, directions, and key initiatives for the entire regional transportation system. It must consider regional land use objectives, provincial transportation and economic objectives, and provincial and regional environmental and emissions reduction objectives.

TransLink led the development of Transport 2050 in collaboration with local, regional, provincial, and federal government partners; Indigenous Nations and Indigenous organizations; and a wide range of stakeholders and residents across Metro Vancouver. But this strategy isn’t for TransLink alone.

Transport 2050 recognizes that no single entity can get us to the transportation future we want. It will require a range of actions from many public and private actors to shape the future of how we move and live. Only through collaboration, co-ordination, and co-operation between all partners can we realize our shared vision.

- **Indigenous Nations** who are non-treaty Indigenous Nations are governed by the *Indian Act*. The *Indian Act*, which governs all aspects of Indigenous lives, is widely recognized as racist and paternalistic. Indigenous Nations are working to make their own decisions and to have the ability to govern themselves. The Tsawwassen First Nation Final Agreement is a tripartite agreement between Canada, British Columbia, and the Tsawwassen First Nation. It is a comprehensive agreement that provides for the transfer of land and self-government jurisdiction to Tsawwassen First Nation (TFN).¹
- The **Government of Canada** oversees ports, intercity rail, and airports, and regulates freight and passenger airlines. It also sets automobile standards, such as for safety and fuel efficiency, and is an important contributor to regional transportation investments.

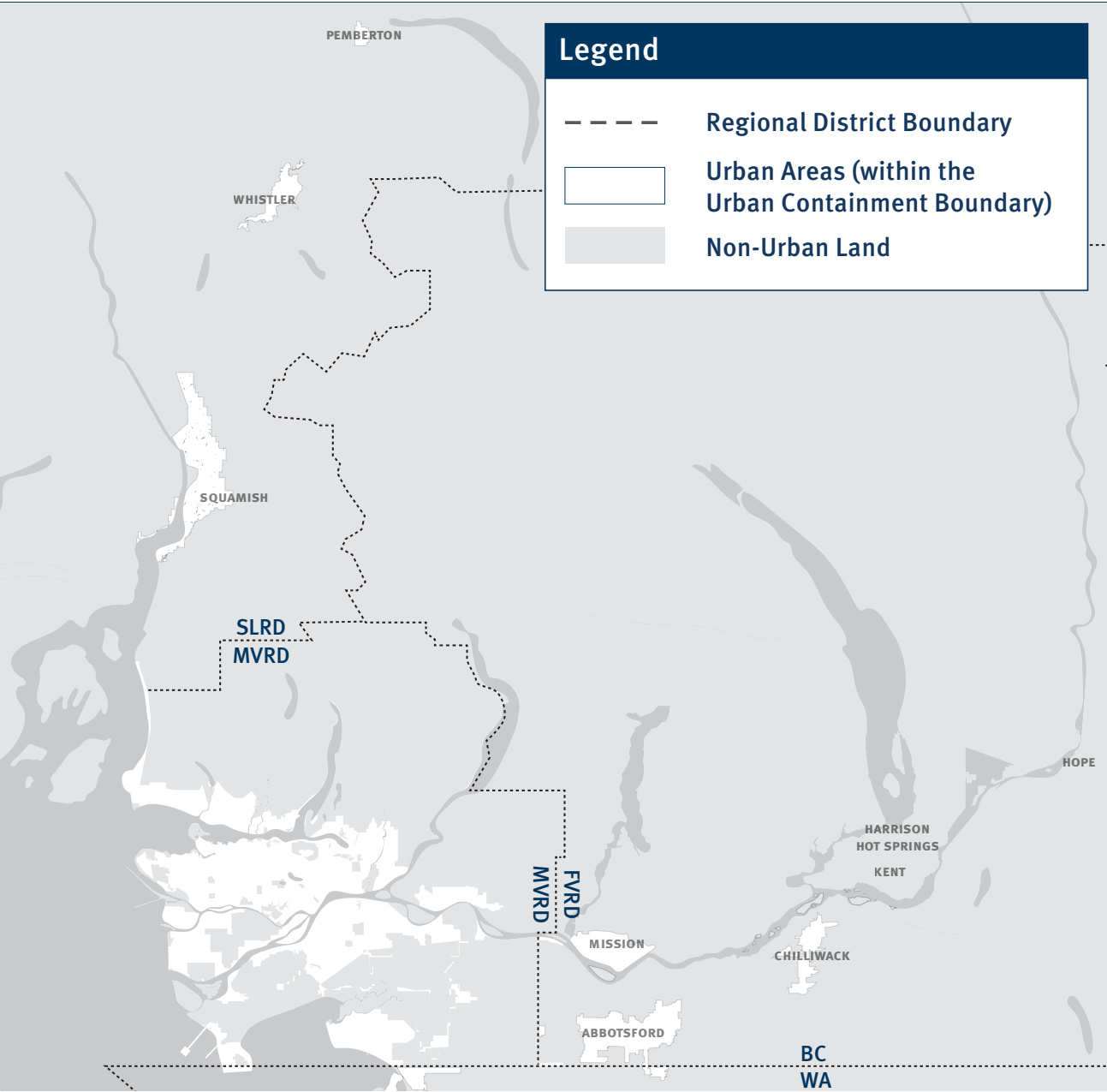
- The **Government of BC** governs private vehicle operation (including through the *Motor Vehicle Act*) and new, light-duty vehicles that can be sold (through the *Zero-Emission Vehicles Act*), highways, and some major cycling routes and bridges. It also regulates some forms of private transportation, such as taxis and transportation network services (TNSs). The Government of BC is also responsible for enabling TransLink, and is an important contributor to regional transportation investments.
- **Metro Vancouver**, the regional district, collaboratively plans for and delivers regional-scale services, including water, sewers, waste, affordable housing, and regional parks. It also manages regional growth and air quality in the region — including greenhouse gas (GHG) emissions.
- **Local governments** in the region are responsible for land use and development and many parts of the transportation system, including sidewalks, bikeways, local roads, bus stops, parking, and curb space.

A region, together: Climate 2050, Metro 2050, and Transport 2050

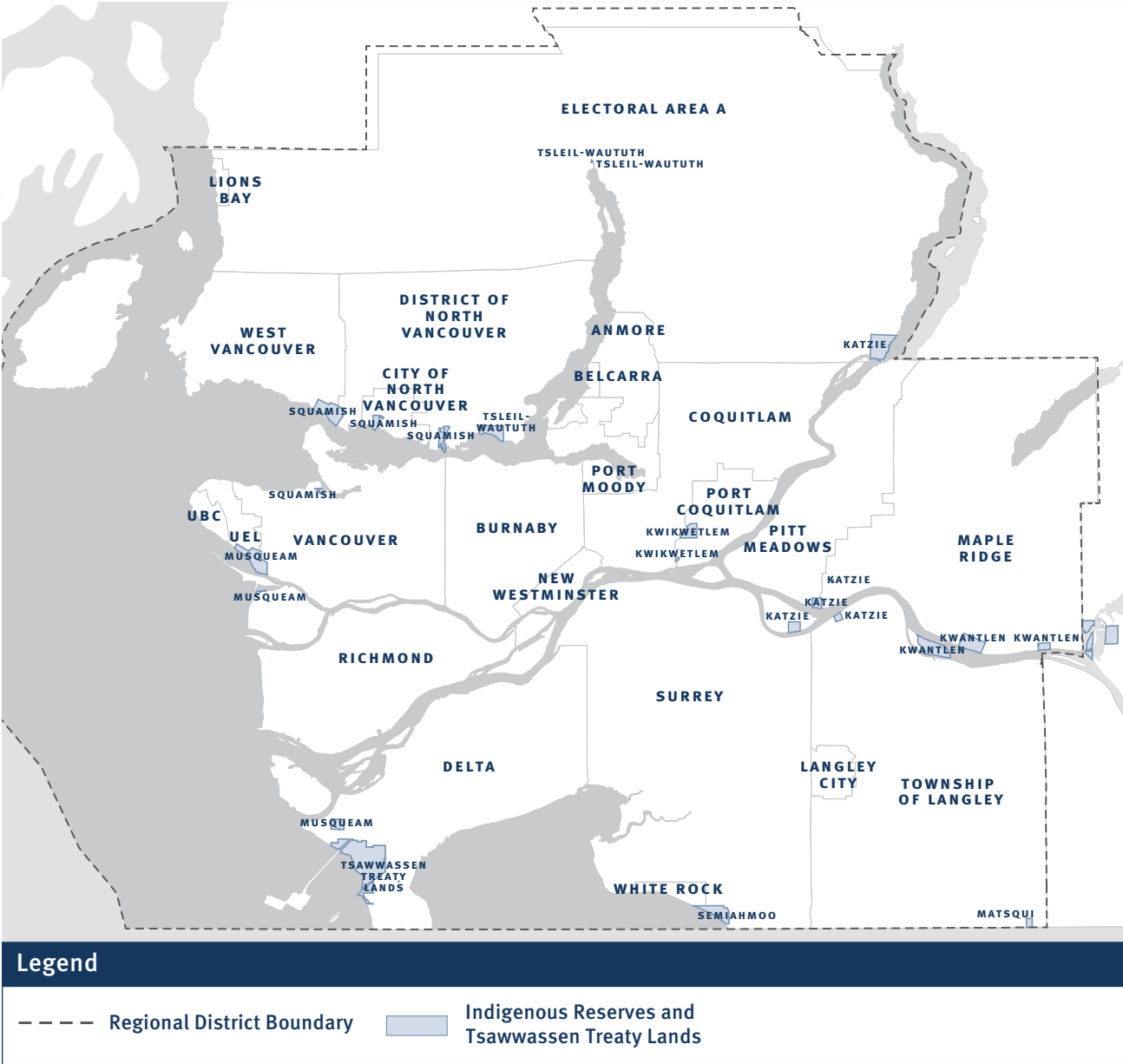
In parallel with the development of Transport 2050, Metro Vancouver has developed *Metro 2050*, the updated Regional Growth Strategy, and *Climate 2050*, which informs regional actions toward carbon neutrality. Together, these three strategies will shape the future of how we move and live. They will help co-ordinate regional action on transportation, land use, and climate.

¹ “Treaty and Constitution”, Tsawwassen First Nation, December, 20, 2021, <http://tsawwassenfirstnation.com/governance-overview/treaty-and-constitution>

Map 1: South Coast British Columbia Region



Map 2: Metro Vancouver Region



Our region is increasingly economically and socially integrated with the entire South Coast area. Engagement and co-ordination with the Government of BC, Squamish Lillooet Regional District, Fraser Valley Regional District, and neighbouring municipalities will be essential towards achieving our shared objectives.

Map of 21 municipalities, one Electoral Area, one Treaty Nation, and nine Indigenous Nations.

**Reflecting the values of the region:
how what we heard through engagement shaped Transport 2050**

We asked you to help shape Transport 2050, and you responded. Through TransLink’s largest-ever public engagement process, Transport 2050 represents the voice of the people who live, work, and play here.

Through three phases of engagement, TransLink engaged thousands of people throughout our region and neighbouring regions, including Indigenous Nations and Indigenous Peoples, community organizations, businesses, workers, students, and others.

By involving people in the development of Transport 2050, we learned what was most important to residents and how transportation could be improved. We are grateful to everyone who contributed their values, vision, and ideas for the future of transportation. To read more about the engagement process, see Part I: Engaging the Region.

By the numbers:

Through three engagement phases between 2019 and 2021



184
days of engagement



360
events (in-person or virtual)



160k+
conversations



38,000+
surveys completed



4k
ideas submitted



500+
stakeholder groups engaged



7
languages engaged in



How will Transport 2050 make a difference?

As the regional transportation roadmap for the next 30 years, Transport 2050 identifies transportation projects, services, and policies to help us reach our regional goals.

Ultimately, to reach the region’s transportation goals, all partners and stakeholders will need to do their part — especially since some actions fall outside of the transportation sector, such as in shaping land use, supporting vibrant local businesses, and providing the digital infrastructure and digital access needed to realize so many of the actions described in this document.

Working together, we will continue to improve the region’s transportation system so that it works better for everyone.

Towards the Future We Want

To reach the transportation future that residents of this region aspire to — one where we all have convenient, reliable, affordable, safe, comfortable, and carbon-free choices for all of our travel needs — we need to imagine a region that looks quite different from the one we know today. One where our streets are slower, quieter, and safer; one with many more people walking, rolling, cycling, and using transit; and one where we have leveraged new technologies that are currently only in their infancy in service of our regional goals.

We also need to ensure that the region’s transportation system is resilient, so that we can adapt to the uncertainties of an ever-changing future driven by rapid technological and economic changes, and especially by climate change.

Image courtesy of the Town of Innisfil, ON



Transport 2050: a long-term view with immediate action

While the year 2050 feels a long way off, Transport 2050 is not an abstract exercise. Rather, this document is intended to bring a long-term view to the pressing policy and investment decisions of today.

The strategies and actions in Transport 2050 have different time scales, partly depending on the pace of technological change, but also on funding availability and political will. In simple terms, there are:

- **Things we need to start implementing now**
- **Things we need to start preparing for now, with strategic planning, policy, and regulation**

Throughout Transport 2050, words such as “prioritize” and “urgently” are used to highlight where actions are especially pressing. These are meant to draw attention to the strategies and actions that require immediate implementation.

Moving forward, TransLink will use Transport 2050 as a foundation for the development of its medium-term plans: a detailed implementation blueprint and the next 10-Year Investment Plans. Investment Plans are updated at least every three years.

Every partner and every organization with a role to play in transportation in this region is invited to view this strategy as a consistent regional foundation upon which to build their own more detailed implementation plans.

Together, we can help make our common vision of *Access for Everyone* a reality.





Part B

Regional Context, Challenges,
and Opportunities





Looking Back: The Major Forces and Pivotal Decisions That Shaped Our Region

The history of this region begins with the Indigenous Peoples who, since time immemorial, have inhabited and cared for this land near the mouth of the Sto:lo River (Fraser River) and along the edge of the Salish Sea. With its confluence of waterways and abundant resources, this region has always been a place for meeting, food sustenance, and trade.

Over this region's long history, external forces, events, and technological developments have shaped and altered its trajectory. They've introduced rapid changes in the economy, society, and environment. Reshaping land use, how our communities look, people's behaviour and preferences, and how we move and live.

Examples of some of the external forces that have played a major role in shaping the region that we are today include:

Shifting trade patterns that have shaped where communities and transportation infrastructure are located, and how power and wealth are distributed.

Colonial assimilation laws and practices that were imposed by the Canadian government to control all aspects of the lives of Indigenous Peoples and to criminalize traditional practices, languages, cultural events, and gatherings. Canada created reserve lands to isolate Indigenous Peoples and to seize lands and resources for the use and benefit of others. Residential schools operated by Christian churches and the Canadian government allowed Indigenous children to be abused, neglected, and isolated from their families and, in many cases, caused their deaths. The *Indian Act* enforced in 1876 is still in existence today.

Natural events such as earthquakes and the flooding of the Fraser Valley in 1948 that resulted in the region laying the groundwork for integrated regional planning to help co-ordinate urban growth and to avoid development in flood plains.

The oil crisis of the 1970s that resulted in oil supply shortages and a fourfold increase in gasoline prices; this dramatically impacted the cost of living for many people and prompted the development of fuel economy standards for vehicles.

Economic recessions in 1981–82, 1990–92, 2008–09, and 2020 that resulted in job losses in many BC sectors and a growing wealth gap.

A global climate emergency that resulted in strong climate commitments in BC, dating back to 2007.

The Truth and Reconciliation Commission (TRC), with the release of its 2015 report with 94 Calls to Action, that resulted in the utilization of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) as the framework for reconciliation across all sectors of society, resulting in the current understanding that reconciliation is everyone's responsibility.

The COVID-19 pandemic that resulted in major shifts in transportation patterns and a dramatic uptake of remote work, e-learning, and home deliveries. For trips that still needed to be made, many people chose private vehicles or active transportation to avoid crowds of people. Transit ridership fell by around half. Essential workers, many of whom work in lower-wage jobs, have borne the brunt of the health risks.

It's up to us to leverage external forces to propel the kind of change that we collectively want to see — in order to create a transportation system that is effective, equitable, and future-ready.



Looking Ahead

This is a crucial moment in time. With generation-defining challenges, with unprecedented opportunities, and with the next major transport revolution likely just around the corner, the choices we make today and over the next decade will shape how we live and move for generations.

As we look forward, a frank understanding of where Metro Vancouver is now will set the stage for the decisions we need to make over the next few years to set us in the right direction for the long term.

We don’t know for certain what the future will look like. However, based on the lessons of

the past, we know that external forces — from major events to disruptive new technologies — can arrive quickly, with major impacts. The COVID-19 pandemic has illustrated how quickly such things can affect our lives and the systems that we all rely on. We need to prepare the transportation system for future uncertainties like this, especially since, all too often, it’s been society’s most vulnerable who have borne a disproportionate share of the costs.

By future-proofing the transportation system, we can contribute to a more resilient region, helping us weather tomorrow’s shocks and disruptions, whatever they may be.

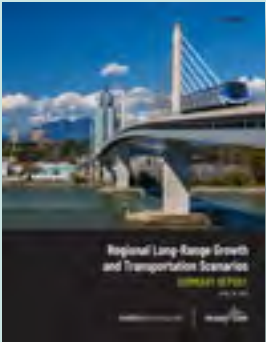
Creating a resilient transportation system and region

Resilience is the capacity of individuals, communities, organizations, and natural systems to **prepare for, avoid, absorb, recover from, and adapt to shocks and stresses** through the preservation, restoration, and adaptation of essential functions. Resilience also involves learning from shocks and stresses to build back better.


Transport 2050 aims to enhance the resilience and ability of our residents, transportation system, and region to continue to operate, recover, and maintain their core purposes in the face of change and disruption. Resilience in Transport 2050 includes:

- 1. **Robust** approaches that improve the quality of an asset, program, or operation so it can better withstand shocks and stresses
- 2. **Redundancy** in critical systems that provide alternatives if one part of a system fails
- 3. **Resourceful** approaches that can mobilize diverse resources and partnerships across sectors
- 4. **Rapid** approaches that can quickly deploy the tools and processes needed to address shocks and stresses

Early in the development of Transport 2050 and Metro 2050, TransLink and Metro Vancouver partnered to think about how the region could be impacted by various shocks, stresses, forces, and trends in the coming decades, focusing especially on the disruptions that are likely as a result of climate instability, and as a result of rapid technological and economic changes.



To learn more, see the [Regional Long-Range Growth and Transportation Scenarios report](#).

Actions that advance a more resilient transportation system in our region are shown with this icon: . For a summary of all resilience-related actions, see Part K: Thematic Index.

Recognizing the Rights of Indigenous Peoples

Challenges

Nearly all of present-day British Columbia sits on lands over which different Indigenous Nations enjoy inherent rights and title, as set out in the Constitution and confirmed by the Supreme Court of Canada.

One Indigenous Nation in the South Coast region of British Columbia — *sćəwaθən məsteyəxʷ* (Tsawwassen First Nation) — has negotiated a modern treaty and a formalized role in decision-making processes through the Mayors’ Council on Regional Transportation and the Metro Vancouver Board, per the *South Coast British Columbia Transportation Authority Act*.

We find ourselves planning, operating, and building on the unceded territory of the *qícəy* (Katzie), *qʷa:ńł’əń* (Kwantlen), *kʷikʷəłəm* (Kwikwetlem), *máthxwi* (Matsqui), *xʷməθkʷəyəm* (Musqueam), *qíqéyt* (Qayqayt), *se’mya’mé* (Semiahmoo), *Skwxwú7mesh Úxwumixw* (Squamish), *səlílílʷətaʔ* (Tsleil-Waututh), and *sćəwaθən məsteyəxʷ* (Tsawwassen) Nations.

Opportunities

By listening, understanding, and recognizing historical and current injustices; by supporting implementation of the *Declaration on the Rights of Indigenous Peoples Act*; and by establishing more collaborative relationships with Indigenous Nations, TransLink and transportation authorities can take more concrete steps towards advancing reconciliation.



Advancing Social Equity

Challenges

Many groups face barriers travelling around the region, whether caused by age, ability, race, faith, national origin, socio-economic status, sexual orientation, or gender identity.

Whether due to limited travel options, physical safety or barriers, or harassment and discrimination, moving around the region is more challenging for some people than others.

Opportunities

By taking steps to remove these barriers and by furthering our understanding of them, we can make it easier for everyone to access the opportunities they need to thrive.

Improving Affordability

Challenges

Region-wide, nearly one-third of households spend more than 70% of their before-tax income on the two major and interrelated costs of housing and transportation.

In particular, these residents are struggling under the weight of unaffordable housing and transportation costs, leaving them with difficult choices about what to spend or forgo on food, clothing, childcare, and other critical expenses.

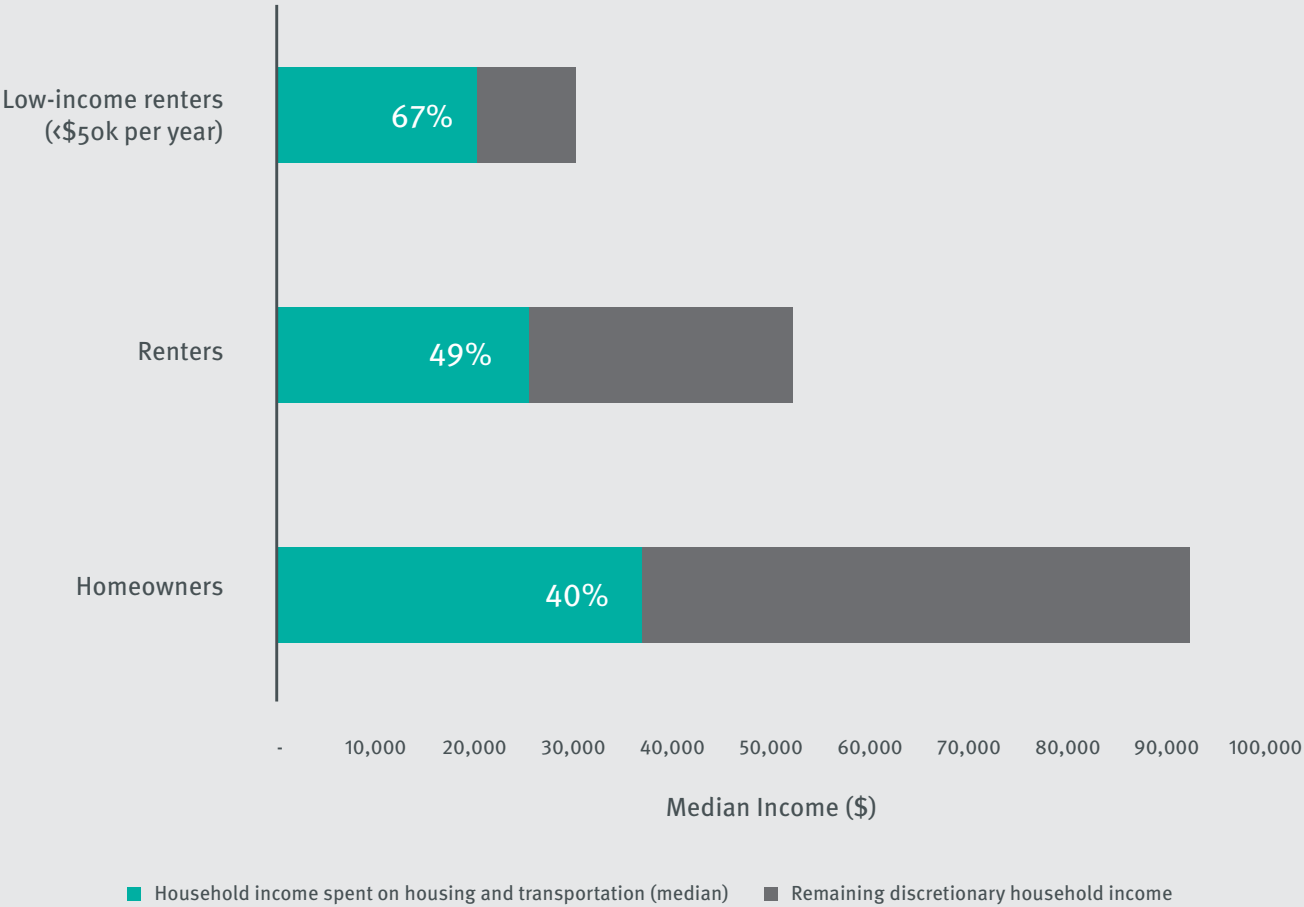
Opportunities

By working together, the Government of Canada, the Government of BC, Metro Vancouver, and the region’s municipalities can increase the supply of affordable housing that is next to frequent transit, can increase the supply of the most affordable modes, and can ensure that any transport fares or fees are linked to the ability to pay.

We can realize a more equitable region by advancing a transportation system that supports the needs of everyone



Figure 1: Income Spent on Housing and Transportation as a Proportion of Total Household Income (Median)



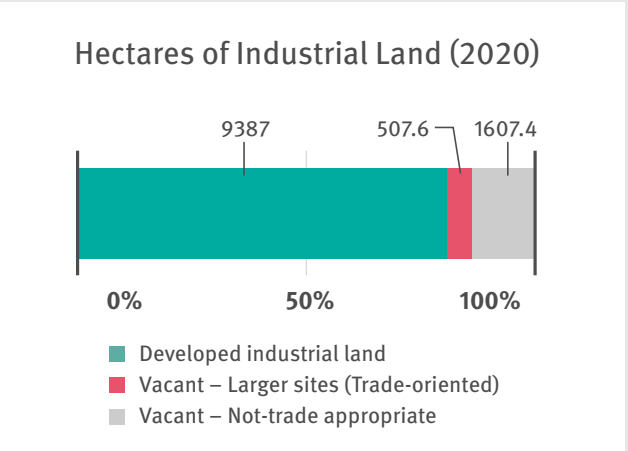
Source: Metro Vancouver, “The Metro Vancouver Housing and Transportation Cost Burden Study”, 2015, <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/HousingAndTransportCostBurdenReport2015.pdf>

Supporting Economic Prosperity

Challenges

A lack of available industrial land and our worsening congestion is making our region a less and less attractive place to do business.

The pandemic’s impact on our national, provincial, and regional economy is putting additional pressure on our region’s financial capacity to deliver needed regional transportation investments.



Reducing Greenhouse Gas Emissions and Preparing for Climate Change

Challenges

With transport being the largest single source of carbon pollution in the region, we need to act urgently and with bold moves if we are to meet our climate action targets and avoid the worst impacts of a destabilized climate.

Even if we are successful in reaching our emissions-reduction targets in this region, global greenhouse gas (GHG) emissions to date will still lead to future climate impacts. We must prepare for a future of more weather-related extreme events and climate disruptions.

Opportunities

Protecting and optimizing industrial land and applying meaningful solutions to reduce congestion can support productivity growth and business competitiveness.

Focusing on the most cost-effective transportation solutions to deliver more transportation value to the public for less money can keep taxes and fees lower.

Providing more convenient and reliable transportation connections for people and goods can help foster job growth and economic development across the region and beyond — connecting workers with access to more jobs, and connecting businesses with more markets and access to a broader labour force.

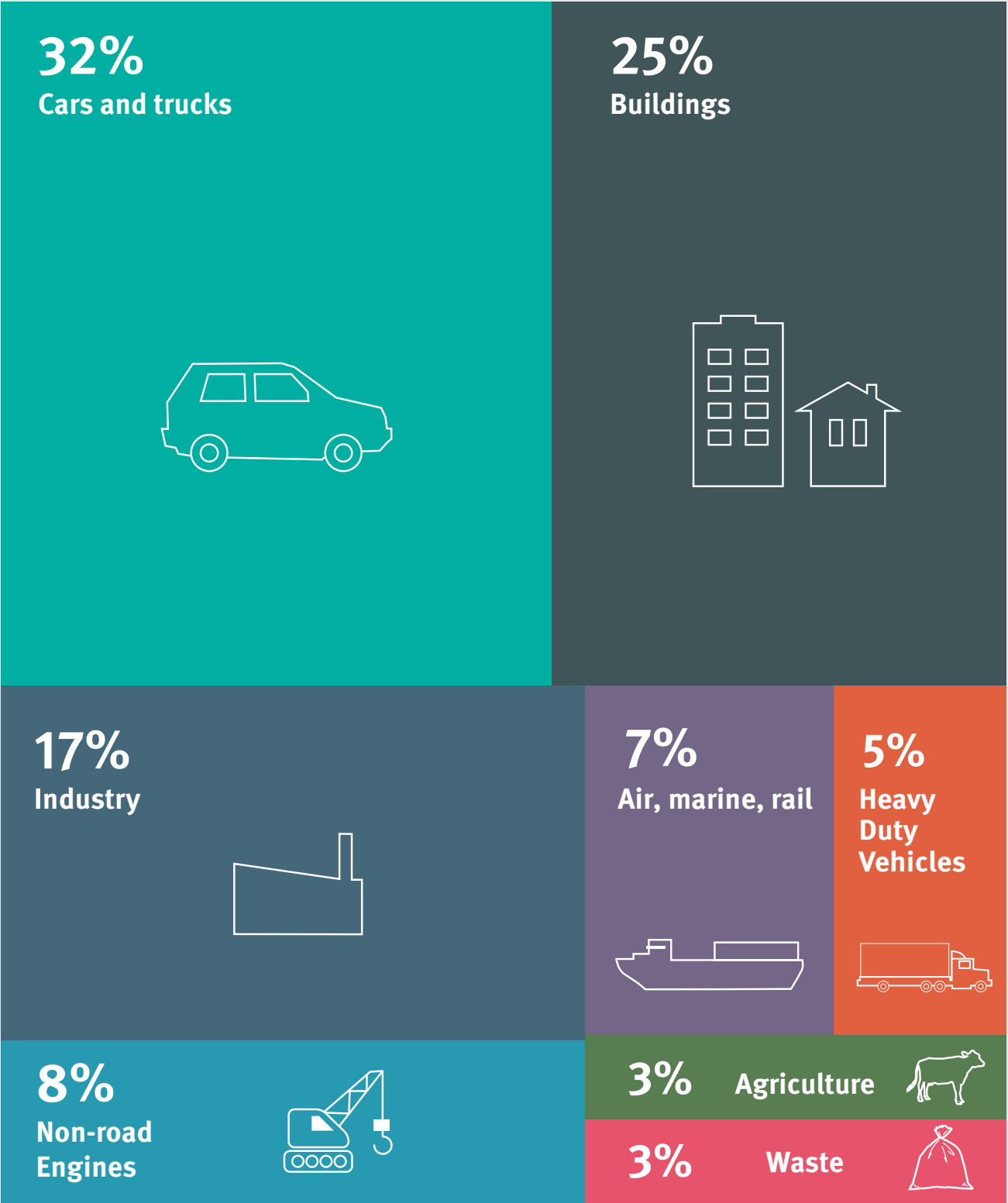
Opportunities

With a shared agenda for low-carbon mobility, local, regional, provincial, and federal governments have committed to aggressive GHG reduction targets.

Metro Vancouver’s near-100% renewable energy grid will be an asset in reducing our reliance on imported fossil fuels.

Preparing for the intensifying impacts of climate change will contribute to a more resilient transportation system.

Figure 2: Regional Greenhouse Gas Emissions by Source Sector



Source: “Emission Inventories and Forecasts”, Metro Vancouver, December 21, 2021, <http://www.metrovancouver.org/services/air-quality/about/emissions/emission-inventories/Pages/default.aspx>

Key Challenges and Opportunities for the Regional Transportation System

Accommodating Growth to Advance Livability and Sustainability

Challenges

The region is set to welcome about a million new residents by 2050; this growth will add pressure to a transportation system that's already strained.

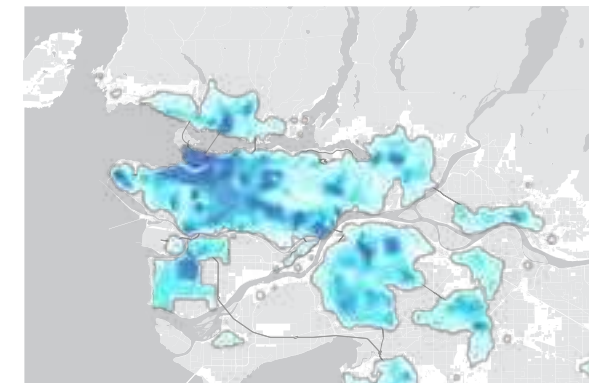
Opportunities

We have an opportunity to strengthen our region's long-standing commitment to compact, transit-oriented growth as described in Metro 2050. Directing most homes and jobs to within a short walk of major transit will help generate the ridership demand needed to support a thriving regional transit system with fast, frequent, and reliable service to most parts of the region.

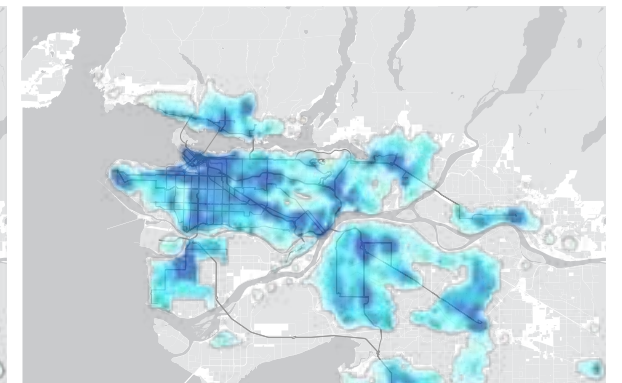


Map 3: Existing and Future Projected Population & Employment Density, Indicating Areas Where Travel Demand Is Expected to Grow

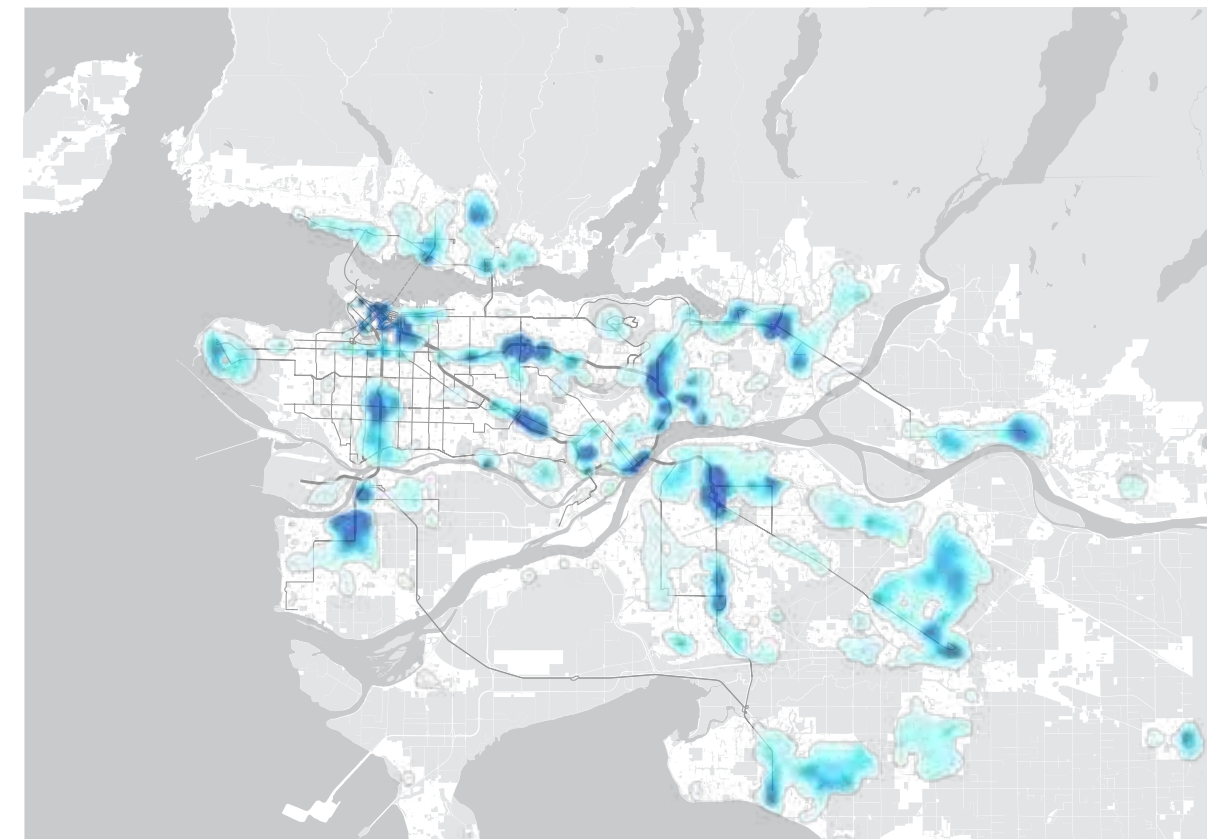
Map 3a: 2017 Population and Employment Density



Map 3b: 2050 Population and Employment Density



Map 3c: 2017-2050 Population and Employment Density Changes



Legend

| Population & Employment Densities | Other |
|-----------------------------------|---|
| persons/ha | Transit |
| 0-10 | Urban Areas (within the Urban Containment Boundary) |
| 11-20 | Non-Urban land |
| 21-40 | |
| 41-60 | |
| 61-80 | |
| 81-100 | |
| over 100 | |

Note: Population and employment maps were developed by Metro Vancouver and included in regional forecasts by Metro Vancouver and updated with most current data through the development of the 2018 Regional Growth Strategy.

Note: Population and employment maps were developed by TransLink, based on data included in regional forecasts by Metro Vancouver in May 2020. The maps can be updated with most current data through the development of the Implementation Plan.

Providing People With Access to a Diverse Selection of Transportation Options

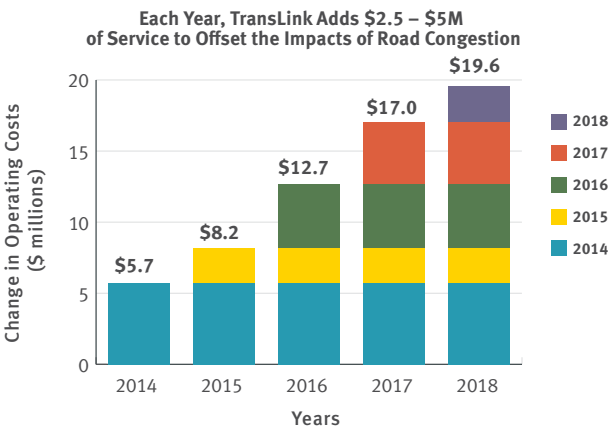
Challenges

One of the main reasons that people choose to own a personal car is they don’t have good walking, biking, rolling, transit, or shared vehicle options close to where they are — or where they need to be. Or, for many people, these choices may be available, but they don’t meet their accessibility needs, such as for people with disabilities.

Reducing Road Congestion and Improving Travel Time Reliability

Challenges

Traffic volumes strain road capacity in many parts of the region. This leads to unreliable travel times for people and goods, with some areas experiencing congestion all day.



Improving Traffic Safety

Challenges

For the past five years, an average of 100 people have died in traffic crashes on our region’s roads every year — 40 of whom per year were walking or biking when they were killed.

Opportunities

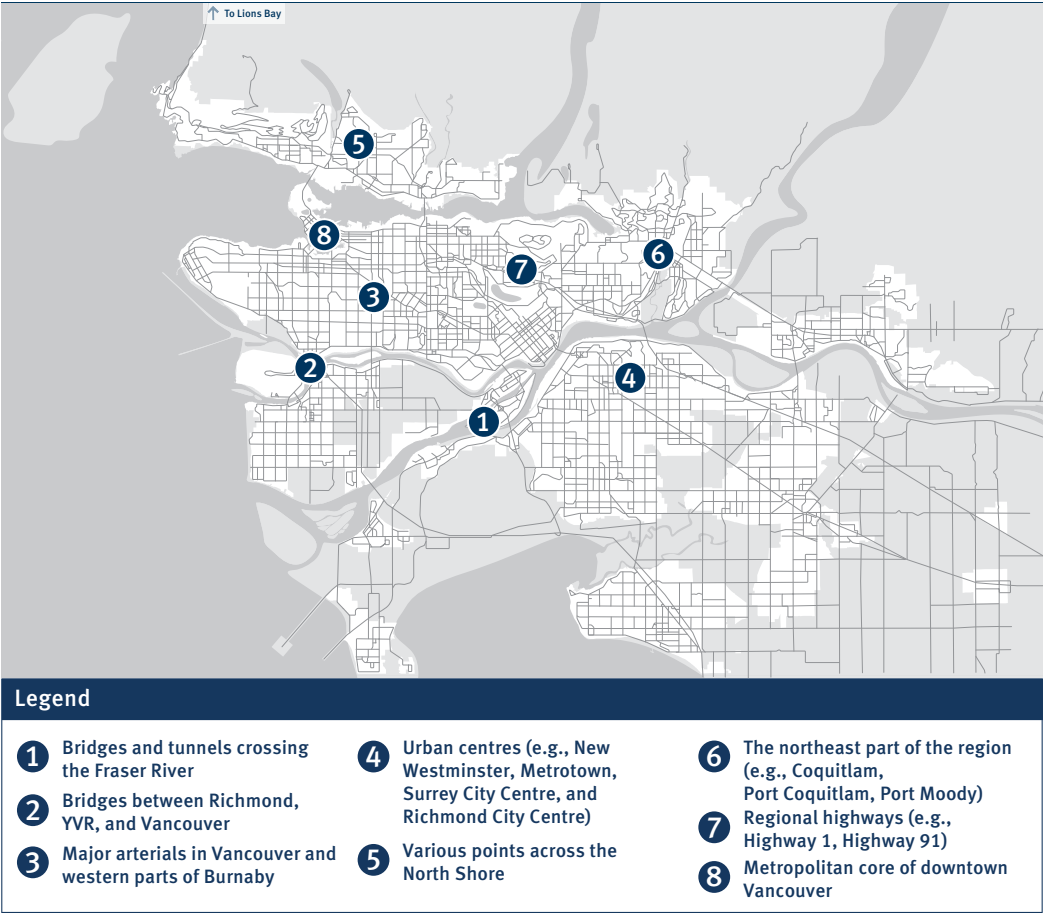
We can build on unprecedented levels of senior government funding for transit infrastructure and a pandemic-related resurgence in public interest in and support for walking, biking, or rolling.

Opportunities

By leveraging demand management tools and new technologies, and by prioritizing more road space for transit, we can deliver a regional transportation system that makes moving across the region more efficient and reliable, for every mode on the road.

Opportunities

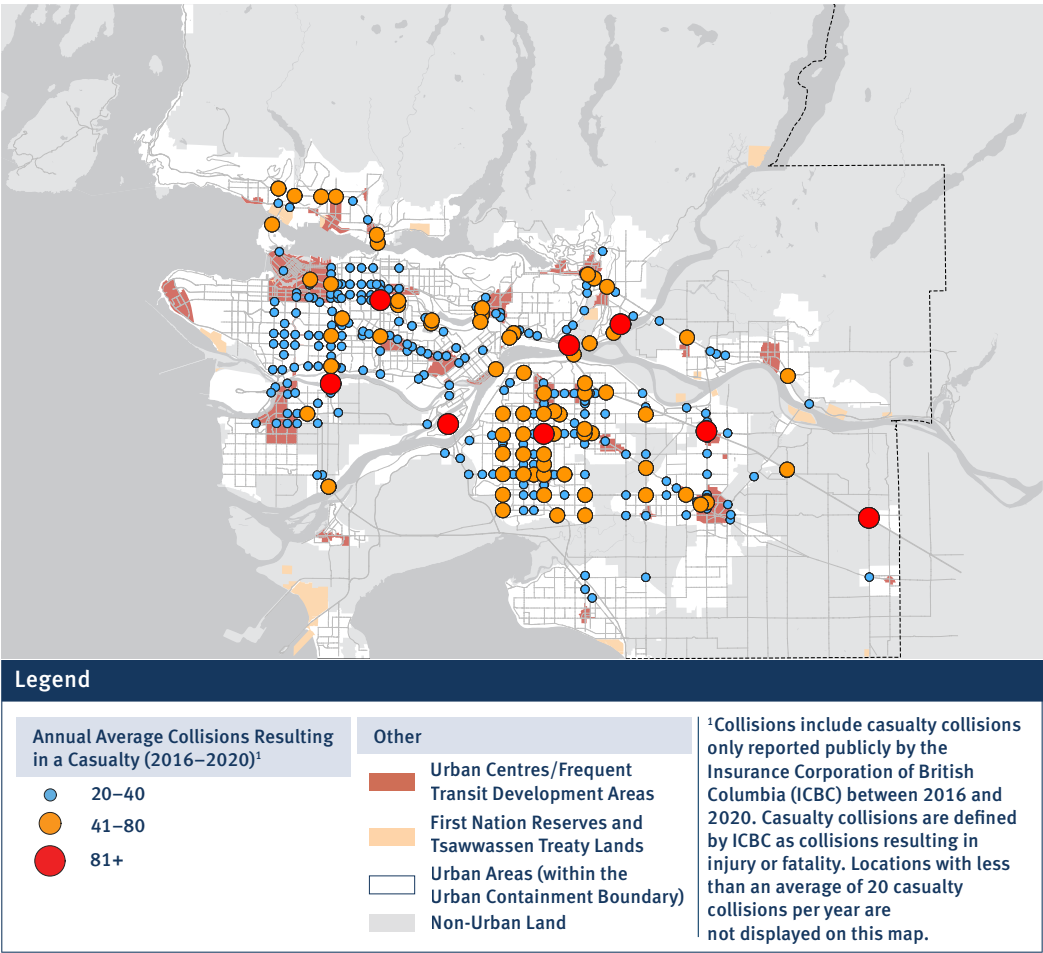
By separating different road users according to speed, by reducing overall traffic speeds, and by leveraging the potential of automated vehicles, we can make our streets safer for everyone.



Map 4: Congestion in Metro Vancouver

We experience congestion in many different ways across the region. Congestion is not confined to areas like downtown, metro cores, or urban centres. It is also not confined to commute trips at certain times of day. Congestion occurs on our bridges and tunnels, highways, and main arterial roads, as well as in our local communities. The areas to the left show how congestion can manifest itself in these different ways across different parts of the region, affecting different trip types and trip purposes as a result. More and more, we see that it also occurs outside of traditional peak times during rush hours, where it also impacts evening and weekend trips.

Map 4 Source: Mobility Pricing Independent Commission, “Moving around Metro Vancouver: Exploring new approaches to reducing congestion”, October 2012, <https://www.translink.ca/plans-and-projects/strategies-plans-and-guidelines/managing-the-transit-network#mobility-pricing>



Map 5: High Collision Locations on Roads in Metro Vancouver

Map 5 Source: “Lower Mainland Crashes (2016 to 2020)”, Insurance Corporation of British Columbia, December 21, 2021, <https://public.tableau.com/app/profile/icbc/viz/LowerMainlandCrashes/LMDashboard>

Key Challenges and Opportunities with New Transportation Technology

Transport revolutions throughout history have quickly and dramatically changed how we move — and they promise to continue to do so into the future.²

Looking back, the arrival of the streetcar in the late 1800s and the automobile in the early 1900s each had transformative impacts. Within a span of two decades, they each in turn reshaped our cities, the nature of housing and commerce, and how most people and goods moved around.

Looking ahead, the convergence of four trends — automation, connectivity, electrification, and sharing (or ACES) — promises to fundamentally reshape transportation once again.

On their own, these trends are already transforming vehicles, business models, and habits. But together, ACES could enable the next transport revolution — the automated vehicle revolution — with the potential to transform the region for the better, if it is managed well.

Throughout history, the costs and benefits of transport revolutions have not been evenly distributed, with specific groups being left out or bearing a disproportionate share of the burdens.

In future revolutions, we need to make sure that costs and benefits are fairly distributed and that no one gets left behind. History has also shown that how we respond to transport revolutions can

come with unintended consequences that are only evident years later.

For example, the automobile is a remarkable invention that has made it easy to travel farther, faster. For those who can afford a car, it has also opened access to employment, social, and recreational opportunities. However, following the widespread adoption of the car, most urban regions also saw a rapid rise in traffic congestion, air pollution, and traffic fatalities as governments at all levels prioritized automobiles through investments and urban design.

At the same time, for the most exposed road users, such as people on foot or bicycles, the automobile revolution has brought harm. These groups are more likely to be impacted by traffic collisions or by tailpipe emissions. And for those without a car who live outside urban areas, the relative gaps in access to employment, healthcare, recreation, and inclusion in society have widened.

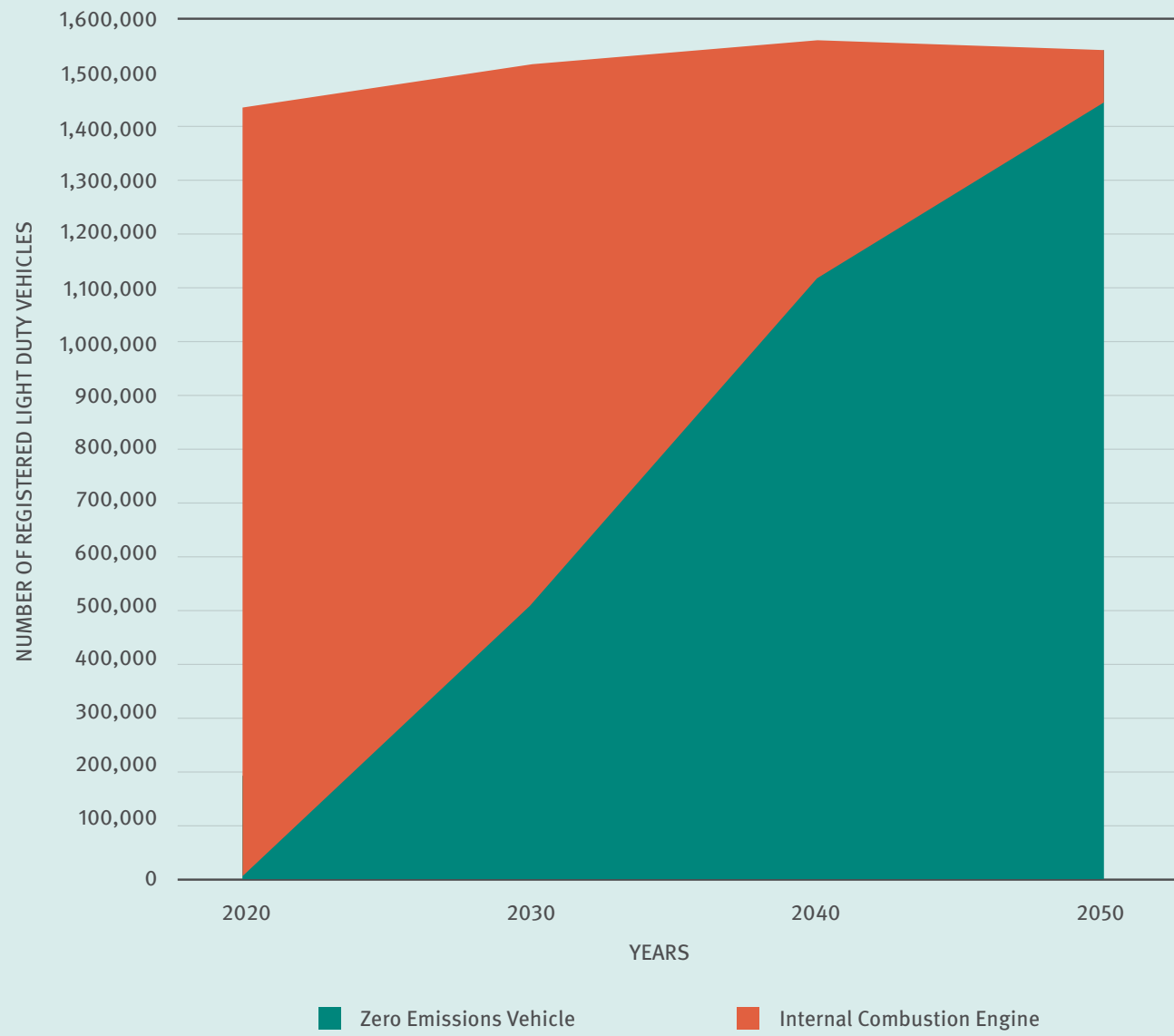
One of the key tasks of Transport 2050 is to anticipate the challenges and opportunities that are likely to arise from coming transport revolutions. In this way, we can act to leverage the benefits while reducing the risks.

It’s up to us to ensure that coming transport revolutions are managed carefully so that we can realize the vision of *Access for Everyone*.

“The future is already here — it’s just not evenly distributed.”

— William Gibson (1992)

Figure 3: Forecasted Passenger Light-Duty Vehicle Stock in Metro Vancouver



Source: Licker Geospatial Consulting Ltd., “Carbon Neutral 2050: Policy & Modelling Report”, July 2021, http://www.metrovancouver.org/services/air-quality/AirQualityPublications/LGEO_MV_CNS_ModelingReport_July2021.pdf

² In their book, Transport Revolutions: Moving People and Freight Without Oil, Anthony Perl and Richard Gilbert define a transport revolution as “a substantial change in a society’s transport activity that occurs in less than 25 years”. And they define “substantial change” as a shift in which “something that was happening before increases or decreases dramatically, say by 50 percent; or a new means of transport becomes prevalent to the extent that it becomes a part of the lives of ten percent or more of the society’s population”.

Revolutions in Transportation Technology

Humans have always been on the move. But over the past 130 years, we’ve developed new technologies that significantly increased our travel speeds and hence the distances we travel. Two key technological changes in particular — the streetcar and automobile — have, within the span of a decade, fundamentally transformed how we move and live in cities.



Human Power

People relied on human- and animal-powered transportation for most of history. This limited the distance that people typically commuted to about 2–3 kilometres, and similarly limited the size of most cities.



The Streetcar Revolution

The streetcar era, which was launched around the end of the 19th century, allowed humans to travel up to three times faster than walking. This extended commuting distances and led to the rise of streetcar suburbs on the periphery of many major urban centres.



Streetcar image courtesy of Joan Tyldesley

The Automobile Revolution

The automobile revolution enabled travel up to 10 times faster than walking for those who could afford a car. However, rather than reducing the amount of time spent travelling, people travelled longer distances. So, many regions responded by building new highways, bridges, and lower-density automobile-oriented suburbs that were far from jobs.



Traffic image courtesy of Pugstem Publications

What’s Next?

Further electrification and automation of vehicles will reduce the financial cost and time burdens of commuting, and may encourage people to travel even farther. Proactive management can help shape how these new technologies are implemented and adopted in ways that support, rather than hinder, progress towards our regional goals and targets.



What Are Automated Vehicles (AVs)?

Automated vehicles (AVs) put safety-critical controls, such as steering, throttling, or braking, outside direct driver control. Six levels of vehicle automation describe how much responsibility a computer takes on — versus a human driver. AVs are already here, as Level 2 and 3 vehicles that include advanced driver assistance systems are now commonplace in new vehicles.

Level 3 automation poses particular traffic safety risks. Automation aids can increase the risk of distraction or inattentiveness when driver attention is required at all times for a safe trip.

It’s only a matter of time until more vehicles with higher levels of automation enter the market. Fully automated driving occurs where a steering wheel and driver are no longer required in well-mapped and defined cities and regions (level 4) or in any condition (level 5). For the purposes of this Strategy, the automated vehicle “transport

revolution” begins with the arrival of Level 4 automation. While Level 5 automation may still be many years away, experts believe that Level 4 automation is likely to be commercially available within the decade and widespread by 2050.

The gradual transition of the entire fleet will also bring challenges over coming decades, as vehicles of various degrees of automation learn to share the roads with each other and other road users. This includes people walking, biking, or rolling, whose movements are less predictable to machine intelligence.

Automation has applications for all transportation (beyond personal vehicles), including ride-hailing, transit, and freight. These technologies will need to be closely monitored to ensure that potential negative impacts — such as safety impacts, increased congestion, worsening inequality, and potential job losses — are addressed fairly and proactively.

Opportunities

With most traffic crashes today occurring due to human error, automation promises to enhance safety and reduce collisions. It can also provide better mobility for people who don’t or can’t drive, such as people with disabilities, seniors, or those without driving licences.

Shared fleets of automated vehicles (AVs) could accommodate all urban trips with a small fraction of today’s vehicle fleet. And because there could be fewer cars on the road, cities could repurpose road and parking space for other uses.

Challenges

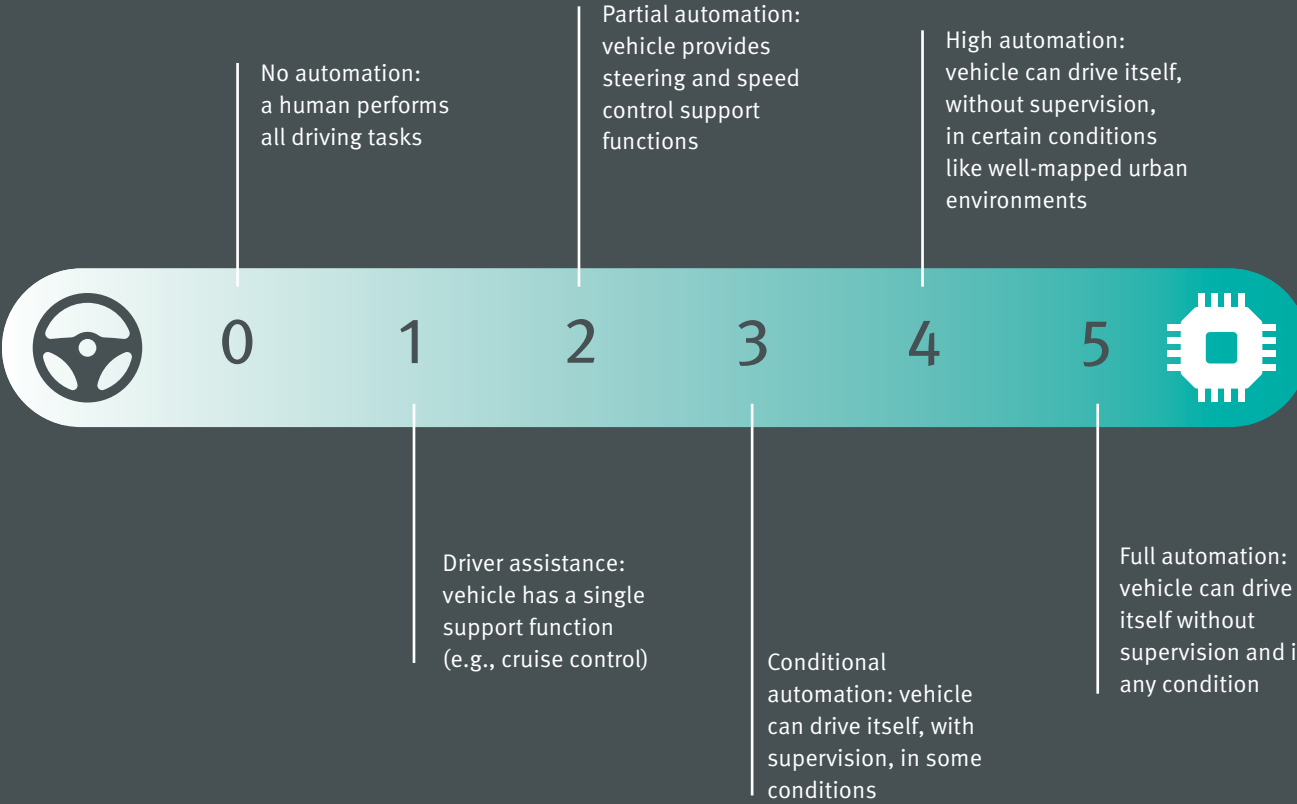
By reducing the time costs associated with driving, and by enabling zero-occupant vehicle trips, the transition to AVs could lead to significant increases in driving, resulting in congestion, greater transportation energy use, more pressure for urban sprawl, and a rise in physical inactivity.

Additionally, the transition to full automation (Level 4 or higher) creates challenges, particularly with Level 3 automation, which creates a high risk of driver distraction and complacency, resulting in risky behaviour. The transition of the entire fleet will also bring challenges over the next few decades, as vehicles of various degrees of automation share the roads with each other and other road users.

We only need to look to history to learn that transport revolutions can be sudden, rapid, and disruptive. For example, just two decades after the arrival of the Ford Model T, 60% of US households owned a car, up from a baseline of nearly zero.



Levels of Driving Automation *Adapted from the Society of Automotive Engineers, 2021*





Shared Mobility

Opportunities

Advances in digital technology are enabling more convenient vehicle sharing and on-demand trips. From scooters to bikes to cars, more people are moving from owning their own vehicle to paying for the use of a car for a few minutes or a few hours at a time.

In just five years, the number of carsharing vehicles in the region has grown from 1,000 to over 2,500. Displacing as many as 30,000 privately owned cars, shared mobility platforms offer an opportunity to make it more attractive to move and live in this region without needing to own a car.

Reducing the need to own a personal automobile can help reduce congestion, improve safety, and achieve our climate action objectives.

Challenges

If not managed carefully, app-based ride-hailing, and the automated robo-taxis that are to come, can lead to significant increases in driving and traffic, especially in the most congested parts of the region.

In the same way, shared micromobility systems (e.g., shared bikes and scooters) can lead to clusters of scooters and bikes blocking sidewalks and entrances at key destinations, causing particular challenges for people with disabilities.

Digital and Connected Mobility

Opportunities

The internet is reshaping how we connect to opportunities — allowing people to access work, medicine, learning, and shopping without needing to travel — which significantly reduces demands on our transportation system.

By 2025, it is expected that all new road vehicles will be capable of communicating with the internet, with each other, and with street infrastructure.

This connectivity will enable more accurate, personalized, and up-to-the-minute customer information, and more seamless connections between modes and services. It will also enable improved traffic safety and reliability, and more effective asset maintenance.

Challenges

As digital access becomes increasingly important to function in society, people without easy access to the internet fall further behind. Without explicit programs to support universal basic internet access, the digital divide will continue to widen.

As more devices, vehicles, and transportation assets rely on digital connectivity to function, the entire transportation system becomes more vulnerable to cyberattacks and power outages. Substantial investments in redundancy, backup power systems, and cybersecurity will be needed to safely leverage the opportunities of an increasingly connected mobility system.



Nine out of 10 Canadians own smartphones, opening up new opportunities for digital integration with transport



Electric Vehicles

Opportunities

Driven by government policy and by advances in batteries and hydrogen fuel cells, zero-emission vehicles (ZEVs) are becoming more popular. Already, nearly one in 10 new vehicles sold today is electric.

Both federal and provincial governments now require that, beginning in 2035, all new light-duty vehicles sold in BC produce zero emissions at the tailpipe.

These vehicles are becoming more affordable and, within the decade, a market for used electric vehicles (EVs) will become more robust, making them even more affordable. For vehicles that are driven often, such as working vehicles (e.g., fleet, urban freight, and ride-hailing), transitioning to zero emissions represents a cost saving; therefore, we can expect these sectors to transition quickly.

The electric vehicle revolution will be critical to achieving our regional and provincial GHG and air quality targets, given that light-duty vehicles are currently the single largest source of GHG emissions in our region.

Challenges

Currently, battery manufacturing generates significant GHGs. Until the entire supply chain is decarbonized, we cannot rely on the transition to ZEVs alone in the fight against climate change.

The substantial increase in demand for electricity to power an all-electric vehicle fleet will demand new electricity-generating capacity across the province, which will require creative solutions as well as substantial new investment.

Assuming that electricity remains as abundant and affordable as today, electric vehicles will continue to have operating costs of roughly one-third that of comparable gas or diesel vehicles. This will make it cheaper and more attractive to drive more frequently — which could lead to more traffic and congestion.

All personal vehicles — whether powered by electricity or fossil fuels — occupy scarce urban space and are the main culprits behind nearly all traffic fatalities and injuries, especially involving vulnerable road users.

The personal benefits of EVs also accrue to those who can afford them — further exacerbating inequalities.

Meanwhile, the regional fuel sales tax that has historically funded about a third of regional transportation needs will decline and ultimately disappear. A new transportation-based revenue tool will be needed to replace it.

Urban Air Mobility

Opportunities

As advances in electric propulsion, miniaturization, and automation drive the commercialization of electric vertical takeoff and landing vehicles (eVTOLs), we anticipate private sector interest in offering new air transit services targeting short- to medium-length trips. These vehicles could provide very fast connections between destinations within the South Coast region and with neighbouring regions.

Challenges

Expensive and exclusive air transportation services could accelerate inequalities and would likely increase transportation energy consumption.

There is a greater risk of serious injury or fatality in the event of malfunctions or operator errors. And for those on the ground, there could be noise, stress, discomfort, and privacy concerns associated with being under a flight path.



Urban air mobility could become a reality in the coming years, promising to reduce road congestion; the challenge will be safe and equitable introduction of this technology

Image courtesy of Wikipedia

In this era of rapid change, we need to collectively manage these challenges and channel these unprecedented opportunities in order to advance our shared goals and help build a region that delivers access to opportunity for everyone.

By putting our values first, we can shape the future we want. Being clear about those values and aspirations is the topic we now turn to in Part C.



Part C

The Future We Want





Our Vision

In 2050, everyone can easily connect to the people, places, and opportunities that they need to thrive — because we all have real choices that we can count on, that we can afford, and that we can safely enjoy for generations to come. Our transportation system supports an inclusive, future-ready region that has meaningfully advanced reconciliation.


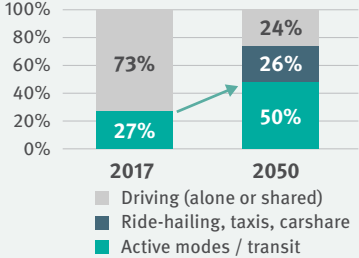
This vision of *Access for Everyone* includes two key ideas.

The first is that we should focus on access, rather than just specifically mobility. After all, the purpose of most transportation is not simply to move around, but to connect us to the people, places, and opportunities that matter most, whether that’s jobs, essential services, education, or other social, cultural, and recreational opportunities. The second idea is that this access should be broadly enjoyed by everyone.

Our Goals and Targets

Transport 2050 sets out five goals, each with an associated headline target intended to describe the scale and pace of our ambition, and intended to set the benchmark for the kinds of actions that are needed. Additional key performance indicators beyond these headline targets are included in Part I.

Each of these five goals begins with the phrase “We all have”. This phrase points to a vision for the future where systemic barriers have been removed so that all people in the region can connect to the opportunities they need to thrive.

| Goals | Headline targets | Where we are today | | | | | | | | | | | | |
|---|---|---|------|------|------|---------------------------|-----|-----|-------------------------------|-----|-----|------------------------|-----|-----|
| <div></div> <div>1/Convenient Choices</div> <div>We all have abundant universally accessible choices allowing us to conveniently connect to opportunities without needing to rely on a car.</div> | By 2050, active transportation and transit are competitive choices accounting for at least half of all passenger trips , with taxi, ride-hail, and carshare accounting for most of the remaining passenger trips. | <div>Transportation mode share (Percentage of trips made by mode)</div>  <table><thead><tr><th>Mode</th><th>2017</th><th>2050</th></tr></thead><tbody><tr><td>Driving (alone or shared)</td><td>73%</td><td>24%</td></tr><tr><td>Ride-hailing, taxis, carshare</td><td>26%</td><td>26%</td></tr><tr><td>Active modes / transit</td><td>27%</td><td>50%</td></tr></tbody></table> | Mode | 2017 | 2050 | Driving (alone or shared) | 73% | 24% | Ride-hailing, taxis, carshare | 26% | 26% | Active modes / transit | 27% | 50% |
| Mode | 2017 | 2050 | | | | | | | | | | | | |
| Driving (alone or shared) | 73% | 24% | | | | | | | | | | | | |
| Ride-hailing, taxis, carshare | 26% | 26% | | | | | | | | | | | | |
| Active modes / transit | 27% | 50% | | | | | | | | | | | | |



What Do We Mean by *Access for Everyone*?

To achieve *Access for Everyone*, we need to realize that every single person in Metro Vancouver has unique needs, preferences, and aspirations. We also need to realize that some people face particular struggles and barriers that can make living and moving around in our region more challenging.

To create a fairer and more just and inclusive transportation system that truly delivers on this promise of *Access for Everyone*, we need to take steps to support these struggles. We also need to understand and address systemic barriers in the transportation system that may cause or worsen disparities experienced by different groups of people — especially marginalized individuals and groups who have been denied equitable processes or outcomes.

It means supporting reconciliation by recognizing the rights of **Indigenous Peoples** while working with Indigenous Nations and urban Indigenous Peoples to ensure access to safe, affordable, and reliable transportation options, including in on-reserve communities.

It means actively taking steps to make people of **all races, faiths, and national origins** feel welcome, safe, represented, and included as full and equal members of society, irrespective of their skin colour, citizenship, or language.

It means making sure that people of **all sexual orientations** and **gender identities** feel welcome, safe, and included. Women and members of the LGBTQ+ community are more frequently subjected to violence, threats of violence, or discrimination, so they may feel less safe to travel alone at certain times or in certain locations.

It means finding ways to support people of **all abilities**. This refers to able-bodied, neurotypical people for whom most of our transportation system has historically been designed, and especially to people with diverse cognitive, intellectual, psychiatric, sensory, and physical abilities and functioning who often struggle to get around in a world that wasn't designed to meet their needs.

It means supporting the needs of people of **all ages**. Children, youth, and older adults often have fewer transportation options compared to middle-aged adults. They also can suffer other barriers, including visual, hearing, or other physical impairments that make it uncomfortable, difficult, or dangerous to travel.

It means ensuring that people from **all socio-economic groups** can afford to easily and safely get around. The cost of transportation can make it prohibitively expensive for people living in poverty to get around and attend to their daily needs, forcing them to drive poorly maintained vehicles, sometimes evade transit fares, walk long distances, or forgo often-important trips altogether.

Many members of our community who face these and other barriers to their mobility also don't often see themselves well represented in transportation decision-making. This “invisibility” means that their needs are often overlooked or poorly understood by decision-makers. This can lead to harmful and discriminatory policies that then further widen disparities.

Advancing social equity means developing a region where people aren't discriminated against or excluded from society because of any of these characteristics, identities, or abilities — instead, they are welcomed, celebrated, and supported, and treated with dignity and respect.

Previous regional transportation strategies have not paid enough attention to issues of social equity and inclusion as they relate to getting around in our region. As governments and public sector

agencies involved with transportation in Metro Vancouver, we have a lot to learn, a lot of data gaps to fill, and a lot of relationships to build.

The strategies and actions contained in Transport 2050 take some preliminary but substantive steps towards realizing a more just, equitable, and inclusive transportation system. *Access for Everyone* is about supporting equitable outcomes for all individuals, including asking not only whether a program or policy is working — but asking *for whom* it works.

Throughout this document, wherever you see the term “everyone”, it is referring to the *everyone* described above, including non-Indigenous and Indigenous Peoples; people of all races, faiths, national origins, and languages; people of all sexual orientations and gender identities; and people of all ages, abilities, and socio-economic groups.

Actions that advance social equity can be found in Parts E (Strategies and Actions) and F (Implementation Approach), and are shown with this icon:



For a summary of all social equity-related actions, see Part K (Thematic Index).

Part D

The Tools in Our Toolkit





There are three key policy tools available to help steer the transportation system towards the future we want: one where we can realize our goals, and where we can build a more just, equitable, and inclusive transportation system that is resilient and future-ready.

Each of the following three policy tools drive the strategies and actions described in Part E.

1. Managing Land Use

It's often said that the best transportation plan is a good land use plan. Land use influences travel behaviour in many ways, especially by determining how far we need to travel to different destinations, which then impacts the modes we're likely to use and the total kilometres we're likely to travel in a year.

Local government land use planning and zoning regulations have great power to create more compact urban forms, more complete communities, more active transportation, and more transit-friendly streets. This includes the quantity and quality of intersections, street design, and grid patterns. In this way, land use

can reduce sprawl, promote more sustainable modes of transportation, and reduce levels of vehicle ownership and use. Residents of walkable, complete communities oriented around frequent transit typically own 10%–30% fewer vehicles, drive 20%–40% fewer kilometres, and use walking, biking, and transit 2–10 times more than residents in automobile-dependent locations.³

That's why it's so important for the region to co-ordinate land use and transportation planning. To that end, Transport 2050 will help co-ordinate land use policies (outlined through Metro 2050 and municipal official community plans) and transportation decisions, especially with respect to the location of future major transit investments.

2. Managing Travel Demand

This tool focuses on making better use of the existing transportation system, for example by encouraging off-peak travel and by discouraging driving, especially single-occupant vehicle trips. The three main types of demand management tools include: regulation and design (e.g., pedestrian-only zones), pricing (e.g., peak period parking charges), and information (e.g., personal travel planning, marketing).

Of the three categories noted above, regulation and pricing have the greatest potential to significantly reduce traffic and congestion and increase the use of walking, biking, rolling, and transit. For example, adjusting the price of automobile insurance based on monthly or annual distances driven has been shown in other jurisdictions to reduce vehicle-kilometres-travelled by as much as 10–15%.⁴

³ *Land Use Impacts on Transport: How Land Use Patterns Affect Travel Behavior*, TDM Encyclopedia, Victoria Transport Policy Institute, January 11, 2022, https://www.vtpi.org/tgm/tgm20.htm#_Toc119886787

⁴ *Pay-As-You-Drive Insurance in British Columbia*, September 28, 2018, https://vtpi.org/PAYD_BC_Backgrounder.pdf





Balancing the Three Tools

The task of every long-range transportation plan is to find the optimal balance between the different policy tools on the table. By carefully managing land use, travel demand, and service levels and infrastructure, the region can work towards achieving its goals and targets.

3. Managing Service Levels and Infrastructure

Service level means the quality of the service experienced by the traveller or, in the context of goods movement, by the person or business shipping freight.

Aspects of service level include speed, convenience, frequency of service, comfort, and other qualities. Service level is a key factor for determining how competitive different modes of travel are.

In many cases, people will change their choice of travel mode because of service levels. For instance, many travellers will not use transit, despite the affordability of the fare, because it is not quick and convenient enough when compared with vehicles. However, a proportion of vehicle drivers will change to transit when they observe fast-moving buses passing them in dedicated transit lanes.

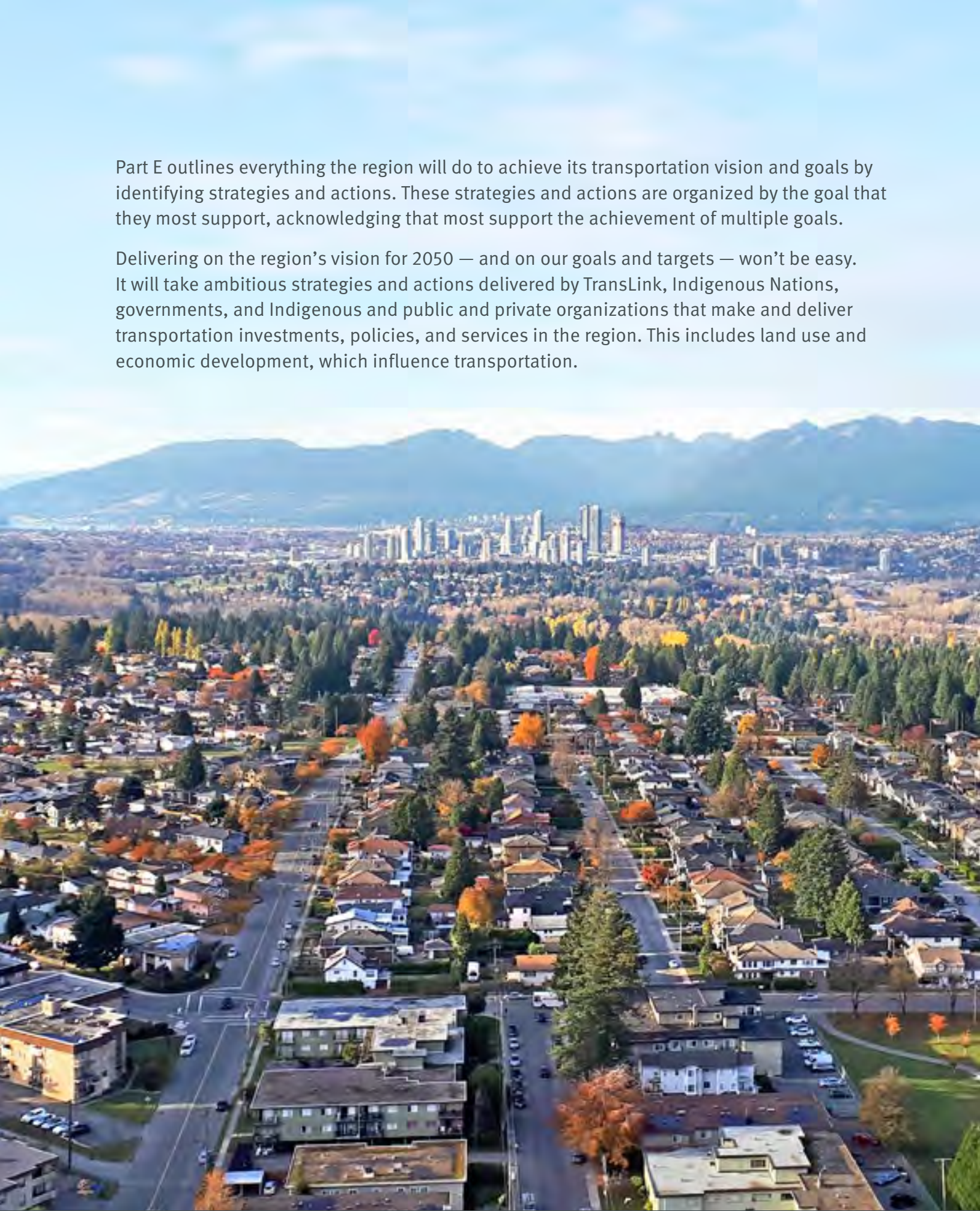
Selectively improving the relative service levels of the different modes or in different places can shift travel patterns. Hence, how we use our scarce road space, and how priority is allocated between active transportation, transit, cars, trucks, and other vehicles, has a major impact on service level.

Reimagining our streets in order to increase the quality and supply of walking, biking, rolling, and transit service and infrastructure is an essential prerequisite to increasing the share of trips by active and shared modes. It also helps to reduce traffic congestion and emissions (although not nearly as much as the land use and demand management tools described above) and helps to make significant improvements to affordability, health, safety, and community well-being.

Part E

Strategies and Actions





Part E outlines everything the region will do to achieve its transportation vision and goals by identifying strategies and actions. These strategies and actions are organized by the goal that they most support, acknowledging that most support the achievement of multiple goals.

Delivering on the region’s vision for 2050 — and on our goals and targets — won’t be easy. It will take ambitious strategies and actions delivered by TransLink, Indigenous Nations, governments, and Indigenous and public and private organizations that make and deliver transportation investments, policies, and services in the region. This includes land use and economic development, which influence transportation.

| Theme | Access for Everyone | | | | |
|------------------|---|--|--|--|---|
| | We all have real choices | that we can count on, | that we can afford, | that we can safely enjoy, | now and into the future. |
| Goals | 1/Convenient Choices for Everyone | 2/Reliable Choices for Everyone | 3/Affordable Choices for Everyone | 4/Safe & Comfortable Choices for Everyone | 5/Carbon-Free Choices for Everyone |
| | | | | | |
| Headline Targets | By 2050, active transportation and transit are competitive choices accounting for at least half of all passenger trips , with taxi, ride-hail, and carshare accounting for most of the remaining passenger trips. | By 2050, people and goods are spending 20% less time stuck in congestion , compared to today. | By 2050, none of us — but especially those of us with less ability to pay — need to spend more than 45% of our household incomes on transport and housing combined . | We steadily reduce serious traffic injuries and fatalities by at least 5% annually until we reach zero before 2050. | By 2030, we have lowered greenhouse gas emissions from light-duty vehicles by 65% over 2010 levels; we have eliminated transportation greenhouse gas emissions altogether by 2050 . |
| Strategies | 1.1 Make active transportation the most convenient choice for shorter trips | 2.1 Make transit more reliable | 3.1 Make living close to frequent transit more affordable | 4.1 Eliminate traffic fatalities and serious injuries | 5.1 Reduce the energy requirements of the transport system |
| | 1.2 Make transit the most convenient choice for longer trips | 2.2 Make goods movement more reliable | 3.2 As a priority, invest in transportation modes that are lowest cost and most affordable to residents | 4.2 Ensure everyone feels welcome, comfortable, and physically secure while getting around | 5.2 Transition to zero-emissions vehicles |
| | 1.3 Make it convenient for all households to make the occasional car trip without needing to own a car | 2.3 Make driving and parking more reliable | 3.3 Ensure that transportation fees and taxes are affordable for everyone | 4.3 Minimize transportation’s adverse impacts on local communities | 5.3 Support ready access to low-carbon fuels for the transportation system |
| | 1.4 Seamlessly connect different transport services both physically and digitally | 2.4 Maintain transportation infrastructure in a state of good repair | 3.4 Help people and businesses connect to more economic opportunities | 4.4 Safely respond to and recover from disruptions and disasters | 5.4 Account for and reduce upstream and downstream emissions in the transportation system |
| Strategic Lenses | Reconciliation | | | | |
| | Social Equity | | | | |
| | Resilience | | | | |
| Key | <div>Actions that support one of the strategic lenses are noted with these icons:</div> <div><div>Reconciliation</div><div>Social Equity</div><div>Resilience</div></div> | | | | |



GOAL ONE

Convenient Choices for Everyone



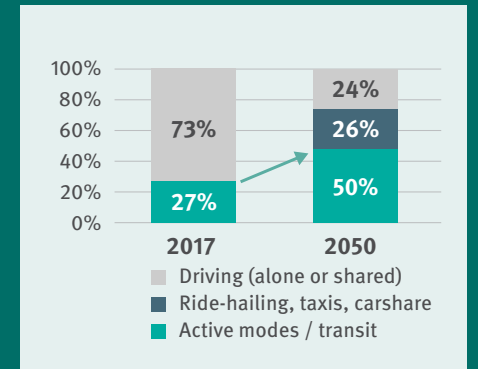
THE PROBLEM TODAY

“Walking, rolling, cycling, transit, and shared cars aren’t convenient or available choices where I live and for the trips I need to make, so I need to rely on my own car.”



WHERE WE WANT TO BE

We all have universally accessible choices that allow us to conveniently connect to opportunities without needing to rely on a car such that, by 2050, active transportation and transit are competitive choices accounting for at least half of all passenger trips, with taxi, ride-hail, and carshare accounting for most of the remaining passenger trips.



We envision a future where everyone can easily choose the mode of transportation that works best for the unique needs of each of their trip. The person who cycles to visit a friend on Saturday can easily take a shared vehicle to the mountains on Sunday. Meanwhile, their partner uses a wheelchair-equipped family car to visit a friend outside the region, takes transit for everyday trips, and joins work remotely from the comfort of home.

For many people, short trips can often be most quickly and conveniently served by walking, biking, or rolling. For longer trips along busy corridors, transit is often the most convenient and economical choice. For longer, more indirect trips, especially to less dense parts of the region or when carrying heavy cargo, cars are often the most convenient choice. Each of these options has a time and a place.

To ensure that everyone can make the most convenient choice for each trip, we need to make sure that people have access to a variety of different options where they are and where they need to go. These options need to be both physically accessible for everyone and physically available throughout Metro Vancouver, including in on-reserve communities.

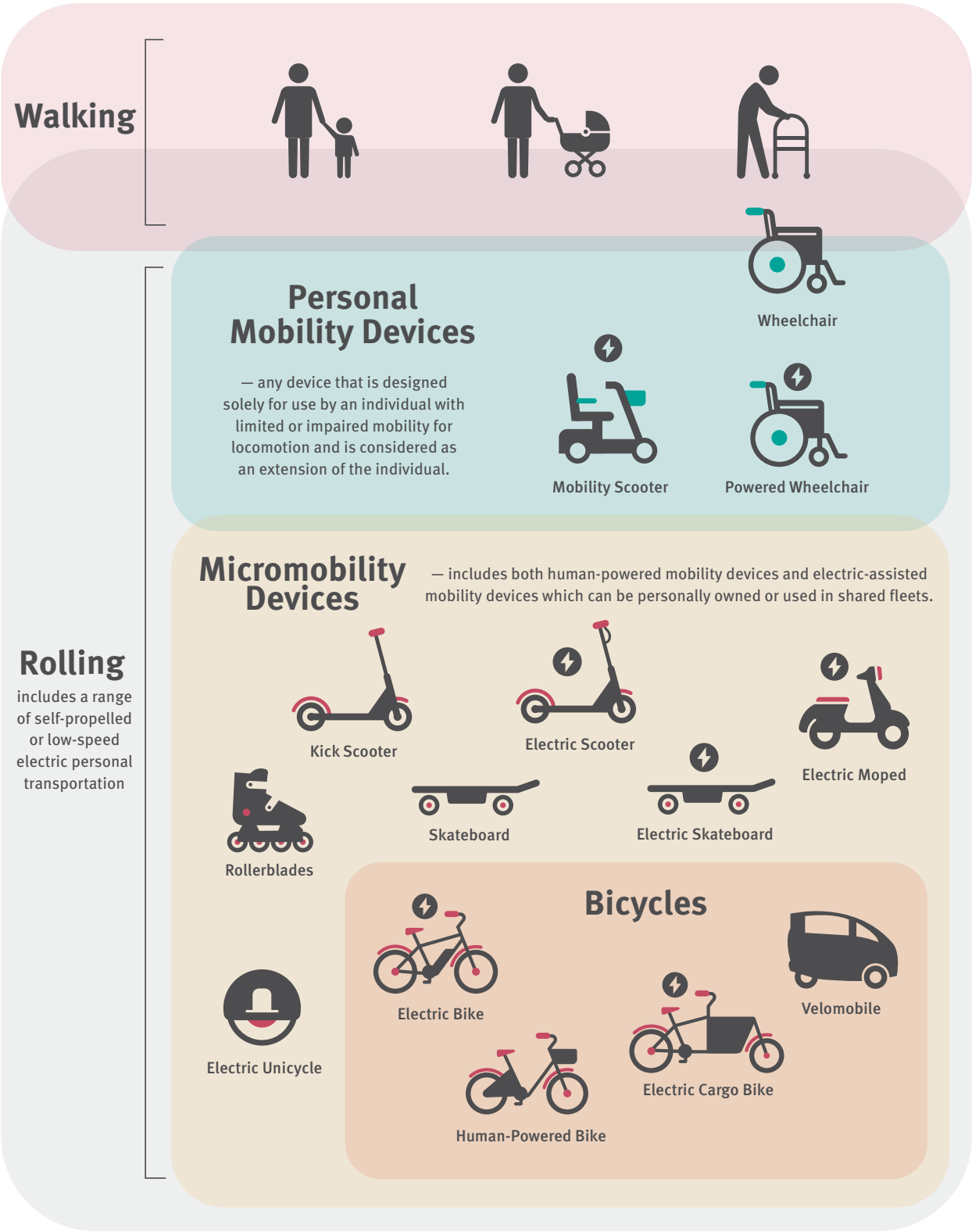
The first two strategies in this section describe what it will take to **increase the convenience of active and shared transportation** for everyone such that, by 2050, walking, biking, rolling, and transit **account for at least half of all passenger trips**, with taxi, ride-hail, and carshare accounting for **most of the remaining passenger trips**.

This section also describes how walking, biking, rolling, and transit aren’t viable options for many trips. For these cases, this strategy aims to ensure that people have access to the convenience of a car but without needing to own one. And when avoiding a trip altogether is the best choice, for example by connecting online instead of in person, this option should also be convenient and accessible to everyone.

The following pages describe what it will take to create a future where **we all have universally accessible choices that allow us to conveniently connect to opportunities without needing to rely on a car.**

- For **walking, biking, and rolling** to be the convenient choice for shorter trips, key destinations need to be physically close, with compact, **complete communities** connected by **fine-grained networks** of high-quality walkways, bikeways, and low-speed streets. These conditions allow active transport trips to be shorter and more direct than the comparable motor vehicle route and also make the trip feel welcoming, safe, and attractive.
- For **transit** to be the convenient choice for longer trips, most homes, jobs, and major destinations will need to be located along or quickly connected to major transit corridors that feature fast, frequent, reliable, and high-capacity service that is universally accessible and barrier-free. This requires tight co-ordination between land use and transportation planning — directing nearly all future growth to Urban Centres and major transit corridors — and removing barriers to ensure transit is accessible and inclusive for everyone.
- For the **occasional use of a vehicle** without needing to own one, we’ll need to incentivize carpooling; substantially expand universally accessible fleets of carsharing, ride-hailing, and taxis; and leverage automated vehicle technology.
- Integrating all of these choices **together in the same location** makes them even more convenient. Mobility hubs that feature active transportation infrastructure and shared-mobility options at transit stops and stations, along with Mobility-as-a-Service (MaaS) apps that allow multimodal trip planning, booking, and payment can make it easier to connect between modes. Sometimes, the most convenient choice is to avoid making a trip altogether and to get what we need by going online, where the internet can enable access to work, school, health services, and shopping — all from our smartphone or computer.

Figure 4: Typology of Active Transportation Modes





On Resilience & Convenient Choices

With more transportation choices available, we'll all have more alternatives in the event that our first choice of transportation faces disruption. For example, great bikeways and the abundant availability of shared electric bikes (e-bikes) will mean that more people have an option in the event of a car or bus breakdown. If you were hoping to use a shared vehicle to visit a friend but find that one isn't available, hopping on the bus is always an option.

If we design our communities to support more and better active and shared transportation options, we'll all have greater choice and individual resilience. Expanding the transit network so there are multiple routes to get to many destinations increases network resilience in the event of delays in one part of the system.

The strategies to achieve convenient choices in this section could also introduce new vulnerabilities that we'll need to actively manage. For example:

- If the costs of housing continue to rise, people may need to relocate to areas with lower-cost housing that are more car-dependent, which would lead to increased transport costs and fewer transport choices for those households, and increased traffic for everyone.
- A greater reliance on digital access for more services may increase the digital divide between those who have ready access to the internet and smartphones and those who do not.
- A greater reliance on digital access also increases our vulnerability to cyberattacks, with real-world impacts on the transport system.

To better understand what tomorrow might bring, Metro Vancouver and TransLink partnered to develop the **Regional Long-Range Growth and Transportation Scenarios** report. This report examines four plausible futures for Metro Vancouver, which can help us identify measures to ensure that both transportation and the region are more resilient.



Public bike sharing arrived in the region in 2016, with the launch of Mobi by Shaw Go in Vancouver, leading the arrival of other new systems

Image courtesy of City of Vancouver

Strategies and Actions

Strategy 1.1: Make active transportation the most convenient choice for shorter trips.

Active transportation includes all human-powered forms of travel. Walking and cycling are the most common, but using a wheelchair or other mobility aid, running, scootering, skateboarding, or inline skating are all forms of active transportation. Electric bicycles, electric kick scooters, and other similar forms of personal micromobility devices that can travel up to 32 kilometres per hour are also considered alongside these purely human-powered forms of travel, since they often operate in the same space, such as on off-street pathways and bikeways. These electric micromobility options may allow more people to travel greater distances and “flatten” steep roadways that might otherwise be too challenging. Motorized two-wheelers that can exceed 32 km/hr are not considered active transportation, since vehicles travelling that fast are meant to be operating on roadways alongside cars and trucks.

Active transportation is low-cost, zero- or low-carbon, healthy, and efficient. Walking, biking, and rolling can be used on their own for shorter (and increasingly longer) trips; they are also important ways for people connect to transit, holding the potential to greatly expand transit's reach. A substantial and rapid expansion of the region's active transportation networks (paths, walkways, bikeways) is one of the most cost-effective ways to reach all five Transport 2050 goals.

Many of us report wanting to use active transportation more frequently, and many of us need to rely on active transport for accessibility or affordability reasons. However, for many trips, active transportation is not convenient, for example, where distances are too great, where there is a lack of safe infrastructure, or where there is nowhere to store equipment at our final destination. The following actions aim to address each of these deficiencies.

The other major barrier to more walking, biking, and rolling is the very real safety risk — and the associated fear and anxiety — of being next to high-speed traffic, whether those are cars and trucks on the roadway, or electric bicycles and scooters on a multi-use pathway. Actions to address these safety and comfort concerns are outlined in Goal 4.

Actions

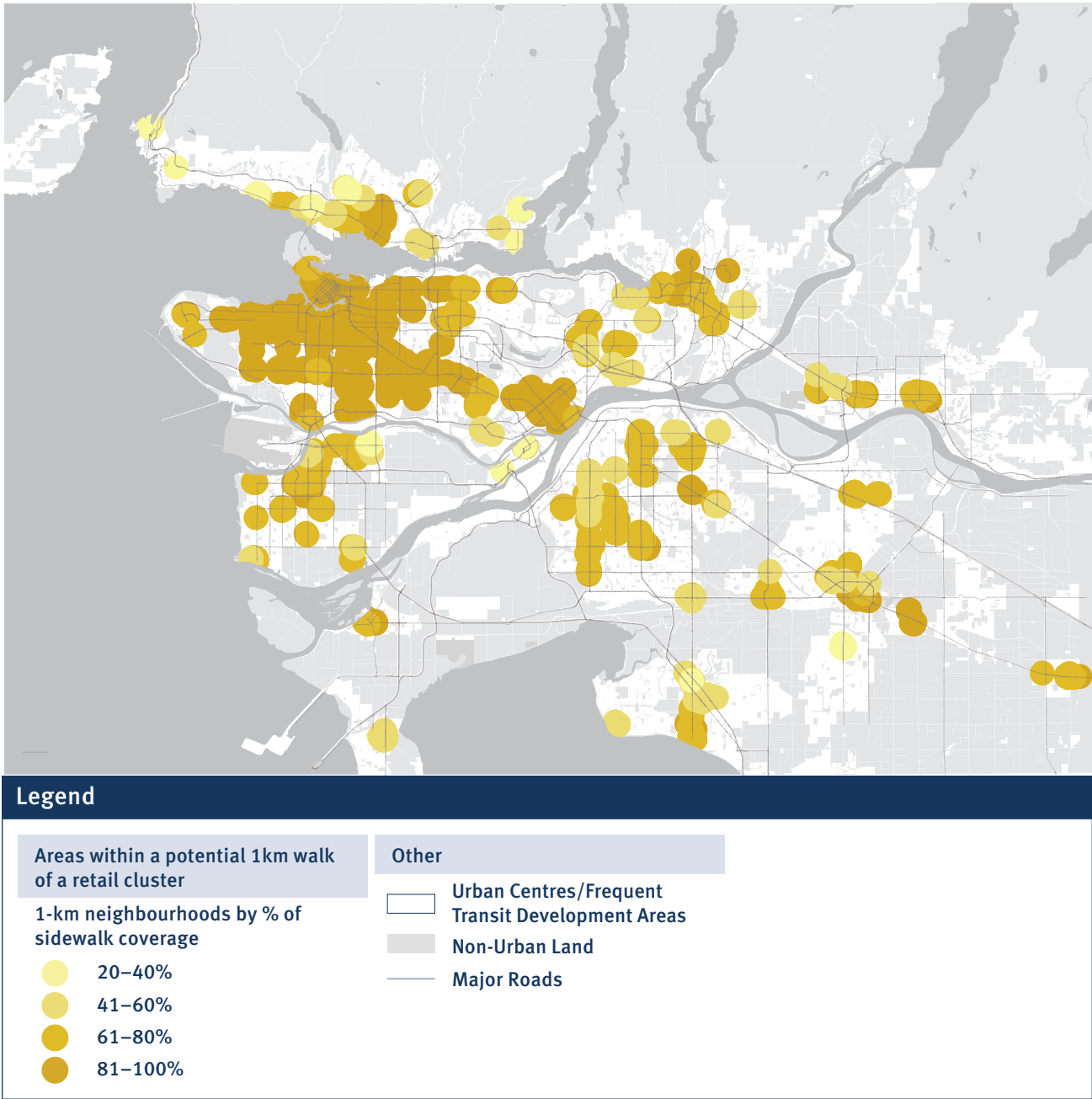
- 1.1.1. Support the development of walkable and **complete communities** as outlined in Metro 2050, so that nearly everyone in the urban parts of the region⁵ can find all of the services or goods they are likely to need more than once a week within a convenient one-kilometre walk, bike, or roll.
- a. Encourage local land use planning authorities to concentrate street-oriented shops and community amenities at the heart of each neighbourhood, including schools and childcare, healthcare and pharmacies, groceries, parks, and a selection of restaurants and shops.

b. Support local shops and services — who are facing increasing online competition and rising rents — on commercial main streets by ensuring that people can conveniently walk to them.

c. Encourage local economic development initiatives to enhance the attractiveness and competitiveness of commercial main streets at the heart of each neighbourhood with programmatic funding for making them more attractive and welcoming for everyone.
- 1.1.2. Design **walkable neighbourhood street networks** that are discontinuous for cut-through motor-vehicle traffic but that are seamlessly well-connected with a dense network of pathways, walkways, bikeways, and green spaces, to make walking, biking, or rolling the most convenient choice for most short trips (see People-First Streets on page 168).

⁵ Urban parts of the region are defined as those lands within the Urban Containment Boundary shown in Map 3. <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/DraftMetro2050.pdf>.

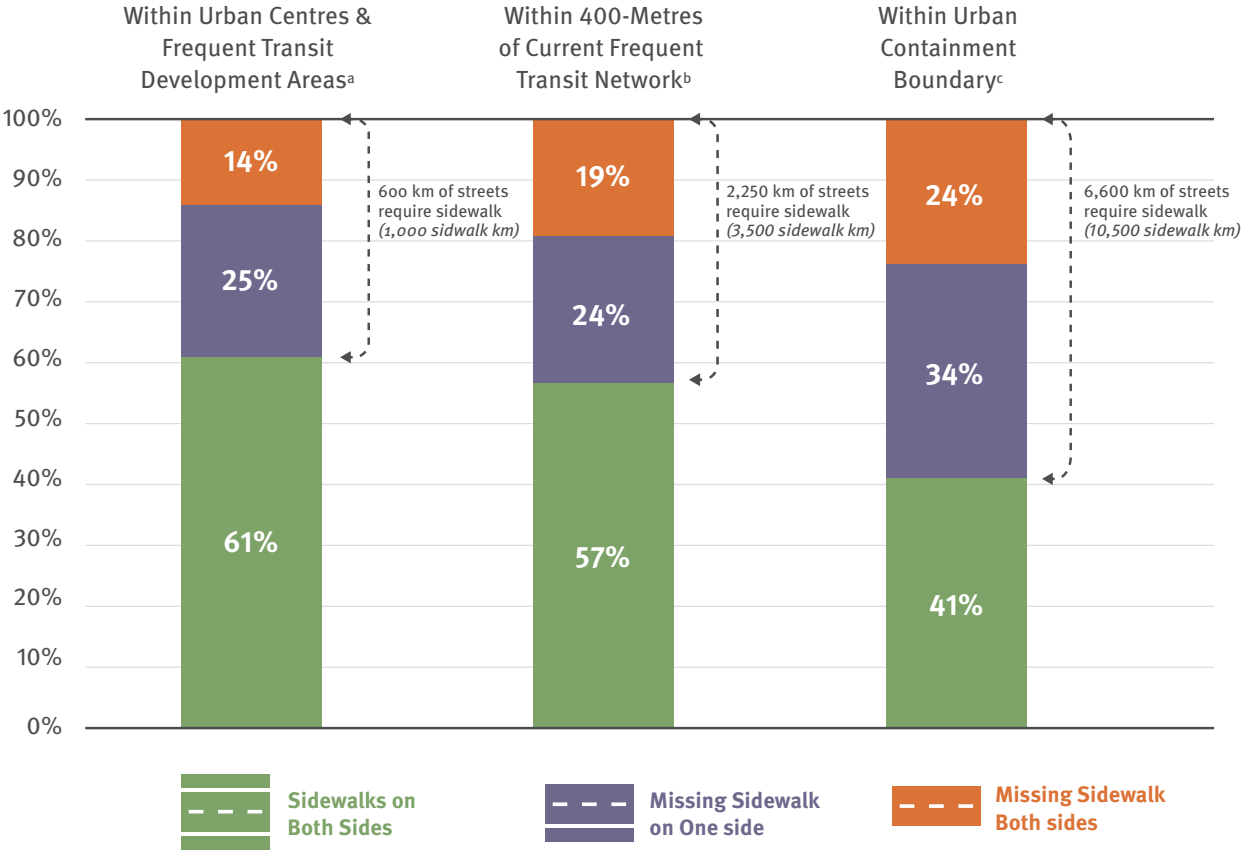
Map 6: Neighbourhoods within 1 km of a Retail Cluster



Circles illustrate neighbourhoods where residents are within 1 kilometre of a retail cluster of at least 25 adjacent shops. These residents have the greatest ability to access the goods and services they are likely to need more than once a week within a short walk, bike or roll. Lighter-coloured circles indicate areas where many streets lack sidewalks, hindering residents’ ability to walk to nearby local shops.

- 1.1.3. Rapidly complete a **network of walkways** so that walking can be the most direct, and the most convenient, travel option for most short trips (e.g., a distance of less than one kilometre).
- a. Ensure that safe and comfortable walkways are provided throughout all Urban Centres and Frequent Transit Development Areas to connect people to stations and stops served by frequent transit service; ultimately, ensure that every public-facing business and community facility in the region is connected by the region’s walkway network and that they can be reached as directly as possible by walking or rolling. 🚶
 - b. Ensure that every street within the Urban Containment Boundary (with the exception of limited-access highways) has sidewalks on both sides. These sidewalks need to be accessible to people using a wheelchair or pushing a stroller, or otherwise designed for traffic to travel at walking speeds. ♿

Figure 5: Status of Sidewalk Availability Today on Streets within Different Areas of Metro Vancouver



^a Refer to Map 11: Major Transit Growth Corridors from Metro 2050 for Urban Centres & Frequent Transit Development Areas
^b Refer to Map 9: Frequent Transit Network Today for the current Frequent Transit Network
^c Refer to Map 11: Major Transit Growth Corridors from Metro 2050 for the Urban Containment Boundary



- 1.1.4. Rapidly complete a **network of bikeways, bike parking, and e-charging stations** that make bicycles, scooters, and other electrified or micromobility devices the most direct, and the most convenient, travel option for most trips between 1 and 5 kilometres, as well as longer trips throughout the region.
- a. Develop the bikeway network per the Regional Cycling Strategy, with a focus on making safe and comfortable bikeways widely available in all Urban Centres and areas of high cycling potential across the region.
 - b. Advance implementation of a Regional Cycling Network consistent with Map 7, comprised of a Major Bikeway Network that connects Urban Centres across the region and a Regional Greenways Network that connects to parks, open spaces, natural areas, and scenic pathways.
 - c. Provide a sufficient level of secure parking (including racks, lockers, and parkades) and charging stations for bicycles and electrified micromobility devices across the bikeway network, especially in Urban Centres and Frequent Transit Development Areas, at transit stations and exchanges, and at civic locations such as schools, libraries, parks, and greenways.
 - d. Require provision of appropriate end-of-trip facilities, such as showers, lockers, and basic bike maintenance tools at workplaces and other major non-residential trip-generating uses.
 - e. Program traffic signals on major bikeways and bicycle-priority streets to facilitate “green waves”, allowing people travelling at average bicycle speeds to travel continuously without being stopped by a red light.



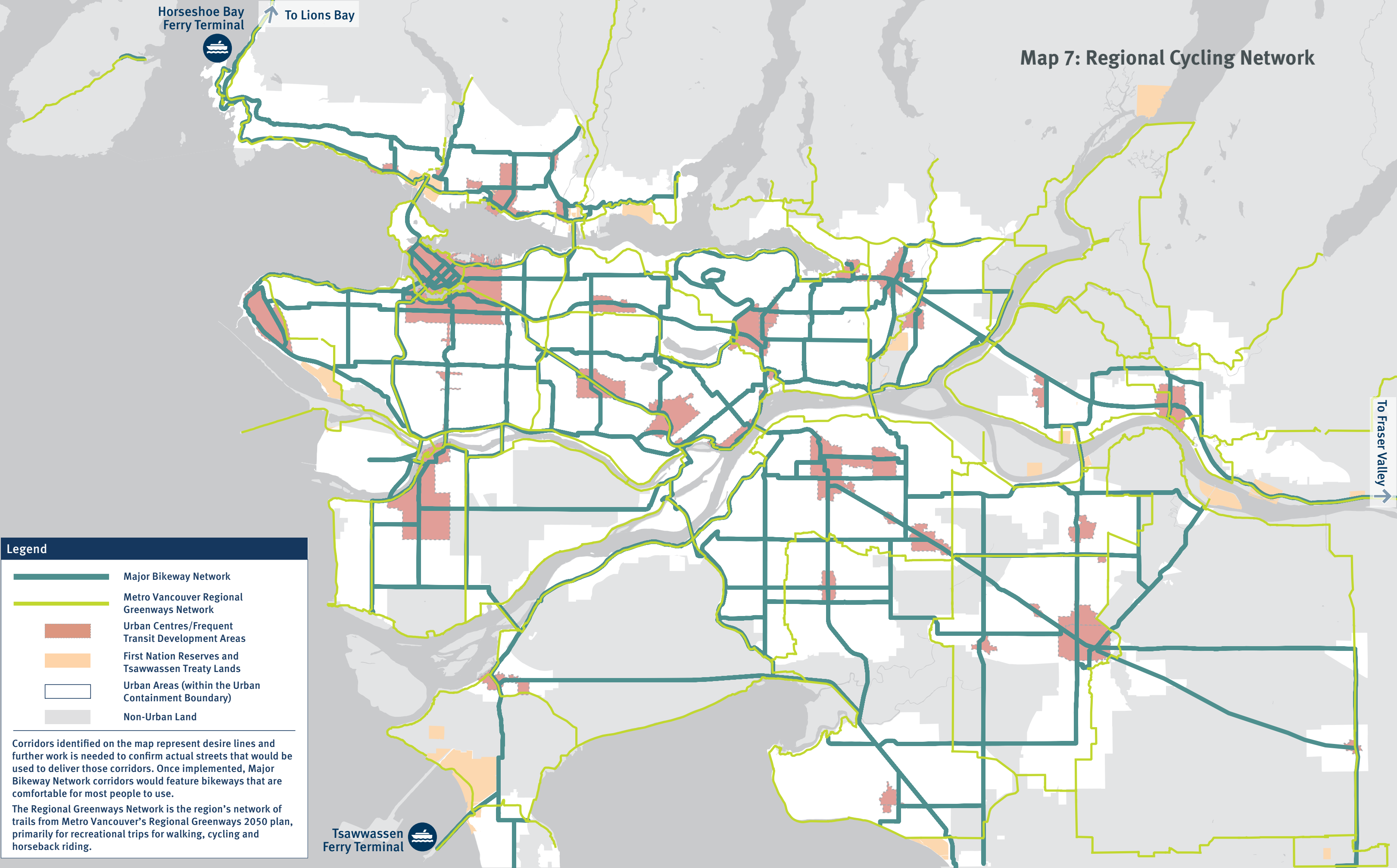
Figure 6: Rapid Bikeway Network Expansion

Transport 2050 aspires to rapidly complete a well-connected and continuous network of protected bikeways that separates people on bicycles, scooters, and other micromobility devices from faster-moving cars and trucks. Our region can do this most quickly by using quick-build and lower cost materials such as curbs and planter boxes (see images, above and below). In approximately six months in 2021, the City of Surrey substantially completed a network of protected bikeways, using the quick-build method, along five corridors within their city centre linking up several other existing bikeways. Using more traditional, higher-cost materials, this bikeway network would have taken much longer to complete.

Images courtesy of Roy Symons



Map 7: Regional Cycling Network






- 1.1.5. Improve access to **shared micromobility** by enabling convenient, safe, accessible, and interoperable services that are well distributed throughout the urban parts of the region, such that they can support short local trips within Urban Centres as well as longer trips between Urban Centres.
- a. Develop region-wide shared micromobility standards for safety, data collection and management, space and curbside allocation, fleet and operational requirements, and supporting infrastructure that makes it easy to support and scale these services and ensure they are interoperable.
 - b. Support access to shared micromobility services for Indigenous Peoples living on reserve and treaty lands, where desired by the community. 
 - c. Ensure shared micromobility devices are equitably accessible and affordable across the region, including by communities with a high proportion of disadvantaged residents. 
 - d. Regulate end-of-trip procedures to ensure that devices are not blocking sidewalks, entrances, or rights-of-way so that pedestrians — especially people with disabilities — are unobstructed. 

Figure 7: Key Characteristics of Different Transit Layers

| | Convenient & Universally Accessible | Reliable & Congestion-Free Travel Time | Fast & Competitive with Car Travel Time | Frequent Departures, at Least Every 15 minutes or Better | High Capacity Accommodating More Than 1,000 People Per Hour |
|------------------|-------------------------------------|--|---|--|---|
| Local Transit | Always | Sometimes | – | – | – |
| Frequent Transit | Always | Sometimes | Sometimes | Always | – |
| Express Transit | Always | Always | Always | Sometimes | Sometimes |
| Major Transit | Always | Always | Always | Always | Always |

The multiple layers of our transit network

- Local transit** provides extensive coverage and ensures that all development areas in the urban part of the region, as well as some areas of development beyond the Urban Containment Boundary, have convenient access to transit. This may be provided by fixed-route local bus service or, in some limited cases, through demand-responsive transit, particularly in times and places with insufficient demand to warrant fixed-route service. Demand-responsive transit can also play a supportive role to meet the needs of those people who can’t safely navigate the conventional transit system without assistance, whether that’s for local trips or longer ones. With short walks to stops, local transit — both fixed-route and demand-responsive — is used for trips within each community or to connect to higher-order transit services.
- Express transit** provides reliable and fast service over longer distances both within and across regional boundaries. Travel times that are as fast or faster than driving are achieved by routing that is direct and largely separated from traffic.
- The **Major Transit Network (MTN)** is the highest order of transit — with services that are high-capacity, high-frequency, fast, and reliable, travelling in dedicated rights-of-way all day, every day, and in both directions. The MTN is expected to be delivered primarily through bus-based services, but will include a range of technologies, each with different capacities and infrastructure needs. Reallocating road space will be the most cost-effective way of expanding the MTN; however, there will be situations where widening of roads or construction of grade-separated rapid transit facilities are required. These situations may arise from changes in adjacent urban form, a lack of available road space, or through transit demand along a corridor exceeding the capacity of conventional service. Together, the Express and MTN layers create a grid network of reliable and fast transit services, providing convenient connections and improving access to high-quality transit throughout the region (see Map 10: Reliable & Fast Transit Network (Today and 2050 Concept)).
- Frequent transit** supports spontaneous trips, without needing to refer to a schedule. Currently, we consider 15-minute or better frequencies to provide a high degree of convenience for customers. Over the next three decades, we envision that nearly all local transit routes within the urban area will eventually operate at very high frequencies, and that we will work to improve on this minimum expectation for frequency to make transit even more attractive. In the future, transit vehicles along frequent transit routes could be expected, at a minimum, every 12, 10, or even 5 minutes. This would be implemented as land use and demand grow, with the deployment of automated transit vehicles potentially being able to support this high level of frequency.

Strategy 1.2: Make transit the most convenient choice for longer trips.

For trips not suited for walking, rolling, or cycling, transit should be a convenient option — especially when it is tightly integrated with the regional growth management goals and strategies of Metro 2050 such that most homes, jobs, and major destinations are near frequent stops and stations.

In addition to focusing growth near major transit stops and stations, expanding the reach, speed, and frequency of the transit system is a key to providing convenient travel alternatives to driving.

The transit network is comprised of several different service layers, each with their own set of service characteristics (span of service, frequency, route design) and unique role. These different layers work together to provide transit to most residents of the region, and to serve a wide range of different customer markets, origins, and destinations. As service expansion continues, it will be a priority to equitably reflect the unique needs of geographic and demographic communities in the region; for example, this might include special services in areas with a high population of seniors, or different schedules that target communities where many residents are shift workers.



Actions

- 1.2.1. Support the **transit-oriented regional growth** framework outlined in Metro 2050, in order to make transit more convenient for more people and for more trips.
 - a. Continue to plan for a compact urban form within the Urban Containment Boundary when developing and implementing transportation plans, strategies, and investments. (M2050 1.1)
 - b. Discourage the provision of infrastructure that would facilitate the dispersal of housing and employment growth outside the Urban Containment Boundary when preparing and implementing transportation plans, strategies, and investments. (M2050 1.1)
 - c. Locate all major developments according to the following location-efficiency framework, consistent with the goals and strategies of Metro 2050.

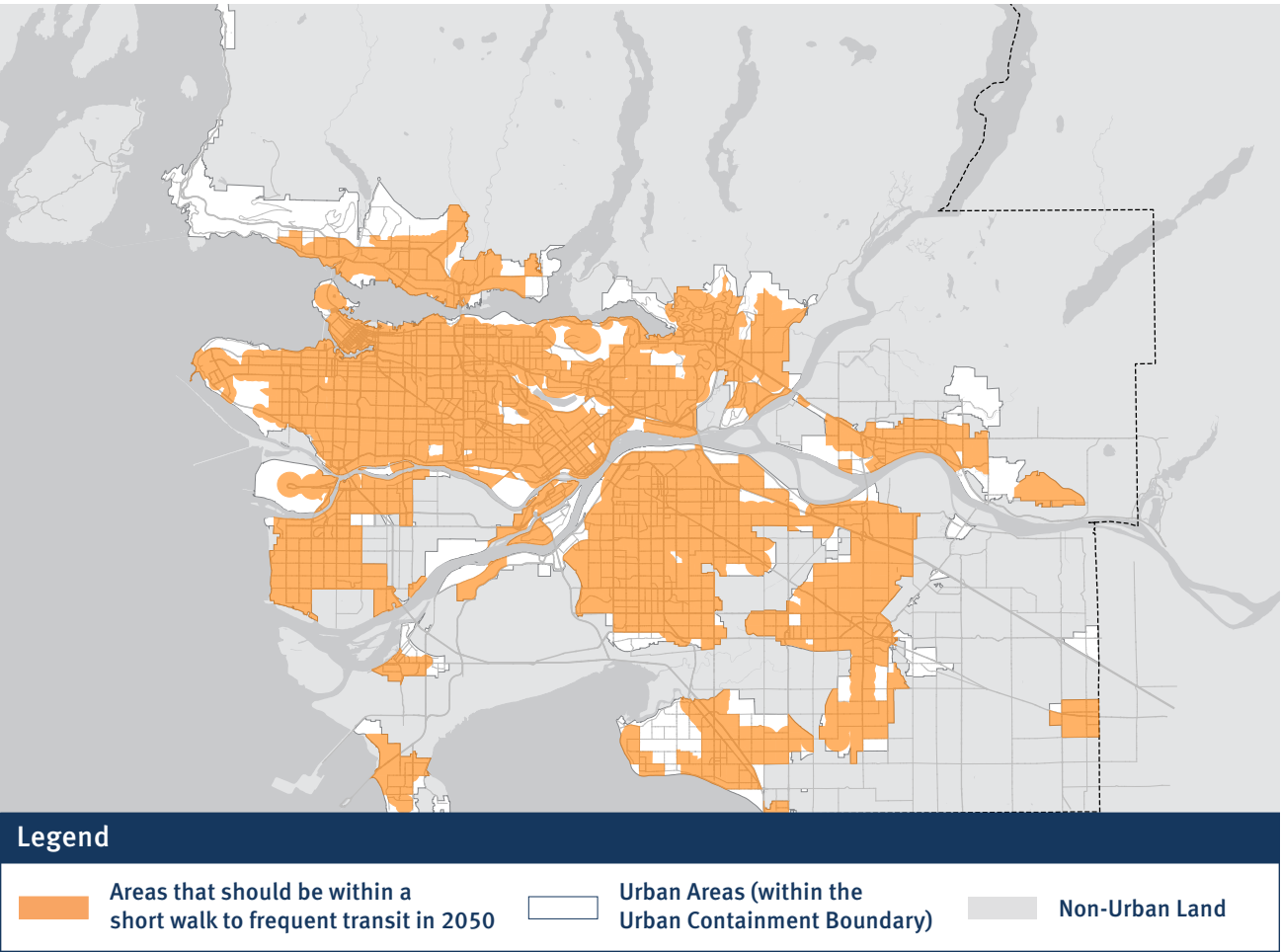
| Location Type | Development Type |
|--|---|
| Locations with excellent transit and poor car/truck accessibility | Suitable for uses with a large number and high density of employees and many visitors, such as offices and community, cultural, educational, and health institutions. |
| Locations with good transit and good car/truck accessibility | Suitable for uses with a large number of employees or visitors, but at moderate densities and/or for those who depend partly on car journeys for professional reasons. |
| Locations with poor transit and excellent car/truck accessibility | Suitable for uses with the lowest densities of employees or visitors, but that generate significant numbers of truck trips like logistics, warehousing, and other industry. |

Table 1 — Location-efficiency framework for siting major trip-generating developments

- d. Secure commitments from all local, regional, provincial, and federal public sector agencies to lead by example by locating their offices and other significant trip-generating activities in locations with excellent transit accessibility — in Urban Centres, Frequent Transit Development Areas, or near stops and stations in the Major Transit Network.

- e. Implement recommendations made in TransLink’s Transit-Oriented Communities Design Guidelines to ensure that transit investments support the development of highly walkable, climate-resilient, and inclusive transit-oriented communities.
- f. Ensure supportive land use and community design for major transit investments through agreements early on in project development that build on existing Supportive Policy Agreements. Agreements can provide confidence to municipalities to implement supportive land use ahead of transit investments, and increased certainty that major investments will be supported by transit-oriented land use planning, design, and demand management policies at corridor, neighbourhood, and site scales.
- g. Work with Indigenous communities to develop context-sensitive land use plans that help support transit service provision in their communities. 🍃

Map 8: Areas That Should Be within a Short Walk to Frequent Transit in 2050



- 1.2.2. Provide a **transit system that is accessible and barrier-free** for everyone across the region. 🌐
 - a. Prioritize investment in transit service that improves access (1) for people living on Indigenous Nation reserves and for urban Indigenous Peoples; (2) for areas with high proportions of people who are low-income, without access to a car, disabled, visible minorities, or seniors; (3) to parks, beaches, and natural areas; and (4) to emerging transit-oriented areas with plans for higher densities and mixes of land uses.
 - b. Work with Indigenous Nations to determine community-specific transit service priorities. 🍃
 - c. Make the built environment surrounding rapid transit stations, exchanges, bus stops, wayfinding, and other connection points universally accessible and supportive of a range of unique customer needs. 🌐
 - d. Ensure that all transit vehicles and passenger facilities are universally accessible and barrier-free. 🌐
 - e. Meet the needs of customers with disabilities by providing customized service when they are unable to independently use the conventional system. The customer experience should be high-quality, i.e., easy to book and use, and suited to a wide range of unique customer needs. This may require an accessible vehicle, a specially trained attendant, door-to-door service, or person-to-person transfer. 🌐
 - f. Continue to maximize the combination of accessible conventional services, custom transit services, and travel training support to provide a seamless experience using a family of services approach. 🌐
 - g. Provide a basic level of transit access at low-demand times (including throughout the night) and to low-demand locations (including areas outside the Urban Containment Boundary) using either local fixed-route service or on-demand microtransit where it can provide better service than fixed-route transit for the same cost or less.
 - h. Provide Park and Ride facilities to allow travellers from lower population density areas (where walking, biking, or local transit connections are not viable) to connect into the transit system, consistent with the approach outlined in TransLink’s Park and Ride Guidelines.
 - i. Consider additional passenger ferry services to connect locations where water-based transit offers greater accessibility, convenience, travel times, and reliability compared to land-based transit alternatives.

- 1.2.3. Expand **frequent local fixed-route transit service** so that nearly all residents within the urban area are within a five-minute walk of frequent, all-day, everyday service.
- Prioritize investment in frequent local transit to (1) minimize chronic overcrowding and pass-ups on the existing transit network; (2) provide convenient frequencies, particularly in areas with all-day demand; (3) extend span of service throughout the region, particularly in areas with all-day demand or specific needs for early morning and/or late-night service; and (4) improve network connectivity, facilitating transfers and improving customer convenience.
 - Take advantage of the arrival of Level 4 vehicle automation⁶ to operate smaller transit vehicles (right-sized to demand) and accelerate the provision of significantly increased frequency levels.
- 1.2.4. Expand fast, frequent, reliable, and high-capacity transit along the **Major Transit Network** to support regional connectivity and regionally significant urban growth, including by investing in:
- Existing rapid transit lines and facilities, monitoring demand to determine when capacity relief measures may be required — in particular, study of the Expo and Canada Lines.
 - Limited-stop services on corridors where regular local routes are experiencing high ridership volumes, in support of building ridership for potential future rapid transit.
 - At-grade rapid transit, running in separated rights-of-way, to provide fast, reliable, and high-capacity service when conventional transit is unable to meet demand and when supported by local land use patterns.
 - Grade-separated rapid transit when forecasted demand indicates that at-grade technology will not provide sufficient capacity to meet demand.

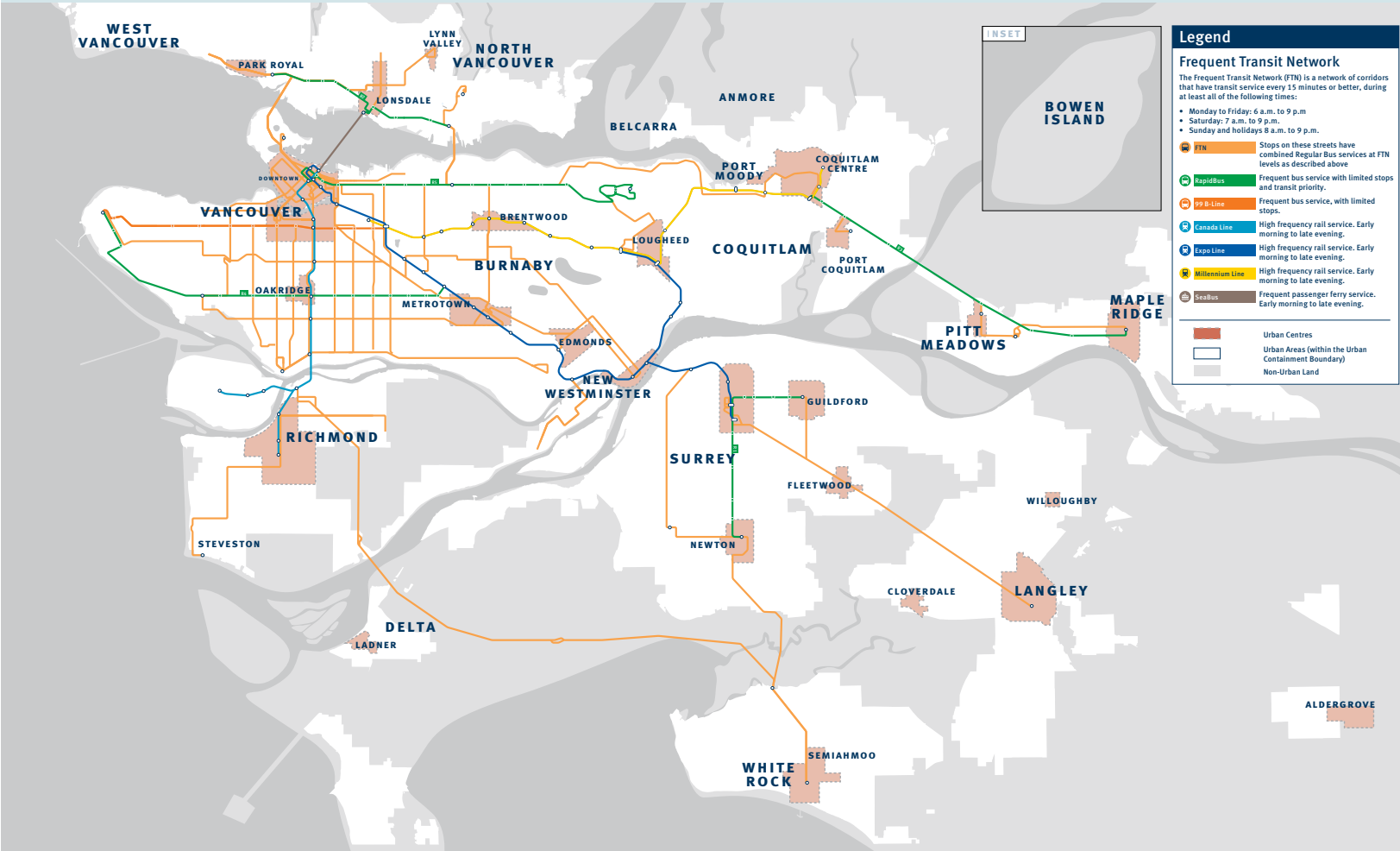
⁶ See “What Are Automated Vehicles (AVs)?” on page 64.

Frequent Transit Network

TransLink and Metro Vancouver have used the concept of a Frequent Transit Network (FTN) to help make transit a highly convenient option for people to choose for their daily travel. Along the FTN, transit vehicles (buses or trains) arrive at stops and stations every 15 minutes or more frequently throughout the day, from morning to evening, every day of the week. This gives customers the convenience of being able to step out of their door and walk up to a transit stop without needing to consult a schedule because they know they will never have long to wait. This also provides a high-quality transit service, which local governments and developers can plan around to help shape communities.

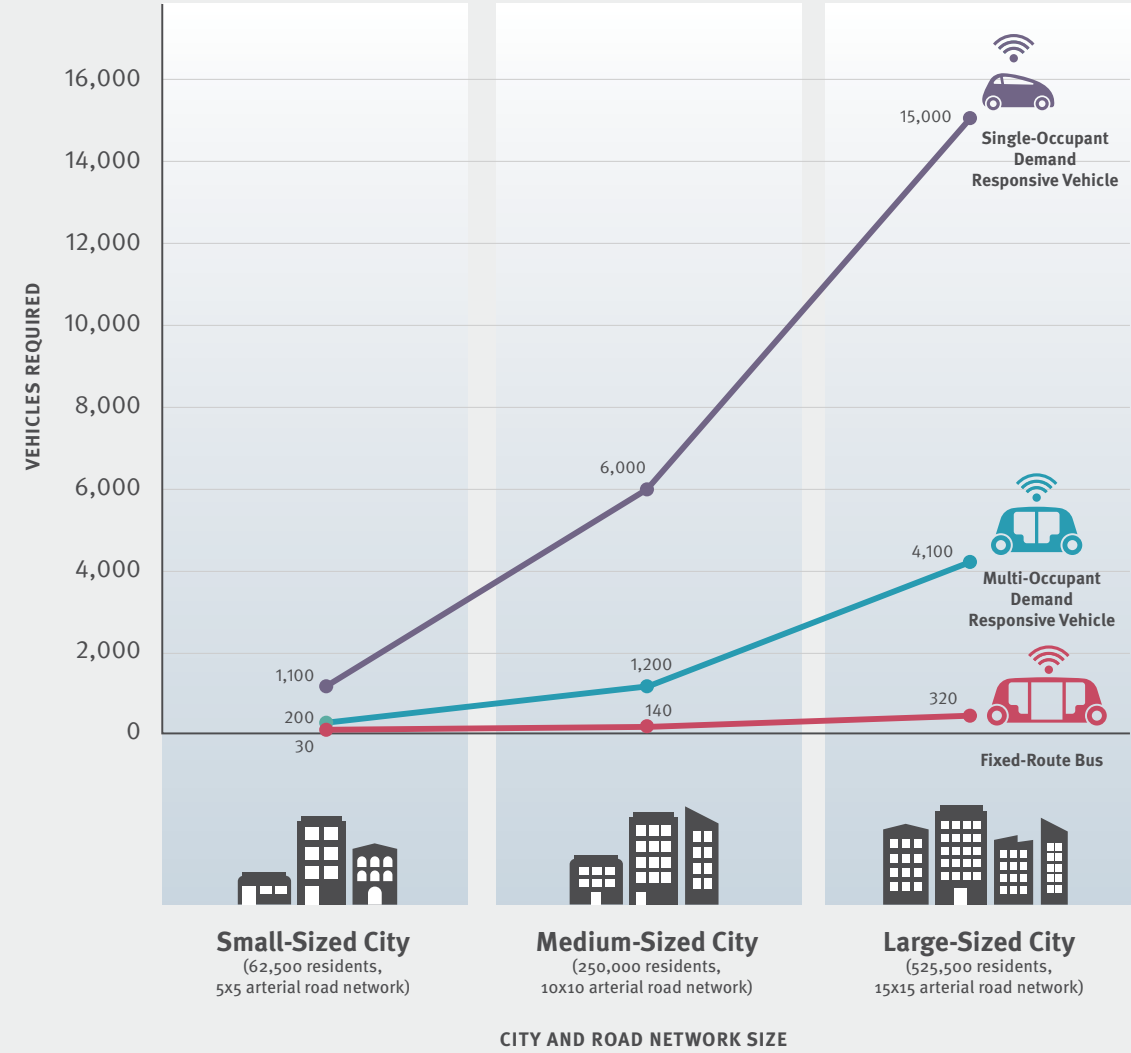
Between today and 2050, it is anticipated that service of FTN quality will expand to most urban areas of the region [see Action 1.2.3.] to be within walking distance of nearly all residents of Metro Vancouver. While this is great news for the travelling public, as this occurs, it means that the value of the FTN as an organizing framework for shaping land use becomes somewhat less significant. Therefore, within Transport 2050, greater emphasis is being placed on the newly introduced Major Transit Network (MTN) as the key organizing framework for regional co-ordination of transportation and land use. Likewise, Metro 2050 has introduced the concept of Major Transit Growth Corridors to help direct that portion of future growth and development occurring outside of Urban Centres [see Action 1.2.4.].

Map 9: Frequent Transit Network Today



Fixed-route frequent transit will be the backbone of our transportation system, even in an automated future. While advances in digital connectivity and automation are creating new opportunities for demand-responsive services, fixed-route transit will continue to be the backbone of our future public transportation system. As shown in Figure 8, for the same wait time, fixed-route transit (automated or not) can serve a given city of any size with far fewer vehicles than demand-responsive services. While on-demand microtransit may play a role by providing affordable options in low-demand times and places, and robo-taxis will play a role by providing more expensive demand-responsive service — as cities grow, dense networks of frequent fixed-route transit delivers the same customer experience much more cost-effectively, making it more affordable for most people. Taking advantage of automation to deliver this service even more frequently will further enhance this advantage.⁷

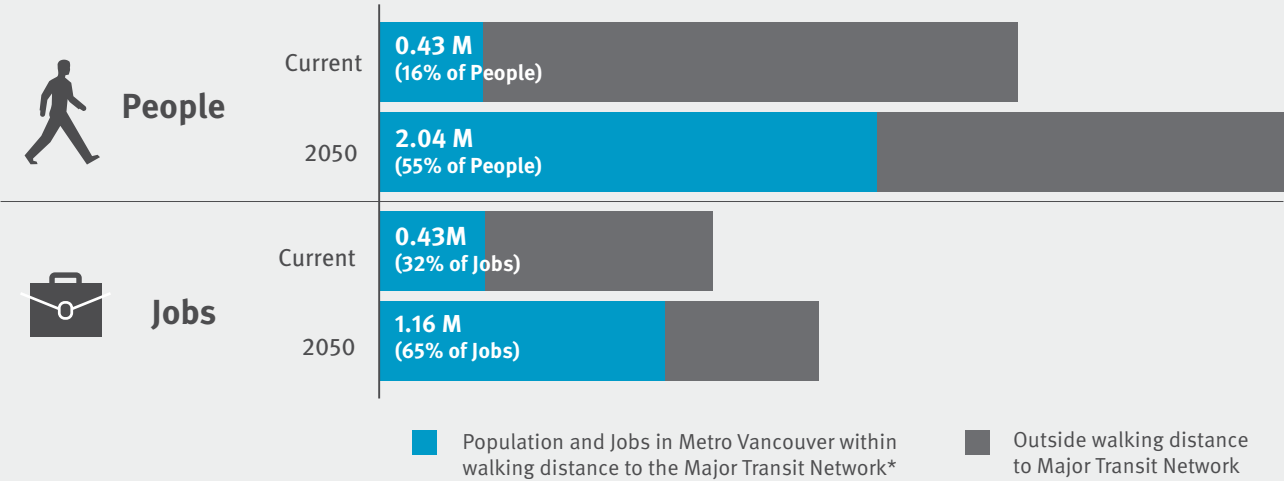
Figure 8: Number of Vehicles Required to Serve Any Trip within Different-Sized Cities, with a Maximum 10-Minute Wait Time



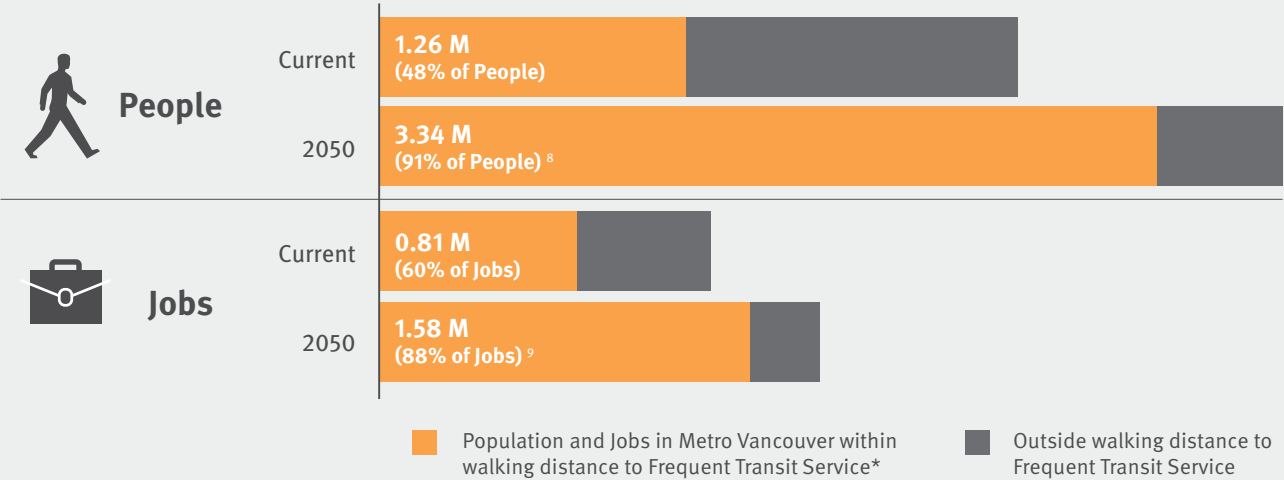
⁷ Matt Taylor, Nicolas Moss, Bunt & Associates, “Transportation Network Efficiency with Demand Responsive Services”, CITE 2021 Conference Presentation.

Figure 9: Residents and Jobs within Walking Distance from Different Transit Networks

Major Transit Network



Frequent Transit Service



Walking distance is considered as an 800-metre distance from the Major Transit Network (MTN). For current Frequent Transit, walking distance is considered as a 400-metre distance from the existing Frequent Transit Network (FTN) plus 800 metres from current MTN. Walking catchments for future Frequent Transit include areas with population and employment density of ≥30 per hectare in 2050, and areas accessible to the current FTN and future MTN within the regional Urban Containment Boundary.

By 2050, with significant expansion to transit across the region, nearly 55% of people and 65% of jobs would be within a 10-minute (or 800-metre) walk of the Major Transit Network, and nearly 90% of people and jobs would be within a 5-minute (or 400-metre) walk of frequent transit service.

⁸ This represents 94% of Urban Population.

⁹ This represents 92% of Urban Population.

Map 10: Reliable & Fast Transit Network (Today and 2050 Concept)

Map reflects Metro 2050 geographies as of 2021. Additional FTDA's may be designated over time

¹Surrey Langley SkyTrain is a confirmed project and highest regional priority. Remaining regional priorities expected to be delivered at grade and within dedicated rights-of-way, with the exception of (2) King George, (3) Willingdon/ Hastings/2nd Narrows, and (4) 41/49 Ave, which may require grade separation. Technology and level of separation to be determined through further studies.

⁵Burnaby Mountain Gondola and (6) UBC SkyTrain Extension to be delivered with grade separation.

⁷Minor extensions to this network may be required to support operational needs (e.g. new operating and maintenance depots) which may create additional opportunities to provide expanded access to transit service.

Legend

Major Transit Network

Existing / Committed

Capacity relief measures needed

Proposed New

Express /Interregional

Existing & Proposed New

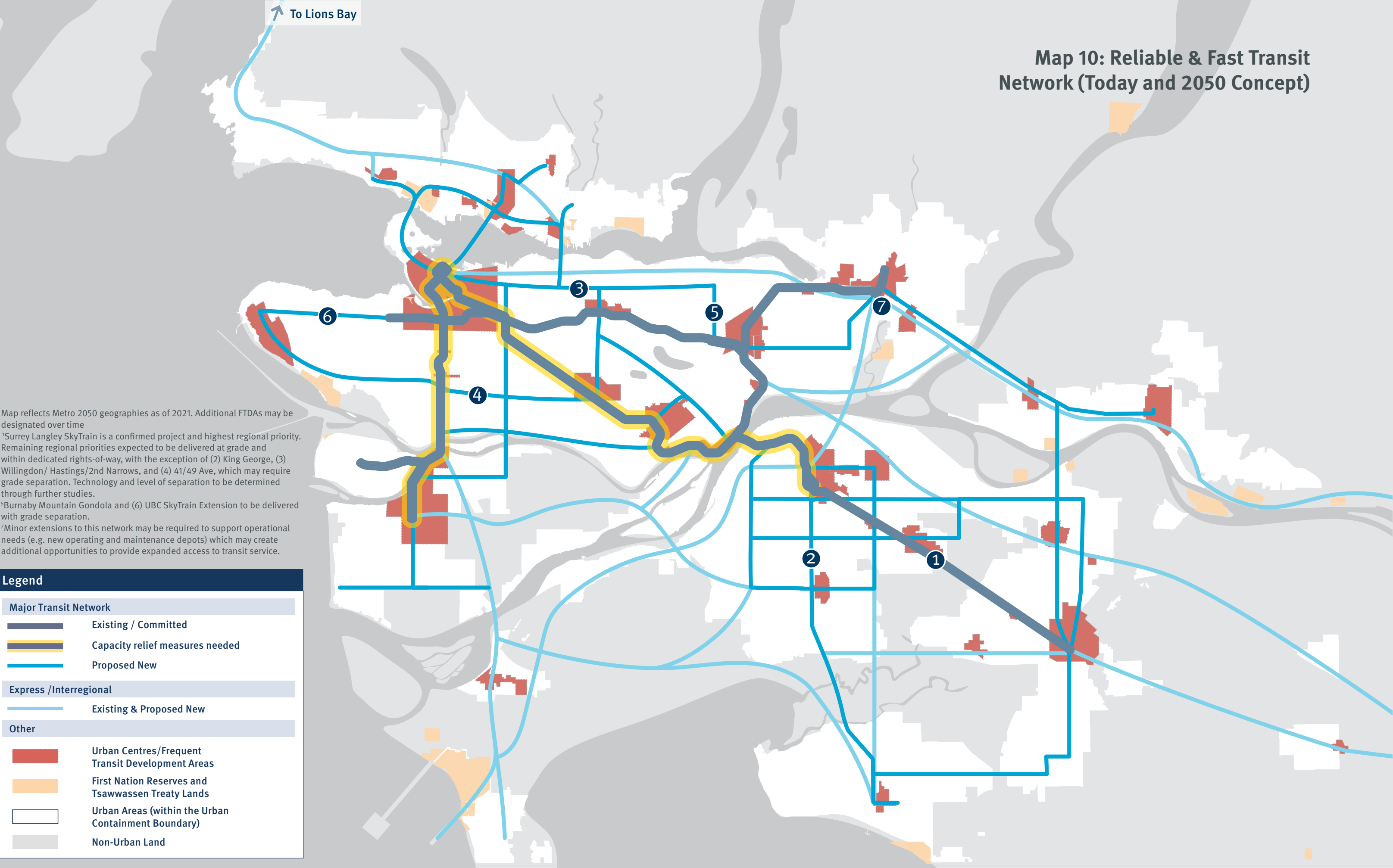
Other

Urban Centres/Frequent Transit Development Areas

First Nation Reserves and Tsawwassen Treaty Lands

Urban Areas (within the Urban Containment Boundary)

Non-Urban Land



From Metro 2050 (see: Draft Metro 2050)

Urban Containment Boundary

The Urban Containment Boundary is a stable, long-term, regionally defined area for urban development that protects agricultural, conservation, recreation, and rural lands from developments requiring utility infrastructure, and from auto-oriented, dispersed development patterns. Locating housing, regional transportation, and other infrastructure investments within the Urban Containment Boundary supports land development patterns that can protect food-producing land, reduce energy demand, reduce greenhouse gas emissions from commuter traffic, and secure land that stores carbon and helps communities adapt to climate change. Residential and employment infill development is encouraged within the Urban Containment Boundary.

Urban Centres

Urban Centres are intended to be the region’s primary focal points for concentrated growth and transit service. They are intended as priority locations for employment and services; higher-density forms; mixed residential tenures; affordable housing options; and commercial, cultural, entertainment, institutional, and mixed uses. Urban Centres are intended to emphasize place-making and an enriched public realm, and to promote transit-oriented communities where transit, cycling, and walking are the preferred modes of transportation. Urban Centres are priority locations for services and amenities that support a growing population.

Major Transit Growth Corridors

Major Transit Growth Corridors are areas along TransLink’s Major Transit Network where member jurisdictions, in consultation with Metro Vancouver and TransLink, may identify new Frequent Transit Development Areas (FTDAs). These corridors are intended to extend approximately one kilometre from the roadway centreline in both directions. The intent of these corridors is to provide an overall structure for the region in an effort to support the regional planning principle of directing portions of growth towards Urban Centres and areas around transit. Further local planning will be needed along these corridors to ensure that human settlement patterns support complete communities in an appropriate local context. The Major Transit Growth Corridors have been identified as good potential locations for regionally significant levels of transit-oriented growth based on a consideration of the following principles:

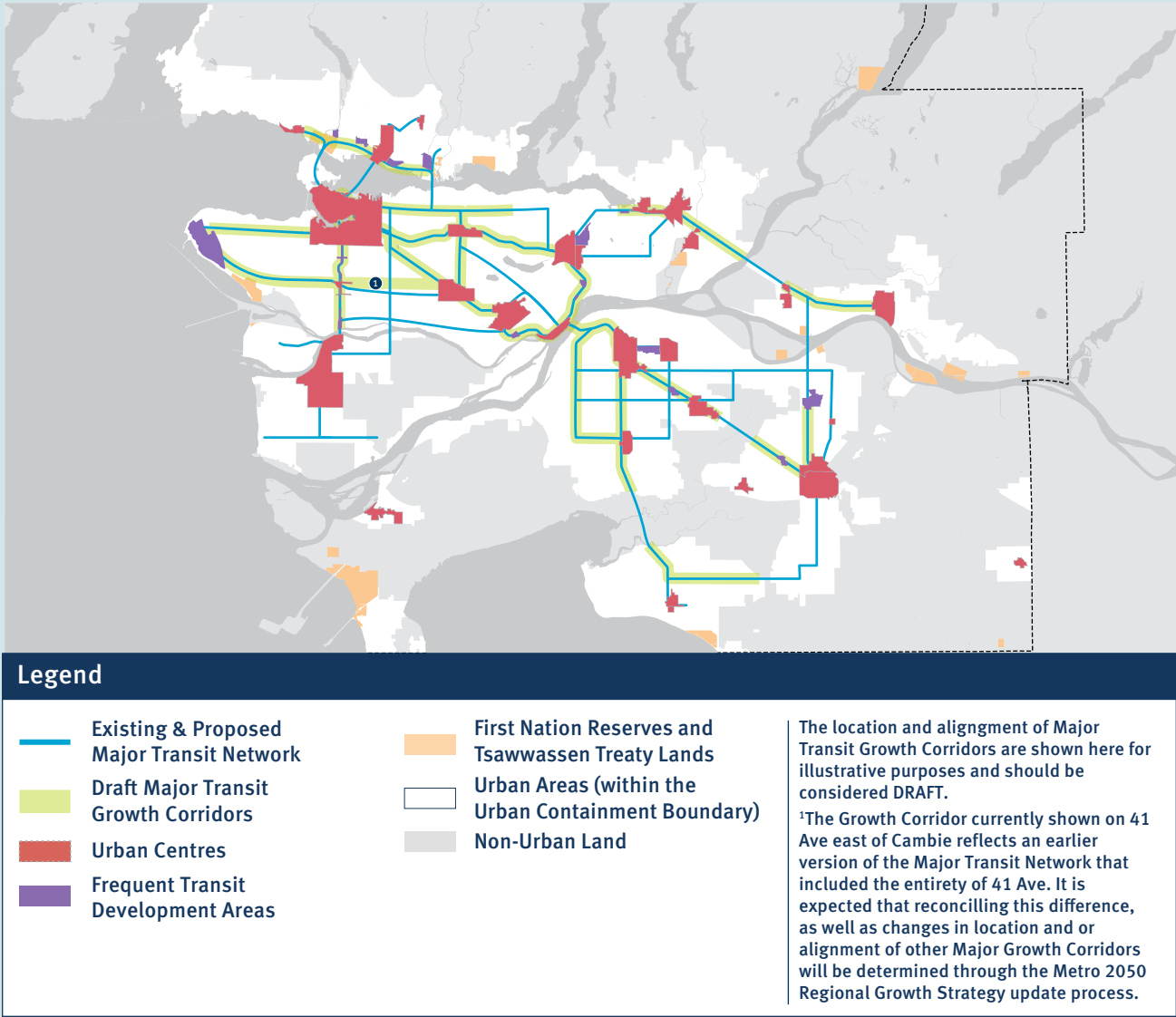
- Anchored by Urban Centres or FTDAs
- Connected by the Major Transit Network
- Generally resilient to natural hazards
- Accessible to jobs and services
- Walkable

Major Transit Growth Corridors are not an overlay; rather, they are an organizing principle to support the identification of FTDAs. The Major Transit Growth Corridors are also a growth monitoring tool to assess performance on transit-oriented development objectives.

Frequent Transit Development Areas

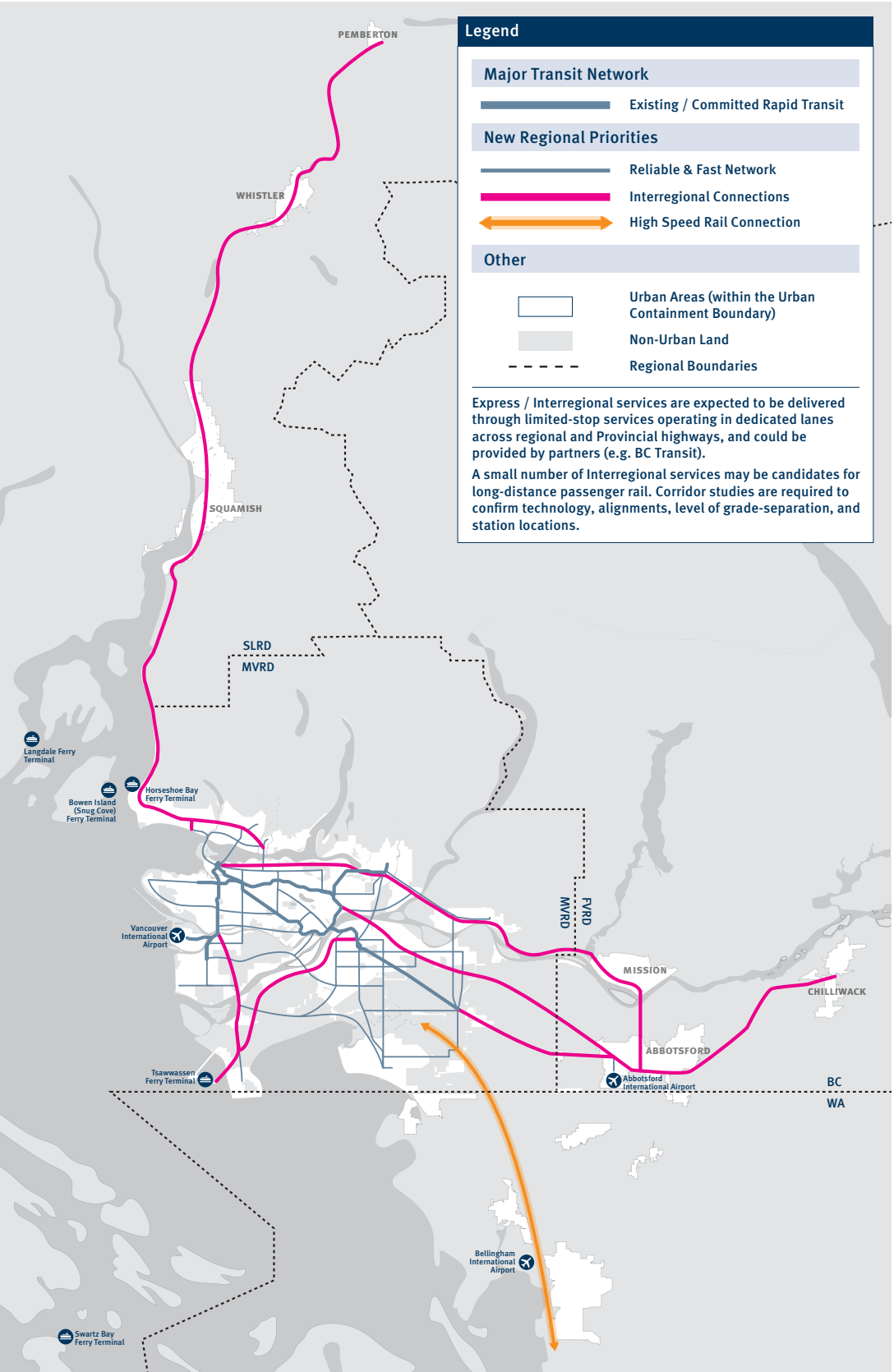
Frequent Transit Development Areas (FTDAs) are intended to be additional priority locations to accommodate concentrated growth in higher-density forms of development. They are identified by Metro Vancouver member jurisdictions and located at appropriate locations within the Major Transit Growth Corridors. FTDAs complement the network of Urban Centres, and are characterized by higher-density forms of residential, commercial, and mixed uses, and may contain community, cultural, and institutional uses. Urban design for these areas promotes transit-oriented communities where transit, cycling, and walking are the preferred modes of transportation. Identifying FTDAs within the Major Transit Growth Corridors 1) provides greater certainty and integration between local, regional, and transit plans, and 2) supports transit-oriented development planning across jurisdictional boundaries.

Map 11: Major Transit Growth Corridors from Metro 2050



- 1.2.5. Expand the network of **express transit** connections that are direct, make limited stops, and are fast, in order to provide convenient and competitive travel times compared to driving over longer distances.
- Develop a network of dedicated Express routes throughout Metro Vancouver, including on regional or provincial highways. Express and interregional services (delivered primarily by buses, including automated buses eventually) travelling in dedicated lanes — and supported by other transit priority measures — will be faster and more competitive with private vehicles.
 - Provide transit connections between Metro Vancouver and the Fraser Valley, Sea to Sky corridor, Sunshine Coast, Vancouver Island, and Washington state that are seamlessly integrated, accessible, and convenient.
 - Maintain and enhance existing heavy passenger rail service by supporting investments that could increase freight and passenger rail reliability, including additional capacity and span of service along existing and potential future passenger rail corridors.
 - Protect future opportunities to expand interregional heavy passenger rail service by protecting or securing access rights to existing and future rail corridors, while protecting capacity for existing and future freight rail service needs.
 - Support planning for a potential high-speed passenger rail service between British Columbia, Washington, and Oregon; ensuring that stations are located in Urban Centres and fully integrated with the region’s Major Transit Network; and that any investments in rights-of-way and infrastructure also help to advance regional rapid transit and passenger rail objectives.
 - Encourage and enable passenger-only ferry services that provide more direct access and connectivity between high-demand locations within the region and destinations beyond Metro Vancouver.
 - Work with the emerging urban air transit sector to ensure that the operation of any urban air transit services within Metro Vancouver are contingent on the industry demonstrating acceptable solutions to this region’s key concerns relating to equitable and affordable access, noise, emissions, energy consumption, safety, and livability.

Map 12: Interregional Transit Connections (2050 Concept)



Strategy 1.3: Make it convenient for all households to make the occasional car trip without needing to own a car.

The ambitious land use planning and transportation actions set out in Metro 2050 and Transport 2050 will enable significant strides in making transit the preferred choice for most longer trips, and walking, rolling, or cycling the preferred choice for most shorter trips. However, there will always be trips that can’t conveniently be made by active transport or transit.

For some people, automobiles play an occasional role rather than a daily role — carrying groceries, the airport trip with lots of luggage, or the trip to buy new furniture or to visit a trail. Faced with the occasional need for an automobile, nearly 25% of households in Metro Vancouver in this situation still choose to own a car.¹⁰ For this, they need to incur the hassle and expense of car depreciation, parking, maintenance, and insurance, simply for occasional use. Supporting the expansion of shared-use autos (carsharing, taxis, ride-hailing, rental agencies) helps provide more ways for people to conveniently make the occasional car trip without needing to own a car.

Actions

- 1.3.1. Take an integrated and consistent approach to **managing taxis and ride-hailing services** within the South Coast region, ensuring a sufficient supply of passenger-directed vehicles to accommodate growing demand.
- 1.3.2. Use regulations, incentives, and direct public sector investment to support the rapid scaling and growth of **one-way and two-way carsharing services** in all parts of the urban area within Metro Vancouver.
- 1.3.3. Provide a sufficient supply of **dedicated parking and charging infrastructure for shared vehicles** at dynamically managed curbsides in Urban Centres and Frequent Transit Development Areas; at transit stops and stations; in new and existing civic and community facilities, multi-family residential buildings, and commercial buildings; and at key destinations for accessing nature.
- 1.3.4. Use regulations and public investment to prioritize a rapid and near-term transition to **zero-emission carshare vehicles, taxis, and ride-hail vehicles**, all of which are driven more kilometres per year than the average personally owned vehicle.

¹⁰ “2017 Trip Diary”, TransLink, December 21, 2021, https://public.tableau.com/app/profile/translink/viz/Trip_Diary_2017/TripDiary2017.

- 1.3.5. Use **pricing, regulations, and public investment** to:
 - a. Encourage the rollout of automated vehicles in this region primarily as shared or publicly accessible vehicles, rather than primarily as personally owned vehicles, in order to increase access to this technology for people of all incomes. 🌐
 - b. Decrease the incidences of deadheading (empty vehicles travelling to pick up next fares).
 - c. Increase efficient pooled rides (carpooling) in shared modes.
 - d. Support a rapid transition to universally accessible carshare vehicles, taxis, ride-hail vehicles, and eventually robo-taxis (or automated vehicle taxis) — so that they are widely available for people with specific disabilities who require them. 🌐

The region is home to many pioneering carsharing and ride-hailing providers; as these vehicles are heavily used, transitioning them to zero emissions is a priority



Strategy 1.4: Seamlessly connect different transport services both physically and digitally.

Physically locating different transportation choices right next to each other makes all of them more convenient. For example, having a taxi, carshare, or bikeshare waiting for you right where you step off the bus takes some of the stress and friction out of making connections between modes and lets us take advantage of the best that each mode has to offer.

In addition to reducing the need for unnecessary travel, digital tools can enable more seamless travel across modes and services and reduce “pain points” in the transportation experience, both for people and for businesses — especially for trips involving different modes and accessing shared vehicles. This strategy envisions a future where trip planning, booking, and payment for any transport mode or service is seamless — from a single app or phone call. This open, interoperable ecosystem of mobility on-demand services is referred to as Mobility-as-a-Service (MaaS).

Finally, as we become more dependent on digital services for our daily needs, including for transportation, we need to consider that not everyone has access to this technology; we’ll need to pay careful attention to policies that promote digital access so that they don’t create unforeseen or negative consequences for disadvantaged groups, especially lower-income households.

Actions

- 1.4.1. Transform all transit stops and stations — from neighbourhood bus stops to major terminals — into multimodal **mobility hubs** that enable seamless transfers between different transportation options. Update design guidance for these mobility hubs to specify (based on the surrounding environment and transportation demand) the appropriate mix, scale, and spatial priority for each transportation option, including:
 - a. Walkway connections and public realm amenities, in recognition that good transit access requires a high-quality, supportive pedestrian environment and public realm.
 - b. Bikeway connections.
 - c. Secure and convenient storage facilities that accommodate a variety of micromobility devices.
 - d. Docking stations, hubs, and charging for personal and shared micromobility services.

- e. Priority parking and charging for carshare vehicles.
 - f. Pickup and drop-off spots for taxis, ride-hailing, and “kiss and ride”.
 - g. Parcel lockers to allow convenient pickup of deliveries while transitioning between modes.
- 1.4.2. Support industry and municipalities in the development of **neighbourhood logistics hubs**, where appropriate, to better enable the consolidation of parcels in central locations for pickup by customers or the use of smaller, lighter, emissions-free freight vehicles for final mile deliveries in low-speed and pedestrianized zones, per Action 5.1.3.
- 1.4.3. Enable the development of integrated **smartphone applications** that allow for trip planning, booking, payment, and customer rewards for all mobility services from a single interface.
 - a. Advance development of an urban data exchange platform, receiving data related to trip planning from transport service providers, and making it available to app providers (see 2.3.4).
 - b. To give customers the best range of choices and services, support an open, interoperable, and competitive Mobility-as-a-Service ecosystem where all mobility service providers are required to make their essential real-time trip-planning, payment, and booking functions available to the urban data trust.
 - c. Provide appropriate user training and ensure low-tech trip planning, booking, and payment options that do not require a smartphone or a credit card remain available, to ensure equitable and resilient access.
- 1.4.4. Work with **digital connectivity** service providers and authorities regulating communications service providers to:
 - a. Enable Wi-Fi and cellular connectivity throughout the service area for ubiquitous internet access and communication services.
 - b. Ensure oversight of digital assets in the region, including establishing cost-sharing agreements, ownership, and maintenance contracts to ensure long-term viability.

Access to Nature

What we heard: Through Transport 2050 engagement, we heard that residents of Metro Vancouver highly value this region’s natural areas, such as parks and forests.

Access today: Currently, just 11 of 22 of Metro Vancouver’s Regional Parks are accessible by transit, making them largely out of reach for most people without a personal vehicle. We also know that parking at some key regional and provincial parks is challenging, due to high demand. Ultimately, this is an equity issue, as not being able to access a car shouldn’t be a barrier to taking advantage of the spectacular parks and natural areas that are a key attraction of living in Metro Vancouver.

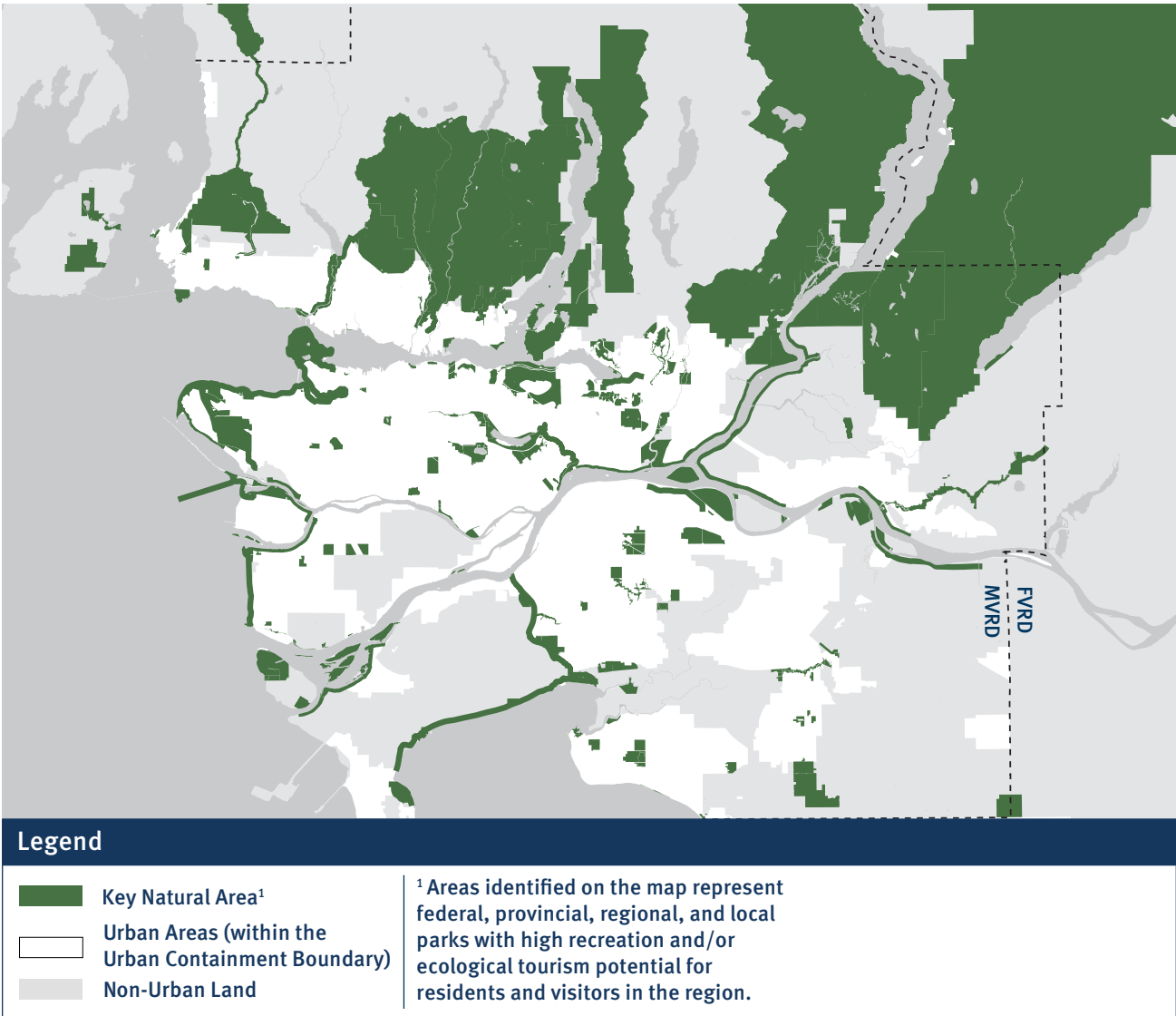
What we are planning: Transport 2050 includes actions that make it easier for everyone to get to our beautiful parks and forests, including the following:

- **Cycling & Micromobility:** Co-ordinate the implementation of a Regional Cycling Network to provide safe and convenient cycling connections that link up Urban Centres with regionally significant parks and natural areas [Action 1.1.4.b], as well as the provision of secure bike parking and electric charging stations for bicycles and micromobility devices for when people reach their destination [Action 1.1.4.c].

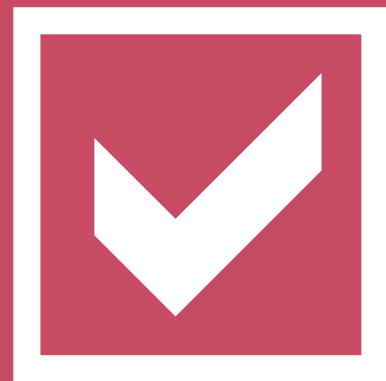
- **Transit:** Make investments and network decisions to support more convenient travel by specifically including parks and natural areas [Action 1.2.2.a]. Recognizing that there are attractive natural areas outside Metro Vancouver, we will work with partners to expand the network of seamless and convenient interregional transit connections to destinations outside our region [Action 1.2.5.].
- **Driving:** Ensure everyone has convenient access to the occasional car trip without needing to own a car, including by providing dedicated parking and electric charging for shared vehicles at key destinations to support accessing nature [Action 1.3.3.].

Where we are planning for: Map 13 (right) highlights these key “access to nature” destinations within the region, from the spectacular North Shore Mountains to the beautiful beaches overlooking the Salish Sea.

Map 13: Key “Access to Nature” Destinations



A key priority of this strategy is to make it easy to access nature with sustainable transportation



GOAL TWO

Reliable Choices for Everyone



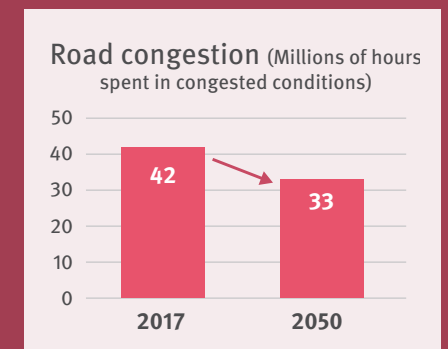
THE PROBLEM TODAY

“Getting where I need to go takes too much time, is too far from my home, and is often unreliable — taking much longer than I had planned.”



WHERE WE WANT TO BE

We all have reliable choices that get us where we need to go on time such that, by 2050, we are all spending 20% less time stuck in congestion compared to today.¹¹



One of the most frustrating aspects of the transportation experience for people and businesses in our region is the unpredictability of travel times. Whether travelling by bus or by car, getting stuck in traffic costs people in time and stress — and has significant negative impacts on the Metro Vancouver economy.

Improving travel time reliability over the next 30 years will be an enormous challenge, requiring us to think creatively, especially as we expect to welcome around one million more people to the region by 2050. We also expect that the addition of more electric vehicles — and, later, automated vehicles — will increase traffic, given the lower operating costs. If we don’t take bold action to make more efficient use of our existing road infrastructure, congestion could get up to three times worse than today. In a growing region, we’ll

need to accommodate all these extra trips using the same road space as today.

The following pages describe what it will take to create a future where **people and goods spend 20% less time stuck in congestion than today:**

- Extensive transit priority measures to ensure that **transit is reliable** and doesn’t get stuck in traffic congestion.
- A suite of measures to increase the **reliability of goods** movement, including shortening freight trips through more co-ordinated industrial land use planning, consolidating freight loads, shifting freight modes off of roads wherever viable, shifting freight times to less busy periods wherever possible, and introducing physical or regulatory freight priority measures where still needed.

¹¹ The use of “today” refers to congestion levels pre-COVID, in 2019, which will be the baseline for comparison going forward. This level of congestion reflects Phase 1 engagement results, indicating that congestion is a priority issue and that 2019 levels were unacceptable for most people.

- Application of demand management tools and digital technology, including the introduction of an advanced mobility operating system capable of co-ordinating all streets, signals, lanes, and trip options to make **driving and parking more reliable**. This is especially important as we prepare for the arrival of automated vehicles.
- Maintaining the transportation assets and infrastructure we rely on every day in a **state of good repair** is essential to reducing disruptions and delays, making travel more reliable.

While the strategies described in this section will be a good start, ultimately, they may not be enough to reduce congestion compared to today's levels, especially as the region grows and as electrification and automation lower driving costs and encourage even more car travel.

A region-wide approach to **road usage charging**, as proposed by the Mobility Pricing Independent Commission in their 2018 report, remains one of the most promising tools to reduce traffic congestion and improve travel time reliability for people and goods travelling in and through our region. Road usage charging can help manage available transportation capacity by encouraging users making discretionary trips, or users who have the flexibility to change how, where, and when they travel, to travel during less busy times or on less busy routes, making space for users making non-discretionary trips with less flexibility (e.g., time-sensitive deliveries). A well-designed system would have the additional benefit of reducing inequities in how transportation is priced today. It could also reduce GHG emissions and air pollution, and provide a long-term, sustainable source of revenue for transportation investments.

A transformative policy of this magnitude does not come without its challenges. While there are real concerns about growing congestion in the region, there are also real concerns about the impacts that a road usage charge might have on households and businesses. Ultimately, further dialogue and greater levels of public and political support are needed before a region-wide approach to road usage charging could be more seriously contemplated for the Metro Vancouver region.

Over the longer term, the region will need to keep some form of road usage charging available in its policy toolkit in order to manage the significant traffic increases and congestion challenges associated with the widespread adoption of electric vehicles initially, and then automated vehicles — anticipated within the time horizon of Transport 2050. As such, regional policy-makers will carefully monitor the arrival and scaling of these technologies as well as traffic congestion and its impact on people and goods in order to determine if, when, and how to introduce a region-wide approach to road usage charging.

These conditions are not expected to materialize within the next 5–10 years. But in order to be prepared, more detailed planning and policy discussions with Indigenous Nations, local governments, and the provincial government should occur during this period in order to establish a clear regulatory framework in British Columbia and Metro Vancouver — in particular, well in advance of the arrival of Level 4 automated vehicles.

In the meantime, the strategies and actions described in this section can be deployed to ensure that people and goods continue to move as reliably as possible.



On Resilience & Reliable Choices

Future shocks and stresses could be disruptive and potentially hinder the reliability of the transportation system. For example, power disruptions could impact traffic signalling and real-time travel information communications. Flooding could inhibit road travel. Key strategies in this section that aim to improve reliability may also mitigate against future shocks.

To better understand what tomorrow might bring, Metro Vancouver and TransLink partnered to develop the *Regional Long-Range Growth and Transportation Scenarios* report. This report examines four plausible futures for Metro Vancouver, which can help us identify measures to ensure that both transportation and the region are more resilient.

Strategies and Actions

Strategy 2.1: Make transit more reliable.

One of the biggest barriers to more people using transit is that they feel it can be unreliable. To make transit an attractive choice for most trips over a few kilometres, it needs to be reliable and time-competitive with driving. However, traffic congestion, which is a top concern among residents, is the primary factor in slowing transit and making travel times unpredictable.

In 2020, 80% of bus routes were slower than they were in 2015 due to traffic congestion and lack of transit priority in critical areas. As a result, each year, the region spends more and more trying to maintain the current frequency of our buses — now spending more than one out of every 10 transit service dollars to respond to delays resulting from congestion. With congestion increasing, we'll need to prioritize transit movement over general-purpose traffic on the region's roads so transit can bypass congestion, and remain as a reliable transportation choice for everyone.

Actions

- 2.1.1. Provide **widespread priority for transit** on frequent bus corridors to ensure that people on buses are not stuck in traffic, and that they can travel quickly and reliably at all times of the day.
- a. Advance the most effective and appropriate bus priority measures for each context, with priority to frequent bus corridors serving the areas of highest need and with the biggest delay.

b. Provide dedicated bus lanes in corridors with the highest frequency of service and greatest passenger delay, and deploy other complementary priority measures such as queue jumpers and bus bulbs to reduce delay at intersections and bus stops along frequent bus corridors.

c. Expand hours of operation of bus priority lanes to ensure all bus customers experience reliable journeys.

d. Where space is a constraint on the most critical bus corridors, expand transit priority by considering whether general-purpose traffic can be accommodated on parallel corridors, or whether parking and loading can be accommodated on perpendicular or parallel roadways or off-street facilities.

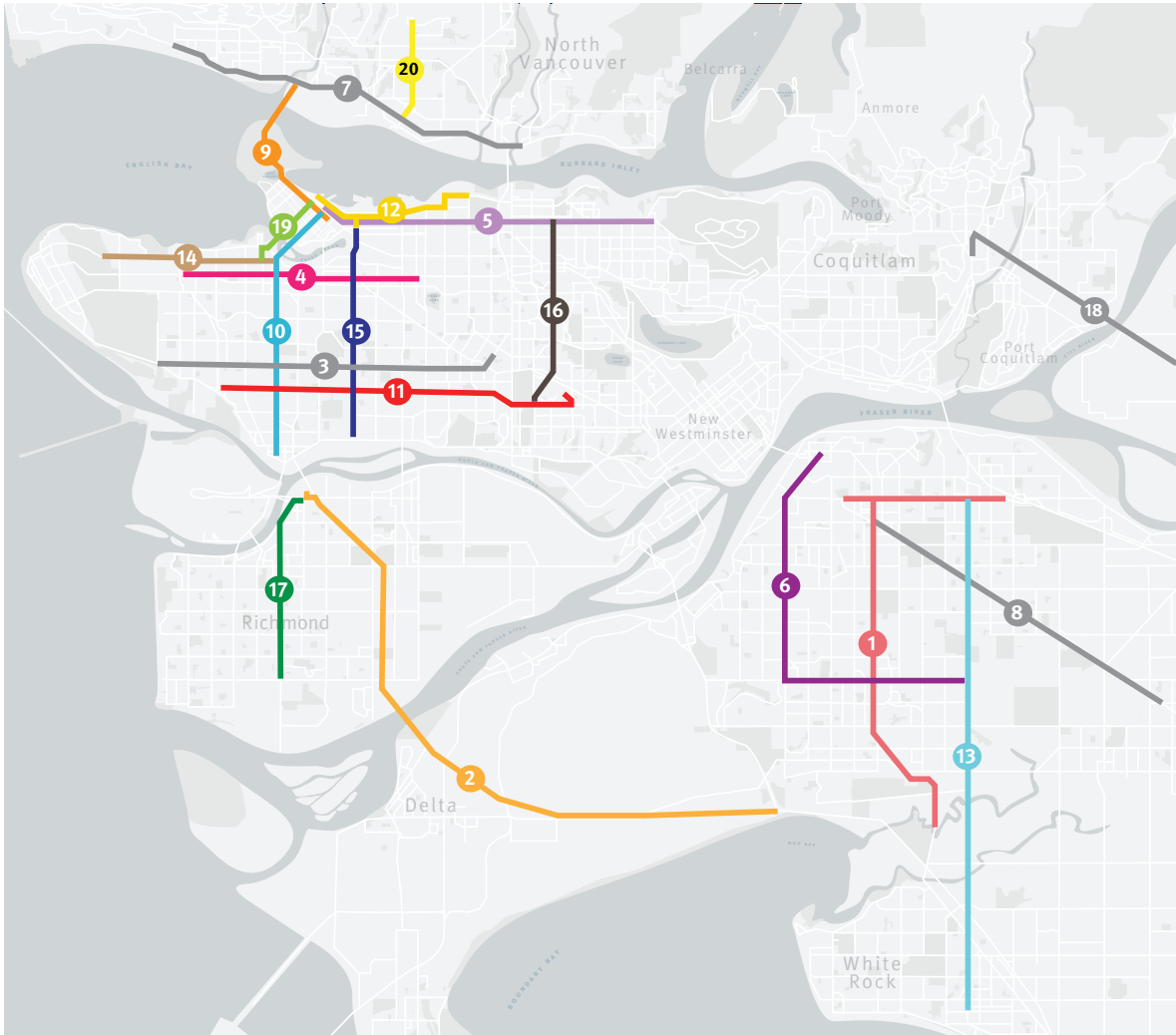
e. Minimize overall person delay by considering where higher levels of delay for general traffic can be accepted, to allow for reallocation of road space from cars toward transit priority.
- 2.1.2. In advance of rapid transit investment, and as part of the prioritization of rapid transit corridors, ensure that the appropriate road authorities have committed to provide the **dedicated transit lanes** that higher-order transit service requires in order to be reliable and fast.
- a. Deploy lower-cost interim bus priority measures on future rapid transit corridors to dedicate space and to build ridership in support of future higher-order transit investments.

b. Depending on the corridor and the proposed level of investment, existing general-purpose traffic lanes or parking space can be dedicated to transit-only lanes.



Bus priority lanes, such as this queue jump lane at Edmonds Street in Burnaby, help buses avoid congestion, improving reliability for transit customers

Map 14: Top 20 Bus Corridors Contributing to Passenger Delay




Bus corridors most contributing to travel-time delays, ranked by severity of passenger delay (in person-hours)

| | | |
|----------------------------|--|-------------------|
| 1 King George Blvd/104 Ave | 8 Fraser Hwy | 14 West 4th Ave |
| 2 Hwy 99 | 9 Georgia St/Lions Gate Bridge | 15 Main St |
| 3 East & West 41st Ave | 10 Granville St | 16 Willingdon Ave |
| 4 Broadway | 11 East & West 49th Ave | 17 No. 3 Rd |
| 5 Hastings St | 12 Pender/Powell/Cordova/Dundas/McGill | 18 Lougheed Hwy |
| 6 Scott Rd/72nd Ave | 13 152nd St | 19 Burrard St |
| 7 Main/Marine Dr | | 20 Lonsdale Ave |

Source: 2019 Bus Speed and Reliability Report, TransLink
In some cases, we divide long streets into smaller corridors based on the primary sections of delay (e.g. Broadway only from Commercial to Alma). In other cases, we combine two or more streets based on dominant transit routes and customer travel patterns (e.g. King George Blvd/104 Av, Scott Rd/72 Ave)

Through TransLink’s 2019 Bus Speed and Reliability Report, the above corridors were identified as those currently contributing most significantly to person-hours of delay. Bus speed and reliability are being monitored on an ongoing basis, to support TransLink and the region in developing bus priority plans to support making transit more reliable. Between now and 2050, additional corridors — including along the Reliable and Fast Transit Network and roadways where frequent transit service operates — will also require transit priority measures to ensure bus speed and reliability is maintained and improved so that transit is a convenient and reliable choice for most longer trips. (Source: TransLink, “2019 Bus Speed and Reliability Report”, 2019, https://www.translink.ca/-/media/translink/documents/plans-and-projects/bus-projects/bus-speed-and-reliability/2019_bus_speed_and_reliability_report.pdf)

- 2.1.3. Co-ordinate the development of **transit priority measures** with consideration of other street uses (based on the street space allocation guidance in Strategy 6.8), recognizing that transit corridors are often also important streets for other modes. The region’s streets may carry significant volumes of regional auto traffic, carry important regional freight, have sections of vibrant local businesses with significant local access, loading and unloading needs, or be a critical link in the Major Bikeway Network.
- 2.1.4. Explore the potential of different **management and enforcement tools** — such as ensuring road changes don’t adversely impact transit vehicles and traffic doesn’t obstruct transit priority lanes — so that transit vehicles are not delayed due to general-purpose traffic. If required, implement changes to the *Motor Vehicle Act* and the *South Coast British Columbia Transportation Authority Act*.
- 2.1.5. When planning and designing transit priority, carefully consider how **marginalized and disadvantaged populations** may be positively or negatively impacted, and work towards achieving an optimal balance between accessibility, convenient access, and reliable and fast service. 

Strategy 2.2: Make goods movement more reliable.


Congestion is a top concern for the people and businesses involved in moving goods and services around and through our region. The actions under Goal 1 that help increase the use of transit, walking, biking, and rolling can increase reliability for these commercial drivers by reducing congestion on the road. Pursuing opportunities to move more gateway freight by rail and water wherever viable is also essential to help reduce gateway truck traffic on the region’s roads, and to maintain the region’s role as a reliable and competitive multimodal trade gateway between Canada and Asia-Pacific.

Additionally, compounding congestion problems for commercial vehicles is the fact that delivery schedules are driven largely by customer and business requirements, with an increasing emphasis on just-in-time delivery supply chains and express shipping. There are also municipal regulations that restrict the times of day when deliveries can be made — often directing them to the most congested times of day when people are travelling to and from work or going about their personal business. Shifting times for goods movement and deliveries to less busy periods, while also introducing physical or regulatory priority measures for freight movement, where needed, can help make trips more reliable.

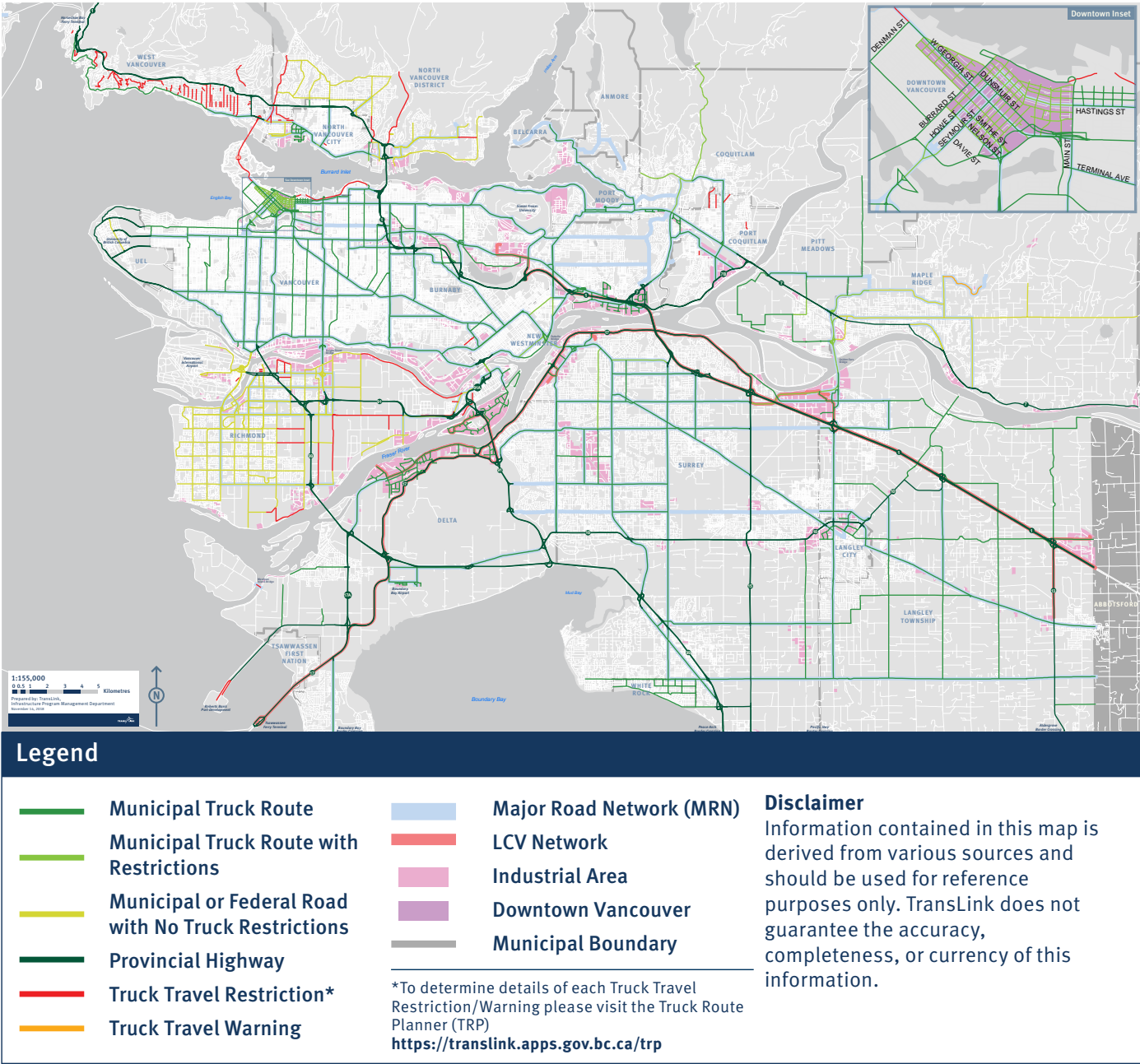
The region is also facing a critical shortage of industrial land. Managing the growing demand and limited supply of industrial lands will require balancing different industrial and commercial needs (e.g., warehousing, distribution, transportation access) and co-ordinating efforts to protect and intensify existing industrial lands at a regional level, per the industrial land policies in Metro 2050. Not only is this shortage limiting opportunities for business growth and expansion that are critical for local economic development, but it is also pushing many businesses and their suppliers farther away from each other into less ideal locations in the Metro Vancouver region or, in many cases, outside of the region or the province. These longer distances result in more freight travel, more traffic, more emissions, more expensive supply chains, more expensive consumer goods, and a less competitive business environment.

To enhance freight reliability, efficiency, and competitiveness, the actions in this strategy support five key moves to shorten freight trips, consolidate freight loads, shift freight modes, shift freight times, and introduce freight priority measures where appropriate.

Actions

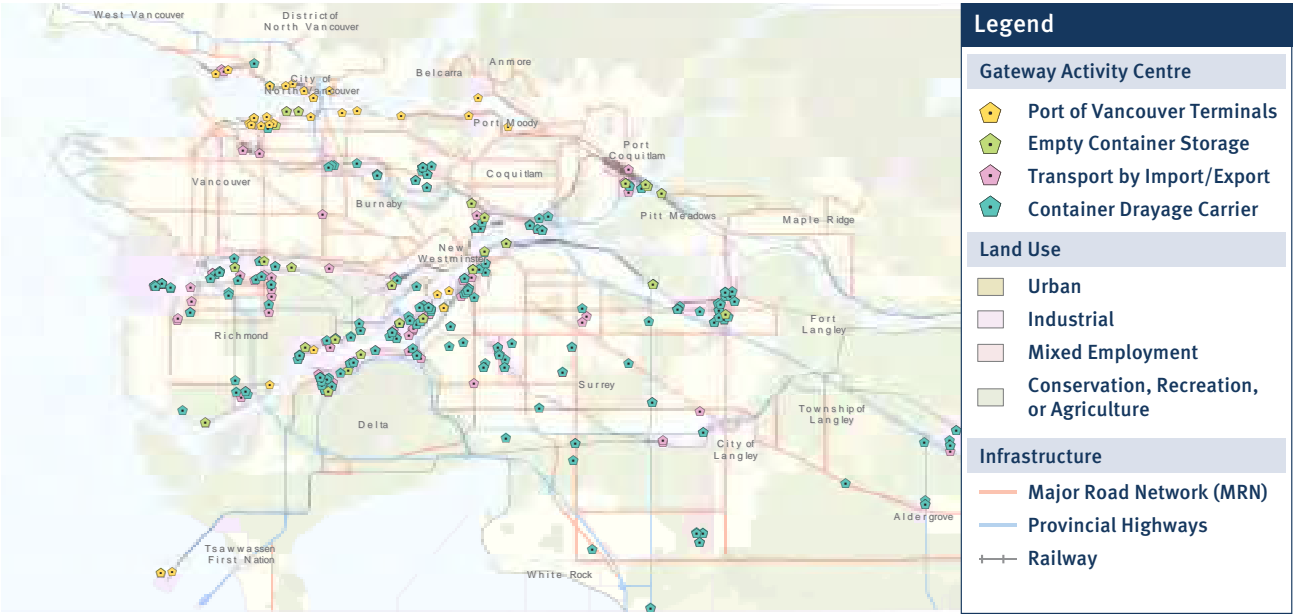
- 2.2.1. Co-ordinate the transportation and **land use needs of goods movement, industry, and agricultural land users** in order to reduce the distance of freight journeys:
 - a. Protect the existing supply of accessible industrial land, and especially of trade-oriented lands, through land use planning, investment, engagement with Indigenous Nations, and other policy measures as specified in Metro 2050 and the Regional Industrial Lands Strategy. 
 - b. Protect urban industrial land near final destinations that could help facilitate consolidation and transition to last-mile delivery vehicles, where appropriate.
 - c. Protect and enhance rail rights-of-way and access points to navigable waterways in order to preserve their potential for goods movement and industrial uses, as specified in Metro 2050.
 - d. Explore opportunities to co-locate import and export facilities in order to reduce the need to store empty containers and transport them around the region.
 - e. Protect access for agricultural users on key corridors in order to facilitate equipment movement, safe and efficient operations with good animal welfare, or to deliver produce to markets.

Map 15: Industrial Lands from Metro 2050 and Truck Routes, including Long Combination Vehicle Network



- 2.2.2. Encourage **consolidation of goods and deliveries** to make most efficient use of available capacity
- Work with partners to expand and enhance Long Combination Vehicles (LCVs) operations in Metro Vancouver in a manner that protects public safety and our infrastructure to the greatest extent possible, in close alignment with provincial policies and guidelines for LCVs.
 - Explore opportunities to facilitate the use of LCVs, including to identify safe and accessible locations for coupling and decoupling LCVs, and future-proofing infrastructure for LCVs to accommodate automation and other emerging technologies.
 - Explore a range of tools including education, incentives, and per-delivery charges for consumers to encourage them to make combined delivery orders, thereby reducing inefficiencies.
 - To reduce the number of trips required, engage with developers and building managers to co-ordinate delivery infrastructure (such as parcel lockers) and service plans (the goods movement equivalent of TravelSmart employee travel plans) that consider consolidation and collaborative delivery arrangements.
 - Support operators of commercial freight vehicles to supply real-time data via Application Programming Interface (API) to the urban data trust (including vehicle location, available capacity, and the price for customers to book that capacity) in order to enable Mobility-as-a-Service for freight, per Action 2.3.4.d.

Map 16: Gateway Trade Facilities and Corridors



Source: Metro Vancouver, “Metro 2050 — Regional Growth Strategy — draft”, June 2021, <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/DraftMetro2050.pdf>

- 2.2.3. **Optimize road capacity**, while supporting freight by rail, sea, and air, to reduce the time that goods movement vehicles spend stuck in traffic.
- a. Explore opportunities to implement freight priority measures — both physical and demand-management based — on key corridors and at key bottlenecks on the Regional Truck Route Network in ways that do not increase general-purpose traffic or impact the reliability of active transportation or transit.
 - b. Make better use of road capacity during off-peak hours by creating a regulatory environment that encourages businesses to opt for more off-peak pickup and delivery in ways that don't negatively impact community livability.
 - c. Support priority infrastructure investments necessary to accommodate long-term growth in gateway trade while minimizing any negative impacts on local communities and the environment in support of regional objectives.
 - d. Increase the consistency of truck route designation across the region through collaboratively developed design guidance for the Regional Truck Route Network, including a clear hierarchy of routes that will support goods movement. This process should consider equity to ensure that disadvantaged groups do not proportionally experience negative impacts from these routes. 🌐
 - e. Explore moving more containers by rail directly from marine container terminals to inland transload facilities to reduce drayage space and transportation requirements within the South Coast region.
 - f. Evaluate and assess viability of expanded short-sea shipping to reduce port-related container drayage traffic on the region's roads.
 - g. Monitor developments in automated ground and aerial deliveries to plan for their integration into the goods movement system. Adapt existing highway and roadway infrastructure to match the capabilities of automated vehicle technology to maximize throughput on separated roadways and maximize safety on non-separated roadways. Ensure that potential deployment addresses concerns relating to emissions, noise, safety, obstruction of sidewalks, visual nuisance, and comfort, and impacts on workers in the freight and logistics sector.

Co-ordinating Goods Movement in the Region

The **Greater Vancouver Urban Freight Council** (GVUFC), established in 2016, is an organization that champions the priority actions in the Regional Goods Movement Strategy (RGMS). The council also helps co-ordinate initiatives among Council partners, and exchange information and knowledge on the region's urban freight challenges and opportunities. The **Greater Vancouver Gateway Council** (GVGC), established in 1994, is an organization whose primary objectives include improving international competitiveness of goods movement through the Greater Vancouver multimodal gateway to retain existing business and attract new customers, and raising awareness about the gateway and its contribution to the local, provincial, and national economies. Although there are issues of common interest to both councils, the GVGC focuses on actions to support national and international trade gateways and corridors through the Lower Mainland; the GVUFC focuses on actions to support the efficient movement of local goods and services serving the regional economy.

The **Gateway Transportation Collaboration Forum** (GTCF), established in 2014, is a collaborative effort of the federal government and the BC Ministry of Transportation and Infrastructure, TransLink, the Vancouver Fraser Port Authority, the Greater Vancouver Gateway Council, and the British Columbia Marine Terminal Operators Association to ensure the gateway is ready to manage growing trade. This includes assessing the gateway's infrastructure needs and transportation issues along major trade corridors, which are of national significance to promote economic growth. The Greater Vancouver Gateway 2030 is the GTCF's strategy for smart infrastructure investment to remove bottlenecks impeding the growth of trade while addressing the community impacts of goods movement.

While gateway projects are beyond the scope of this strategy, which focuses on regional, urban freight transportation, it is important to co-ordinate with gateway partners to maximize the local benefits and minimize the negative impacts of any future gateway investments, to secure funding, and to move initiatives forward that achieve regional goals.



E-commerce in Canada has been experiencing year-over-year growth, driven by digitalization, and spurred by the pandemic

Strategy 2.3: Make driving and parking more reliable.

Today and into the future, a portion of residents will continue to rely on cars and trucks to conduct everyday business — the landscaper carrying tools, the logistics companies delivering new appliances, and the hospital worker whose shift ends at 3 a.m. Additionally, for some people who live in lower density, less walkable neighbourhoods or who have mobility challenges, cars and trucks play an essential role in managing their busy lives or simply getting around safely and conveniently.

To enable these trips to be made reliably, we need a network of local streets to access properties, regional roads to travel longer distances within the region, and controlled-access highways to travel longer distances out of the region — consistent with the land use framework set out in Metro 2050.

To make decisions about their trip, people need information about their different travel choices. The more accurate, relevant, and timely the information, the better the transportation outcome for both the individual and the system — as people are better able to shift to less busy modes, destinations, routes, and times of day.

Cities often struggle to provide real-time data and effectively manage transportation demand (especially for non-recurrent congestion, such as congestion caused by crashes or adverse weather) because of the myriad of transportation agencies or companies involved. Municipal transportation departments oversee the streets and traffic signals; TransLink runs the transit system; and private or non-profit organizations operate goods movement, vehicle-sharing, and taxi or ride-hailing fleets and services.

These independent systems are fragmented; they have their own data, priorities, and regulatory regimens; and they have little capacity to communicate, co-ordinate, and respond quickly to emerging issues in real time.

This strategy envisions a real-time mobility management system that provides a platform for co-ordination and communication between these entities. For example, this system could ask a responsive traffic signal to hold a crossing signal for someone moving slowly across an isolated intersection. Through dynamic parking management, it could ensure that a curbside drop-off or parking spot is always available and reservable — potentially with vehicle charging options. If a street is clogged, it can direct vehicles to an emptier parallel street, resulting in less congestion for everyone. These improvements could multiply with the arrival of connected and/or automated vehicles, which can receive information directly from the mobility management system and respond immediately.



The essential functions of such a system would include:

- **Real-time analysis and optimization**, evaluating how the transportation system is functioning and optimizing for efficiency and other regional goals (Action 2.3.4.)
- **Informing** trip choices by providing real-time information to travellers, mobility services, and commercial goods movers on things like scheduling, pricing, and route availability (Action 2.3.7.)
- **Dynamically managing** the use of road space, including curbs (Actions 2.3.5. and 2.3.6.)

The other major advance enabled by improved internet connectivity is the ability to replace many trips by going online. While being online is no substitute for actual human contact when it comes to our closest relationships, this trend towards replacing some of the most inconvenient in-person travel with online access, already well underway before the pandemic, will certainly be a key feature shaping the future of transportation demand. To the extent that we can support the

same level of economic activity with less overall travel, the transportation system will be much more reliable for people who do need to make a given trip in person.

During the COVID-19 pandemic, just more than half of workers in the Metro Vancouver region were able to transition to remote working. From schools to healthcare to professional services, nearly all workers who were not engaged in front-line work that required their physical presence at a job site shifted online.

Substantial growth in e-commerce is contributing to lower passenger travel demand — albeit significantly higher parcel delivery demand. This growth in e-commerce will also increase demand for scarce industrial space, reliable truck movement, and delivery facilities, which is addressed in Strategy 2.2. It also has the potential to harm the viability of local brick-and-mortar shops that are so essential to supporting walkable neighbourhoods; mitigation measures are proposed in Strategy 1.1.

Actions

- 2.3.1. Provide a **network of local streets** that feed into **pedestrianized zones** where vehicle access is restricted, with exceptions for heavy goods movement, transit, emergency services, or drop-off and pickup for disabled or mobility-challenged users, consistent with the street network concept described in Action 1.1.2.
- 2.3.2. Design a well-connected **network of regional roads** to carry higher volumes of people and goods travelling longer distances between communities. Before contemplating any road capacity expansion, all efforts should first be made to address any reliability or safety issues through access management and demand management measures. While the approach for regional roads is primarily to optimize the existing network, additional road links or capacity may be provided in some parts of the region to improve connectivity for both people and goods in a way that does not increase general-purpose traffic. These include:

a. East-west connections on the North Shore.

b. East-west connections in North Surrey.

c. A long-term solution to connect Highway 1 and Highway 91A north of the Fraser River, filling this critical gap in the regional goods movement network in a way that also reduces the negative impacts of high commuter and truck traffic on the livability of the New Westminster Regional City Centre.
- 2.3.3. Maintain the existing network of **controlled-access highways** — intended primarily to serve a provincial and national role — and discourage shorter intraregional trips so that the long-distance movement of people and goods between regions is prioritized on these roadways. Today and in the future, some targeted investments, including a new George Massey Tunnel, will be needed to address critical traffic safety and seismic safety issues, and capacity pinch-points at key bottlenecks. Any such highway investments that may result in increased capacity should include measures to minimize induced traffic demand.
- 2.3.4. Establish a comprehensive and secure **database of urban mobility data** through:

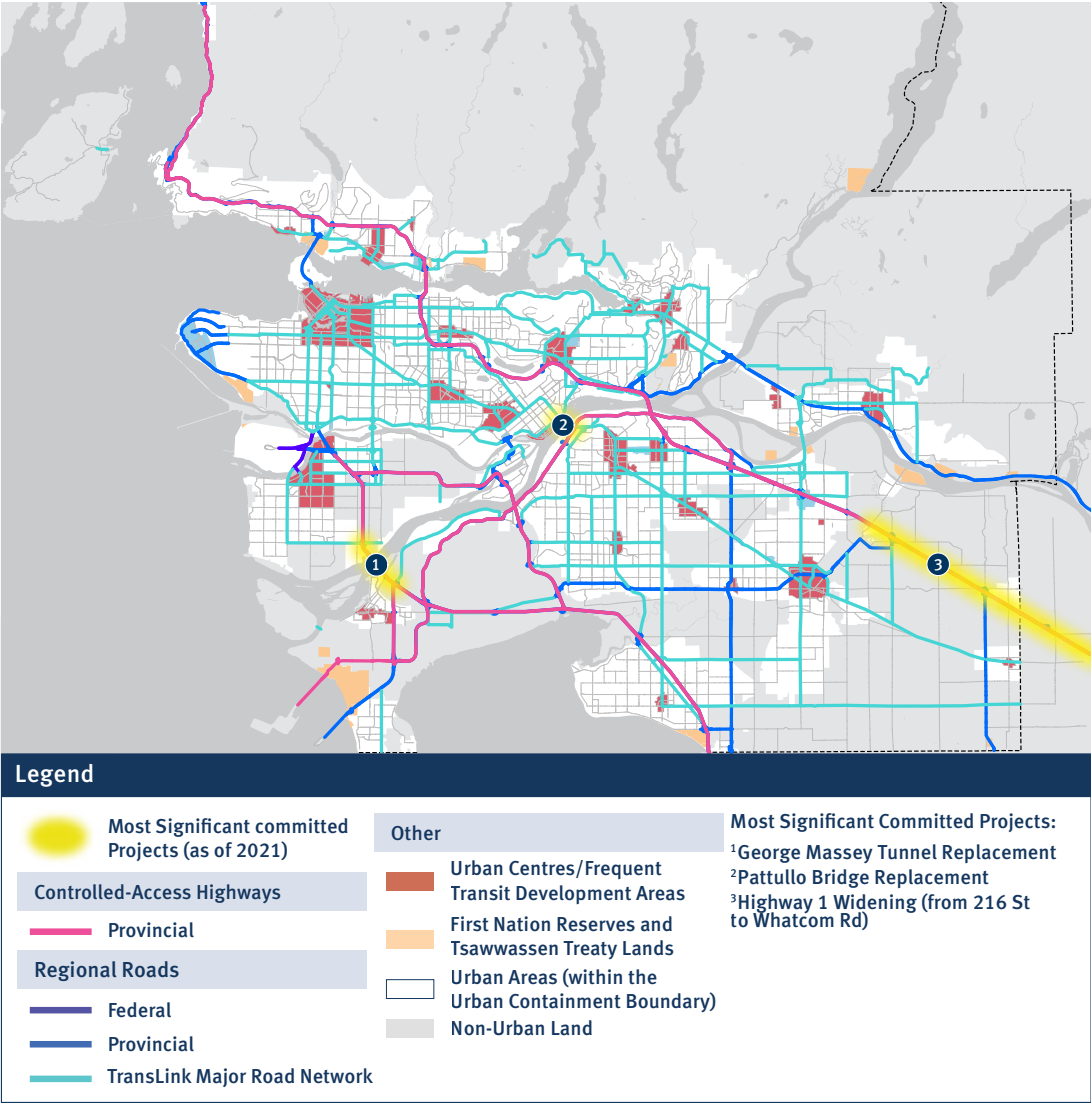
a. Ensuring a regionally consistent approach to the deployment, operation, and maintenance of real-time sensors across the transportation network, including establishing data standards and communications protocols for interoperability.

b. Collecting urban mobility data with real-time sensors and GPS devices.

c. Storing collected information in two key databases: one for all non-personal and de-identified information that is open and accessible to third parties via an API, and one that includes private data that is restricted to a small number of public officials with high security clearance.

- d. Creating a digital twin of the transportation system — a virtual model that pulls real-time monitoring data — in order to help inform real-time system planning and decision-making.
- e. Monitoring asset condition and performance; road space use, including traffic volume, vehicle speeds, and occupancy; transit delays; emergency dispatches; and weather patterns across the region’s roads to better understand congestion levels at key choke points at various times and locations.
- f. Optimize system performance using artificial intelligence.
- g. Engaging with stakeholders from the public and private sector to understand legal, social, and business requirements and impacts across sectors of an urban data trust.

Map 17: Existing Regional Roads and Highways
Showing Significant Committed Investment Priorities



Highway capacity to 2050

Beyond the projects currently underway — the Pattullo Bridge replacement, George Massey Tunnel, Highway 1 widening through the eastern parts of the region connecting into Abbotsford – and future targeted projects to address safety, alleviate key chokepoints, and improve reliability, this region should have sufficient capacity on the controlled-access highway network to meet demand over the planning horizon of Transport 2050. This assessment is based on:

- Additional regional road network connectivity, per Strategy 2.3, which will remove shorter local trips from the controlled-access highway network and free up additional capacity
- Substantial investments in rapid transit and express transit services across the South Coast region outlined in Strategy 1.2 that will each provide the equivalent of multiple lanes of highway capacity without adding vehicles to the road

- The advent of automated vehicles within the horizon of this strategy can increase travel speeds on existing highways and reduce the buffer space needed between each vehicle to maintain safe stopping distances, while reducing traffic collisions, thereby enabling substantially higher traffic volumes to flow within existing highway road space
- Any major expansion in highway capacity inducing a significant growth in new traffic and congestion would be counter to the goals of Transport 2050, as well as the land use objectives and the transit-oriented focus of Metro 2050, which Transport 2050 is required to support
- Additional major highway expansion would also be counter to provincial and regional climate action targets as described in Goal 5, which Transport 2050 is also required to support



- 2.3.5. Make **parking, pickup and drop-off, and loading and unloading** more reliable for all users by:
- a. Charging the right prices for on-street parking, i.e., the lowest prices that will leave one or two open spaces on each block, ensuring high levels of parking reliability and reducing congestion from vehicles cruising in search of a parking spot.
 - b. Requiring permits to park personal and commercial vehicles overnight on public streets.
 - c. Designating reservable locations for overnight parking of larger commercial vehicles in appropriate locations around the region.
 - d. Deploying dynamic real-time information via digital signage and apps that communicate parking availability and help reduce unnecessary driving and circulation.
 - e. Deploying digital street and curb regulations to clearly communicate the rules of the road with digital mobility service providers, like app-based ride-hailing and shared micromobility today, and automated robo-taxis tomorrow.
 - f. Making curb zones, in areas not required for transit stops or lanes, more flexible by dynamically adjusting permitted uses (such as micromobility parking, taxi pickup and drop-off, freight loading and unloading, and public realm activities) based on actual real-time demand for those uses, combined with regional and locally specific policy priorities.
 - g. Allocating sufficient space to short-term, reservable access zones along the curbside for loading/unloading people and goods to ensure parking availability, especially in Urban Centres, Frequent Transit Development Areas (FTDAs), and other commercial areas.
 - h. Designating commercial loading and unloading times that minimize congestion and conflict with other street users, considering off-peak hours wherever possible.
 - i. Increasing enforcement and fines for illegal parking.
 - j. Designing streets, curbs, and loading areas to accommodate emerging freight technology, including compact human-powered and automated freight vehicles most appropriate for Urban Centres and Frequent Transit Development Areas (FTDAs), and longer-combination automated trucks and truck platoons most appropriate at the interface between urban areas and the highway system.

2.3.6. Use intelligent transportation systems (ITS) to **dynamically manage the flow and movement of automated vehicles and other road users** on the roads for efficient movement and safety.

- a. Dynamically assign lanes, uses, and directional flow based on real-time information. With fully automated vehicles (Levels 4 and 5), dynamic management could make significantly more efficient use of road space.
- b. On a regional scale, and especially on urban freight routes from gateway trade areas, adjust signal timing and traffic speeds to maximize safety on non-separated roadways and maximize throughput on controlled-access highways.
- c. Co-ordinate rapid incident response following a collision or other disruption to maximize health and safety outcomes, and to minimize negative impacts on overall transportation system reliability.
- d. Co-ordinate roadwork permitting and scheduling to minimize negative impacts on overall transportation system reliability.


2.3.7. Use real-time data managed in the urban data trust to enable the creation of applications that allow both shippers and the travelling public to **optimize their trip decisions** based on:

- a. Parking and loading zone status and price — allowing reservations, and raising and lowering prices to ensure that spaces are used most efficiently.
- b. Traffic congestion, street closures, lane reallocations, and price — allowing drivers and mobility services to avoid congested spots and route around any problem areas.
- c. Public transit trip arrival time, space available on each vehicle, and price — allowing users to optimize trips and seamlessly connect across multiple modes.
- d. Commercial vehicle locations, available capacity, routing, and price — supplied in a consistent open data format by commercial passenger and freight mobility service providers — to enable third-party digital brokering of passenger trips as well as immediate processing and cargo tracking for freight deliveries (a component of Mobility-as-a-Service).

2.3.8. Support **integrated fares pricing and loyalty programs** between different mobility providers to allow users to combine trips of different modes, and to incentivize off-peak travel.

2.3.9. Require larger employers to develop annual **commute trip reduction plans**, describing how they will meet progressively more ambitious mode shift and emissions reduction targets through travel demand management (TDM) measures.

- a. Work with employers to update their policies and practices to support remote working and more flexible work hours, in order to reduce overall demand and especially peak-period demand on the transportation system.

2.3.10. Broaden the reach of **transportation demand management** (TDM) programming and resource capacity in the region, such as through cost-share initiatives, TravelSmart, and local Transport Management Associations (TMAs). Program areas should provide tailored support services, resources, and behaviour change incentives focusing on: 

- a. Major employers, new developments, retail centres, and other major trip generators; schools or post-secondary institutions; hospitals and other health facilities; and seniors' institutions.
- b. Timing through life phases and changes where people are more open to establishing new habits due to the “fresh start effect”, such as when children enter or change schools or attend after-school regimens, when moving homes or jobs, when seniors cease driving, when newcomers arrive in British Columbia, or when obtaining a driver's licence or purchasing a vehicle, or when a new transportation service or infrastructure improvement has been made.

- 2.3.11. Support **transportation choice for residents of multi-family buildings or occupants of commercial buildings** through:
- a. Engaging with developers on transportation demand management (TDM) measures that are most applicable under the various development and local contexts.
 - b. Engaging with managers of existing commercial and residential buildings on TDM measures such as parking strategies, bike facilities, and carsharing infrastructure and vehicles.
 - c. Integrating requirements for TDM into the development process using municipal bylaws.
 - d. Monitoring the progress and impact of these TDM measures post-occupancy.
- 2.3.12. Encourage a reduction in driving by building on the existing automobile insurance discount that ICBC offers for low-kilometre vehicles, with a wider range of automobile insurance rate tiers based on distances driven in a month or year, known as **pay-as-you-drive insurance**.



Strategy 2.4: Maintain transportation infrastructure in a state of good repair.

While maintaining existing transportation assets in a state of good repair is a sound management practice, this has not typically been the case in North America, where governments have often prioritized transport system expansion while underfunding maintenance. As a result, the maintenance and repair backlog across the continent is substantial and growing, and many older cities are now seeing critical transportation infrastructure — including roads, transit, and the technology and systems to keep them functioning reliably — fall into poor condition. When roads are potholed, when station elevators and escalators aren’t working, or when transit vehicles break down — people’s journeys are often disrupted, and they are less likely to get where they are going on time.

To avoid the downward spiral of deferred maintenance, which can often result in delays and less reliable travel, and to reap the benefits of greater travel time reliability — not to mention greater cost savings, public safety, and noise reduction — we must be clear about which assets and infrastructure are needed into the future, and then maintain those in a state of good repair.

- 2.4.1. Deploy routine **surveys and technologies**, such as real-time sensors and software as they become available, to monitor conditions to inform predictive maintenance priorities. This includes monitoring the condition of pavement and structures on the region’s walkways, bikeways, streets, and roads, and the condition of transit vehicles, guideways, facilities, and stops and stations — with special attention to vertical circulation, such as stairs, escalators, and elevators.
 - a. Enable crowd-sourced reporting of maintenance issues for quick identification.
- 2.4.2. Provide the timely, adequate, and ongoing **availability of funds** to operate, maintain, and rehabilitate the region’s walkways, bikeways (including the Major Bikeway Network), streets and roads (including the Major Road Network), transit fleet and infrastructure, and public electric mobility charging infrastructure to keep them in a state of good repair and operating reliably.



GOAL THREE

Affordable Choices for Everyone



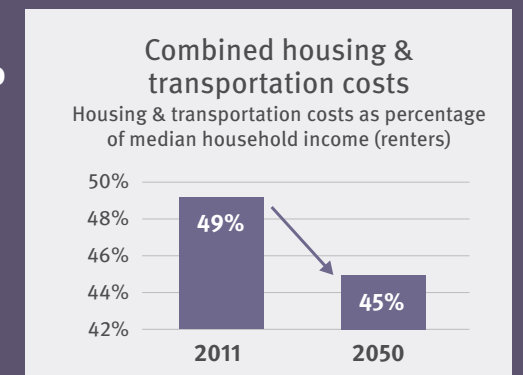
WHERE WE ARE TODAY

“In this expensive region, I’m forced to spend more than I can afford on housing and transportation. In areas with more affordable transportation choices, housing is too expensive. In places further from urban centres where housing is a bit more affordable, I need to rely on my car, taxis, or rideshare services for most of my trips, which is more expensive.”



WHERE WE WANT TO BE

We all have affordable choices, allowing us to easily live and move in this region such that, by 2050, none of us — but especially those of us with less ability to pay — need to spend more than 45% of our household incomes¹² on housing and transport combined.



Metro Vancouver is an unaffordable region to live in by Canadian and North American standards, particularly for people of lower income. According to Metro Vancouver’s 2015 Housing and Transportation Cost Burden Study, nearly half of renter households in Metro Vancouver — making up 31% of all households — make \$50,000 or less per year. In this expensive region, this group ends up spending nearly 70% of their household income on rent and on getting around. These households are particularly struggling under the weight of a heavy housing and transportation cost

burden, leaving them with difficult choices about what to spend on food, clothing, childcare, and other expenses.

Keeping the two major interrelated household costs of shelter and transportation to the more manageable level of below 45%¹³ of household incomes is critical to ensuring that we can all afford to live in this region; that we can connect to the opportunities we need to thrive, participate fully in our communities, and be productive contributors to the region’s economy; and that we can live rewarding, dignified, and independent lives.

¹² Metro Vancouver, “The Metro Vancouver Housing and Transportation Cost Burden Study”, 2015, <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/HousingAndTransportCostBurdenReport2015.pdf>

¹³ Numerous agencies, including the U.S. Department of Transportation and U.S. Department of Housing and Urban Development, are replacing the conventional housing affordability threshold (30% of household incomes spent on housing) with a new combined affordability threshold of 45% of household incomes spent on the interrelated costs of housing and transport.

**Affordable Access for Everyone:
Bridging the Digital Divide**

Transport 2050 envisions a future where everyone can easily connect to opportunity. There are three ways to facilitate this access:

- By helping people move around between destinations more easily (mobility)
- By bringing destinations closer together (land use)
- By moving more opportunities online to avoid the need to travel altogether (digital)

Our vision of *Access for Everyone* means that everyone has a range of affordable mobility options — the focus of Transport 2050; everyone has the chance to live in affordable housing near their work, shopping, and services to reduce the distances they need to travel — the focus of *Metro 2050*; and everyone has affordable access to a basic level of internet connectivity in order to take advantage of e-learning, e-health, e-services, and e-commerce opportunities — all of which reduce the need to travel altogether.

Affordable digital access is the focus of the Government of Canada’s *Connecting Families initiative*.

Goods movement also plays a key role in supporting affordability, as the cost of transporting goods impacts the cost of consumer goods. Actions that impact the cost, efficiency, and reliability of moving goods will require analysis and monitoring to understand the impacts on affordability for households and businesses.

The following pages describe what it will take to create a future where **none of us — especially those of us with less wealth and lower incomes — need to spend more than 45% of our household incomes on housing and transport combined:**

- Increasing the supply of new — and protecting existing — **transit-oriented affordable housing** and community-serving retail so that people can live nearby and make use of the most affordable transportation options
- Investing in the most cost-effective modes, in particular, **walking, rolling, cycling, and transit** in areas with higher proportions of lower-income households to help make these, the **most affordable modes**, especially convenient for people with the most to gain from them
- Guaranteeing everyone a **universal basic level of mobility** with any fares, fees, and tolls on any urban transportation service (including transit, shared mobility, parking, and driving) to be set at a price that each household can afford and that is linked to each household’s ability to pay
- Regional transportation taxes — most of which today are weakly connected to household wealth and income — will also be adjusted to be **more progressive**, linking them as closely as possible to one’s **ability to pay**
- Supporting **regional prosperity** and **quality economic growth** that is equitable, with benefits shared broadly by everyone

\$ On Resilience & Affordable Choices

Increasing affordability supports resiliency by allowing households enough resources to buffer against shocks and stressors. Households that are dealing with poverty or that are financially strained are less resilient. This same principle applies to the transportation system as a whole — focusing on lower-cost transportation options that involve less capital-intensive infrastructure requires fewer resources to rebuild or repair in the event of a shock or stressor. For these reasons, transportation affordability supports regional resiliency at both the household and system-wide levels.

To better understand what tomorrow might bring, Metro Vancouver and TransLink partnered to develop the *Regional Long-Range Growth and Transportation Scenarios* report. This report examines four plausible futures for Metro Vancouver, which can help us identify measures to ensure that both transportation and the region are more resilient.



Walking, biking, rolling, and transit are the most economical modes of transportation — both for travellers and for the region



Strategies and Actions

Strategy 3.1: Make living close to frequent transit more affordable.

Living next to fast, frequent, and reliable transit and community-serving retail allows many households to live comfortably without needing to own a car — saving upwards of \$10,000 in expenses per year for each forgone automobile. However, housing next to frequent transit is typically also in high demand, and so is the least affordable.

To address this challenge, bold and deliberate measures to increase housing affordability near transit are necessary to realize more equitable, mixed-income transit-oriented communities. The status quo alternative, which has played out in Metro Vancouver over the last 30 years, is that announcements of major transit investments have spurred land speculation, which has driven up real estate prices, which in turn has harmed affordability and accelerated gentrification and displacement.



That major transit investments, so important in helping us reach most of our other goals, have contributed to worsening housing affordability in this region is one of this region’s significant policy failures. This requires bold new approaches by land use, development, and taxation authorities.


To make up for this past failure, the provincial, regional, and local governments need to step up our collective efforts to build transit-oriented affordable housing, including affordable rental housing, at a much more ambitious pace and scale. Currently, municipalities have been leading this effort, but there is a need for provincial and federal support to achieve a more ambitious expansion and retention of affordable housing near transit. We also need to actively cool speculation around existing and proposed transit investments in order to ensure that existing residents aren’t displaced to more auto-oriented areas where housing costs might be lower, but where higher transport costs often negate these savings.


Parking is a major cost associated with development, so taking a regionally co-ordinated, affordability-focused approach to parking management and requirements in zoning bylaws can help bring down housing costs by avoiding an oversupply of parking, and by not forcing potential residents to purchase parking along with their units if they don’t require it.


Even if housing and transport are made more affordable, living can't be truly affordable if all of the amenities and local retail in your neighbourhood are oriented to a wealthy clientele, focusing on luxury goods. Faced with rapidly rising rents and stiff competition from international e-commerce giants, local retailers are in jeopardy, particularly small family businesses, many of whom are best positioned to effectively serve disadvantaged individuals and communities. We need to encourage policies that actively support these local businesses, which form the foundation of commercial main streets at the heart of equitable, affordable, walkable, and complete communities.


Actions

- 3.1.1. Encourage land use planning authorities and affordable housing organizations to **expand, retain, and renew rental housing supply** adjacent to frequent transit stops and stations, especially within Urban Centres and Frequent Transit Development Areas, at a much more ambitious pace and scale than today, through measures including: 
- a. Co-ordinate across municipalities and with Indigenous Nations to align the land use planning, policy, and investment measures needed to achieve agreed-upon affordable housing targets along the length of major transit growth corridors. Document these commitments as part of Partnership Agreements to be approved by the Mayors' Council on Regional Transportation concurrently with regional approval of major transit investments. 

b. Engage Indigenous Nations on new transit-oriented affordable housing targets concurrent with approval of major transit investments. 



c. Co-ordinate across public agencies to secure land for non-market housing and supportive services along with decisions on major transit investments, ensuring that land purchased for transportation facilities is also assembled in ways that optimize development potential for regional objectives. 

d. Encourage public agencies with land holdings in the vicinity of frequent transit to partner with non-profit housing developers to deliver affordable housing. 

e. Encourage public agencies to develop procurement, disposition, and development plans and actions for land holdings that support the goals of the Regional Growth Strategy and include the provision of affordable rental housing (M2050 1.2). 

Transit-Oriented Affordable Housing

Metro Vancouver's Transit-Oriented Affordable Housing study proposes a suite of strategies to ensure that transit investments benefit all residents, irrespective of wealth or income. Read more about the study findings [here](#).

- 3.1.2. Support Provincial, First Nation, and municipal efforts to protect and expand the existing supply of transit-oriented affordable housing through measures to **cool land speculation** along major transit corridors. 
- a. At the earliest stages of planning for a major transit project, implement policies aimed at preventing residential and small business displacement, to slow the pace of speculation and to increase opportunities for affordable housing and services, including expansion of affordable and non-market rental housing, as noted in Action 3.1.1. 

b. Adopt Development Contribution Expectation policies for each corridor identified in the Major Transit Network to ensure that owners, realtors, and developers are made aware of the significant expectations to preserve and grow affordable and rental housing along these corridors, even in advance of further community planning processes.

c. Where possible, preserve, protect, and reinvest in existing older, more affordable market and non-market rental housing around transit, in order to minimize the displacement of existing residents. 






Pedestrian image courtesy the City of Vancouver

- 3.1.3. **Advance parking management solutions** to increase housing affordability and reduce demand for driving:
- a. Encourage developers to unbundle parking costs from housing costs so that individual vehicle parking spots can be purchased separately by residents as needed.
 - b. Eliminate parking minimums in new developments so that developers are not forced to add to the cost of housing units by oversupplying parking, most of which today remains underutilized across Metro Vancouver. This action should be delivered in concert with Action 2.3.8. to avoid increased pressure on street parking.
 - c. In new developments adjacent to frequent transit stops and stations, explore concepts such as car-free developments, mandated parking for shared mobility (e.g., carsharing), investment in shared mobility infrastructure or services, parking maximums, and shared district parking.
 - d. Develop area-wide parking management plans, including on-street parking meters and permits and shared off-street lots, to effectively manage any spillover impacts from reduced on-site parking.
 - e. To avoid turning underutilized parking into expensive stranded assets, ensure that new structured and underground parking is built in ways that allow the space to be easily repurposed should demand continue to decline, especially considering the coming introduction of more shared and potentially automated vehicles.
- 3.1.4. Increase **community-serving retail** and other local amenities in Frequent Transit Development Areas so that residents living around frequent transit can easily walk to a wide selection of affordable goods and services.

Strategy 3.2: As a priority, invest in the most cost-effective and most affordable modes.

Cost-effective modes of transportation are those that are lowest cost/most affordable for residents to use to move around the region. Investing in cost-effective and affordable modes will have significant benefits for people with low incomes as well as for Indigenous communities, which are some of the most underserved by transportation options in the region.

Actions


- 3.2.1. **Prioritize investment** in transit service improvements and active transportation across the region, but especially to neighbourhoods with high populations of households with **low income**. These investments should be accompanied by measures to prevent community displacement (see Strategy 3.1 on affordable housing).
- 3.2.2. Make **micromobility devices** such as bicycles, and mobility aids such as walkers, wheelchairs, and scooters, more widely available to more people **at low cost** through:
-  a. Public ownership of shared micromobility as a utility and extension of the public transportation system.
 - b. Rebates for micromobility devices, repairs, or accessories, and mobility aids for low-income individuals.
 - c. Refurbishment and redistribution programs.
- 3.2.3. Implement minimum requirements for **secure, safe, and convenient bicycle parking** in all new developments and encourage/incentivize retrofitting existing multi-family and rental buildings; places of employment, education, and care; and retail centres to accommodate more secure bicycle and micromobility parking and charging infrastructure.
- 3.2.4. Prioritize **subsidies and rebates** for electric vehicles, electric bicycles, and bicycles to those residents with the least ability to pay, particularly to those who require that transportation mode in order to conduct their jobs (e.g., gig couriers, mobile care aids).
- 
- 3.2.5. Per Action 1.3.5., leverage the abilities of **autonomous vehicles** to support the needs of people with **low incomes living in more remote locations** that are far from rapid transit service. 

Strategy 3.3: Ensure that transportation fees and taxes are affordable for everyone.

Urban mobility benefits individuals who enjoy being able to move around and connect to opportunities, property owners whose land values go up with increased access, and businesses and the broader society, who share in the benefits of increased economic activity that comes with good urban mobility. Given the value enjoyed by each of these groups, the approach our region has long taken to funding regional transportation is to share the cost-burden between user pay (e.g., transit fares, fuel tax) and indirect beneficiary pay (e.g., property tax).

Usage charges are important to help avoid the inefficiency and high cost involved with free public goods; however, high usage charges create a heavy cost burden, especially for lower-income residents. Making usage charges more progressive by linking them to a household’s wealth and income ability to pay will ensure that a basic level of mobility is affordable to all; this will be necessary to achieve the region’s social equity goals.

Actions

- 3.3.1. Fund the regional transportation system through a diverse and resilient mix of **taxes and fees** that reflect both the value enjoyed by different beneficiaries and their ability to pay.
 - a. Establish electronic mobility accounts from which users can pay for all transportation modes and services within the region — with the fares and fees charged for any given user linked directly to their ability to pay. Users with the lowest incomes and wealth should pay a very low discounted fare or fee, and users with higher incomes and wealth should pay the full fare or fee. 
 - b. Make adjustments to each of the region’s transportation taxes to make them more progressive, ensuring they are closely linked to the ability to pay.
 - c. Develop mechanisms that ensure that owners of all motor vehicles, regardless of fuel source, pay a fair share towards funding the regional transportation system.
 - d. Include a clear analysis of costs and benefits for any fees that impact passenger and commercial vehicles, including costs and benefits for businesses, consumers, and carriers as appropriate.
 - e. Co-ordinate with private sector goods movement stakeholders to ensure that pricing schemes meet their mobility needs and enhance the region’s economic competitiveness.

Strategy 3.4: Help people and businesses connect to more economic opportunities.

The first three strategies in this section focus on improving affordability by reducing expenses. This fourth strategy focuses on improving affordability by growing household incomes through equitable economic growth. In addition to the transportation and logistics sector itself providing many good household-supporting jobs in our region, a well-managed transportation system is an essential ingredient for any region’s economic development and overall prosperity. Good transportation and supportive land use increase access to employment and educational opportunities for people, and increase access to employees, markets, suppliers, and end customers for businesses. Providing convenient, reliable, affordable, safe, and carbon-free mobility choices (per the strategies set out in Goals 1, 2, 3, 4, and 5) is a major contributor to high quality of life and is valuable for talent attraction and retention in a competitive global environment.

Actions

- 3.4.1. Provide consumers with **better access to more local shopping opportunities** by enhancing access to businesses through active transportation, transit, and other shared mobility options — especially to local street commerce and main street shops (as described in Strategies 1.1, 1.2, 1.3, and 3.1).
- 3.4.2. Provide workers with **better access to more local jobs** by:
 - a. Enhancing access to employment opportunities through active transportation, transit, and other shared mobility options (as described in Strategies 1.1, 1.2, and 1.3).
 - b. Providing flexible services like vanpools that improve access to jobs in lower-density business and industrial parks that are otherwise challenging to serve with fixed-route transit.

3.4.3. Ensure businesses have **better access to more markets, suppliers, customers, and workers** by:

- a. Helping them set up in the right location, per the location-efficiency framework described in Action 1.2.1, to minimize distances that customers, workers, goods, and services will need to travel.
- b. Enhancing access to businesses by active transportation, transit, and other shared mobility options (as described in Strategies 1.1, 1.2, and 1.3).
- c. Improving travel-time reliability for commercial vehicles and services that rely on the road network, in order to help businesses consistently and predictably bring their products to market (as described in Strategies 2.2 and 2.3).
- d. Including, in any evaluation of transport interventions, a robust assessment of impacts on the region's trade and economic competitiveness, and impacts on cost for goods movers, businesses, and households.

3.4.4. Support **safe and efficient operations for the region's agricultural sector** by:

- a. Discouraging non-agricultural trips on local roads within the Agricultural Land Reserve.
- b. Taking the unique transportation needs of this industry into consideration in road infrastructure design and network planning.
- c. Ensuring adequate education and enforcement of safe speeds and vehicle operation around farm vehicles (see Action 4.1.8.).

3.4.5. Develop proactive strategies to **attract, train, and retain a skilled and qualified transportation workforce** that:

- a. Is representative of Metro Vancouver's diverse population. 🌍
- b. Includes strong representation from local Indigenous Peoples. 🍁
- c. Is ready and able to monitor, model, analyze, plan, build, operate, and maintain the highly automated, connected, electric, and shared transportation system of tomorrow.

3.4.6. Collaborate across the transportation sector, with industry and labour partners, to proactively navigate an orderly, planned, and **gradual transition for transportation workers** whose jobs will be affected by automation and other technological changes. 🌐

3.4.7. Support a thriving **ecosystem of businesses** in Metro Vancouver and British Columbia oriented around transport automation, digitization, electrification, and shared mobility by:

- a. Fostering active partnerships between entrepreneurs, industry, and academics to collaborate, prototype, pilot, demonstrate, and evaluate new mobility technologies, product concepts, and innovations that promise to advance Transport 2050 goals.
- b. Establishing transportation innovation zones to facilitate trials by industry and academic partners in real-world environments within Metro Vancouver in order to better understand emerging transportation technologies and approaches, and how they might advance or hinder progress towards Transport 2050 goals.





GOAL FOUR

Safe & Comfortable Choices for Everyone



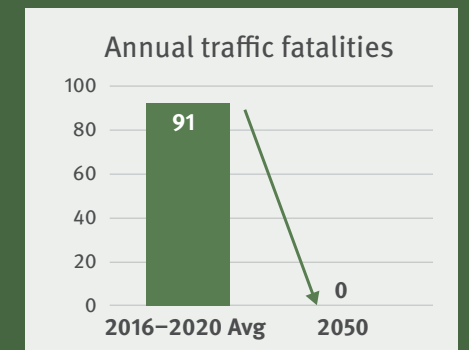
WHERE WE ARE TODAY

“I often don’t feel safe or comfortable getting around, because of high-speed traffic, because of other people who might do me harm, and because of a lack of amenities that meet my needs.”



WHERE WE WANT TO BE

We all have safe and comfortable choices that make us all healthier and happier, with serious traffic injuries and fatalities declining by at least 5% annually until we reach zero before 2050.



A feeling of being unsafe, uncomfortable, or unwelcome is a key barrier that limits freedom of movement and the ability to access the opportunities that people need to thrive.

For people walking, biking, or rolling — including pushing a stroller or being in a wheelchair — that means feeling anxious and unsafe being next to larger, faster-moving vehicles. For people with a disability, including those with diverse learning abilities or those who rely on mobility aids, it could mean challenges navigating transit systems, or being uncomfortable on streets with no or limited sidewalks or with curb cuts. As our population ages, seniors transitioning away from driving — and encountering new accessibility challenges — will require more safe and comfortable choices, particularly as more people “age in place”.

Many people, especially individuals with lower incomes who are more likely to live adjacent to major roads, live with constant and unsafe levels of transportation noise, vibrations, and air pollution,

leading to mental and physical health problems. And many people in Metro Vancouver experience discrimination, harassment, and outright hate while trying to get around the region — especially women, and people who present as Indigenous, Asian, Black, or non-white.

Through Transport 2050, the Metro Vancouver region is embracing the core belief that everyone has the right to live and move safely, comfortably, and free from harm in their communities, and is committing transportation system designers and policy-makers to share the responsibility to help make this aspiration a reality.

The following pages describe what it will take to make sure that our transportation system contributes in positive ways to our health, happiness, and well-being, helping everyone feel welcome, comfortable, and safe while getting around, including reducing **traffic fatalities and serious injuries by at least 5% annually until we reach zero before 2050.**

- A transition away from roads designed for cars towards people-first streets designed for everyone, featuring **reduced motor vehicle speeds** and **greater separation of different modes and speeds**; in the long run, **automation** can also play a major role in improving traffic safety and freeing up space to support more people-oriented streets.
- Making **everyone feel welcome**, included, and comfortable while getting around the region will require a multi-faceted and society-wide effort to **eliminate harassment, hate,** and **systemic discrimination**; it will also require creating welcoming public spaces for everyone, including investment in programs and **amenities to support inclusion**.
- Making the transportation system **cleaner and quieter** to improve health and well-being for adjacent communities and ecosystems.
- Being prepared to **respond to and recover from disruptions and disasters** through robust safety and resiliency planning.



On Resilience and Safe & Comfortable Choices

Various shocks — whether environmental such as flooding or earthquakes, or technological such as power outages or cyberattacks — can bring unanticipated safety risks. Key resilience approaches to mitigate these impacts on safety include:

- Maintaining infrastructure in a state of good repair, robust asset management, and operational practices to enable infrastructure to better withstand climate or extreme weather impacts.
- Establishing standards for infrastructure development that prepare new projects for climate impacts such as excessive heat, floods, and temperature fluctuations.
- Prioritizing bus-based investments over fixed rail infrastructure in areas of high risk for flooding, seismic activity, or earthquakes;

- buses can be more easily redeployed if local conditions change.
 - Supporting a robust transition to autonomous vehicles that emphasizes safety — not only for drivers and car passengers, but also for vulnerable road users.
 - Planning streets to mitigate potential conflicts between modes of transportation — conflicts that could increase when systems are under stress.
- To better understand what tomorrow might bring, Metro Vancouver and TransLink partnered to develop the *Regional Long-Range Growth and Transportation Scenarios* report. This report examines four plausible futures for Metro Vancouver, which can help us identify measures to ensure that both transportation and the region are more resilient.

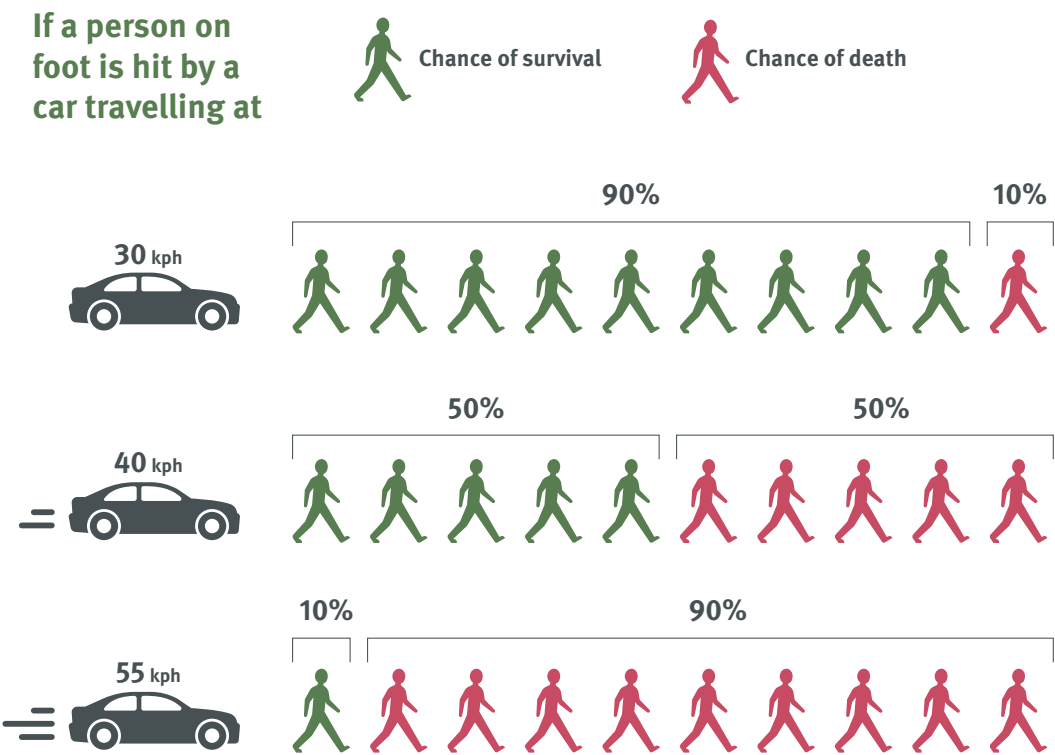
Strategies and Actions

Strategy 4.1: Eliminate traffic fatalities and serious injuries.

Streets are the lifeblood of our communities. Streets use about a third of the land area in urban Metro Vancouver and make up 80% of all public space. They have the potential to foster business activity, serve as a front yard for residents, and provide a safe place for people to get around on foot, by bicycle, by car, or on transit. However, most streets in our region were designed to prioritize high-speed car movement at the expense of other uses and users.

Each year, more than 100 people are needlessly killed on Metro Vancouver streets — typically, 40 of whom were walking, biking, or rolling while they were struck and killed. Tens of thousands more people are seriously injured every year. The key factor in these fatalities is speed. Based on the human body’s ability to withstand impact, as shown in Figure 10, the National Association of City Transportation Officials (NACTO) recommends the top design speed for urban streets should be no higher than 40 km/hr.

Figure 10: Risk of Death for a Person on Foot as a Function of Vehicle Impact Speed



At collision speeds above 35 km/hr, the probability that a person on foot will be fatally injured rises rapidly, with death almost certain at impact speeds of 55 km/hr or higher. (Source: P. Wramborg, “A new approach to a safe and sustainable road structure and street design for urban areas”, Road Safety on Four Continents Conference, 2005).

For too long, we’ve considered these persistent high levels of traffic deaths and severe injuries to be inevitable side effects of modern life. While often referred to as accidents, the reality is that we can prevent these tragedies by taking a proactive, preventive, and systematic approach that prioritizes traffic safety as a key public health issue.

The Vision Zero approach is a significant departure from status quo transportation system management in two major ways:

- Vision Zero recognizes that people will make mistakes, so the road system and related policies should be designed to ensure that those inevitable mistakes do not result in severe injuries or fatalities.
- Vision Zero is a multidisciplinary approach, bringing together local traffic planners and engineers, policy-makers, public health professionals, and the public to collaborate on problem-solving.

The arrival of advanced connected and automated vehicle technology could also provide substantial opportunities to move goods and people more safely throughout the region with fewer casualty collisions — 90% of which in 2016 were attributed to human error.¹⁴ However, given the challenges that automated vehicles will likely always have in urban environments when interacting with people on foot — as unpredictable as we humans are — cities seeking to bring automated vehicles to scale are likely to find two feasible design options:

1. Significantly reduce traffic speeds on urban streets so that automated vehicles can safely and efficiently interact with people on foot, or
2. Significantly restrict and channelize the movements of people on foot through barrier fences alongside sidewalks and down the middle of streets, together with pedestrian tunnels and overpasses that minimize interaction between automated vehicles and people on foot

While there will be a few limited locations within our region where the second design option may be necessary to contemplate, our region strongly prefers the first option — to design streets for slower traffic speeds. This option is significantly more favourable to advancing the five goals set out in Transport 2050.

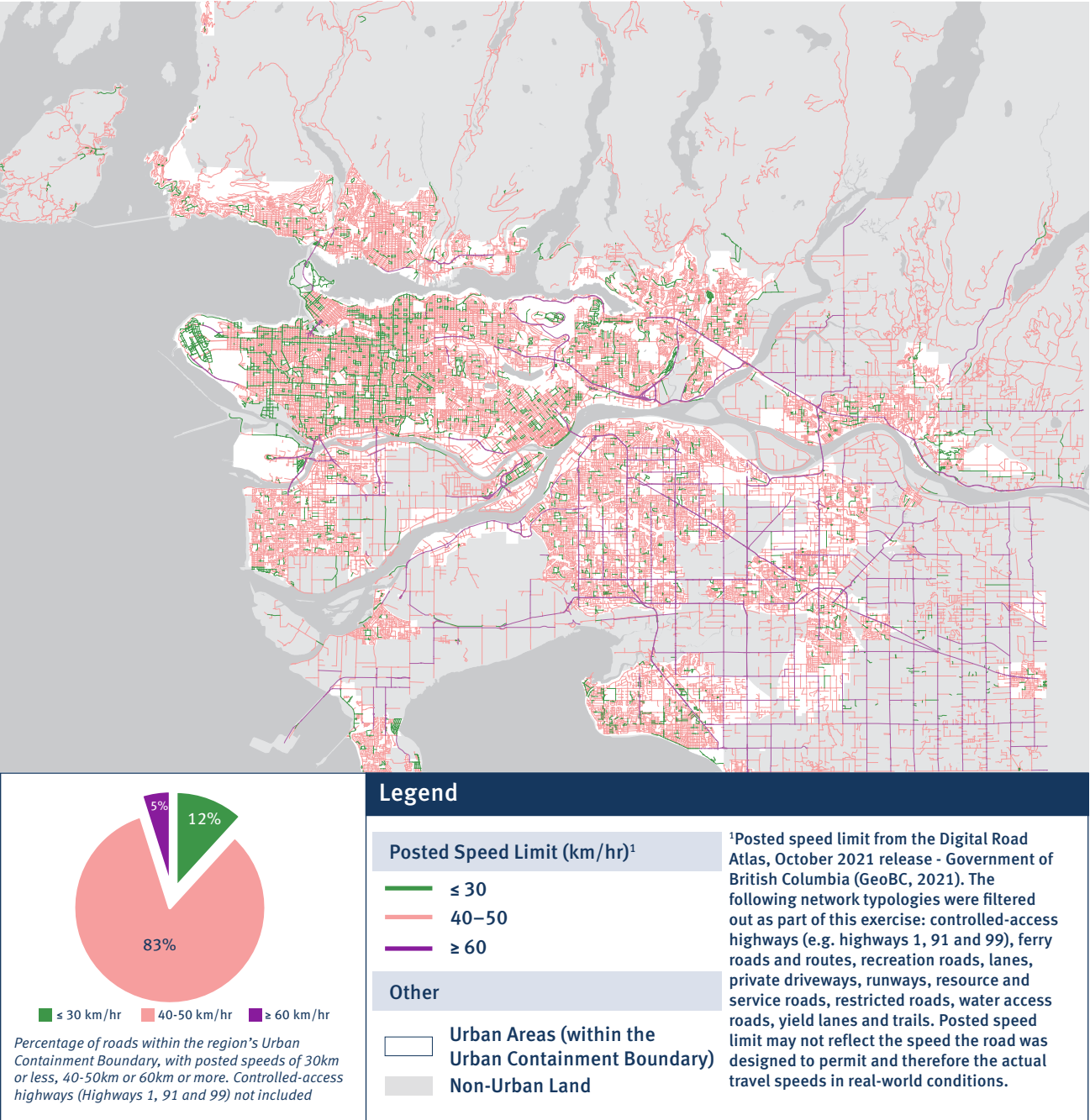
¹⁴ Information and Communications Technology Council, “Autonomous Vehicles and the Future of Work in Canada”, January 2018, https://www.ictc-ctic.ca/wp-content/uploads/2018/01/ICTC_-Autonomous-Vehicles-and-The-Future-of-Work-in-Canada-1-1.pdf

Given the vastness of our region’s street network and the length of time it will take to transform them, we need to take steps now to begin redesigning our streets for slower speeds and with more dedicated space for active transportation and transit. In this way, we will be more prepared to welcome connected and automated vehicles, whenever they are permitted on BC roads, in ways that advance our region’s goals, rather than work at cross-purposes to them. In the meantime, even prior to the arrival of automated vehicles, such street transformations will make important progress towards eliminating traffic fatalities and serious injuries, and towards improving travel reliability, livability, street life, and street commerce.

Actions

- 4.1.1. **Reduce the default speed limits** and design speeds for urban streets to 30 km/hr or slower, depending on context, with speeds of 60 km/hr and above reserved for controlled-access highway environments characterized by complete separation from other modes and potentially much faster travel speeds ultimately dictated by the safe upper operating range of automated vehicles.
- 4.1.2. Transform our roads into **people-first streets** that are safe for everyone, with different streets prioritized for different uses and speeds, employing physical design and technology to achieve those speeds, including:
 - a. Walking and rolling priority streets, pathways, and car-free zones where motor vehicle traffic travels at walking speeds so that people feel safe and comfortable to choose these active modes.
 - b. Neighbourhood streets where motor vehicle traffic travels at cycling speeds, allowing for play and social activity in the street.
 - c. Neighbourhood main streets where it is still comfortable for cycles to ride in mixed traffic; this could include priority lanes, allowing transit to safely travel at somewhat higher speeds.
 - d. Major roads and boulevards that accommodate longer-distance vehicle trips could permit speeds of up to 50 km/hr in some cases, as long as they feature frequent signalized crossings, wider sidewalks, traffic-protected cycle tracks, and transit priority lanes.

Map 18: Posted Speed Limits in Metro Vancouver Today



Source: “Digital Road Atlas”, GeoBC, October, 2021,
<https://www2.gov.bc.ca/gov/content/data/geographic-data-services/topographic-data/roads>

- 4.1.3. **Reduce the frequency and severity of collisions** involving automobiles and vulnerable road users by working towards realizing a people-first street network typology as described in Actions 1.1.1 and 1.1.2.
- a. Welcome local motor vehicle traffic on low-speed local streets, but prevent high-speed cut-through traffic on local streets.
 - b. Make the resulting neighbourhood open space serve as a passage and crossover point for walkways and bikeways, as well as recreation and play areas and focal points for community activities.
 - c. Prepare Freight-Supportive Community Design Guidelines (as a reference for municipalities) that include guidance on particularly challenging issues, including complete street designs that provide safe and efficient networks for all users.
- 4.1.4. **Prioritize protection for those road users with the least physical protection** and who are most easily injured or killed in car-dominated environments (i.e., people walking, biking, and rolling; on motorized two-wheelers or horseback; children, seniors, and people with disabilities; and roadwork crews). 🤝
- a. Update legislation and bylaws to strengthen legal protections for these street users.
 - b. Strengthen enforcement practices to prioritize protection for these street users, including the use of automated traffic enforcement and increased penalties for speeding or unsafe driving.
 - c. Study the potential of allowing low-speed lane filtering for motorcycles and mopeds — where a motorcycle rider is permitted to move alongside vehicles that have either stopped or are moving very slowly — to confirm whether this measure improves the safety of motorcyclists (e.g., improving visibility, reducing the likelihood that they are rear-ended), and whether these safety improvements outweigh any potential added risks to motorcyclists or other road users.

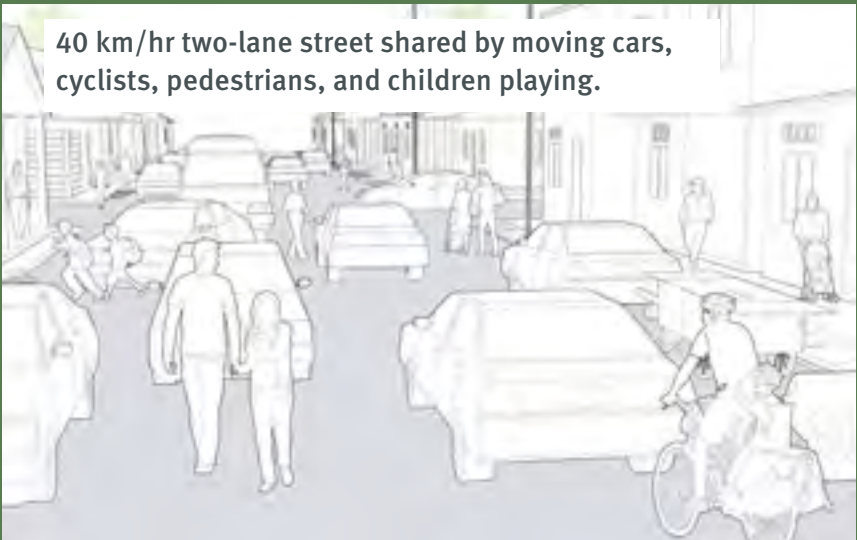
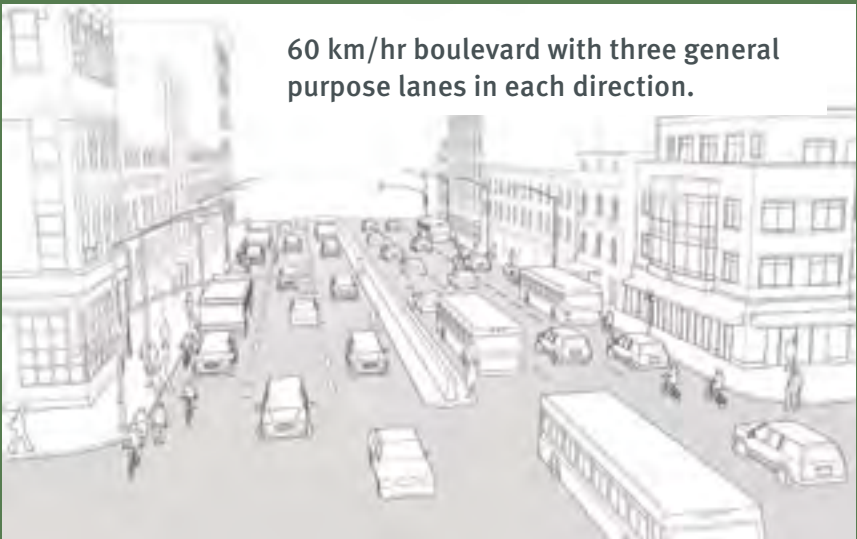
People-First Streets

Rethinking and evolving street design

At one time, before the automobile came to the fore, city streets in many parts of the world were much more inviting to pedestrians, social gathering, and multiple modes of transportation.

A return to more people-first streets, which could be realized through a transformation of road space, could help the region meet multiple social, environmental, and economic objectives.

EXISTING CONDITIONS



REDESIGN



These images show a variety of ways streets can be transformed from focusing on moving vehicles to focusing on moving people in a safe and comfortable way.

The images are provided only as examples.

For implementation, a tailored approach unique to each location around the region would be needed.

Sources: “Global Street Design Guide”, Global Designing Cities Initiative, December 21, 2021, <https://globaldesigningcities.org/>; “Designing Streets for Kids”, Global Designing Cities Initiative, 2020, <https://nacto.org/publication/designing-streets-for-kids>

People-First Streets

Rethinking and evolving street networks

Designing street networks that put people first is a key strategy for advancing goals related to convenience (Strategy 1.1) and safety (Strategy 4.1) of people walking, biking, or rolling.

Different types of street networks: A cul-de-sac and street grid network tend to prioritize the movement of vehicles over people walking, biking, or rolling. A modified grid restricts vehicular traffic at key locations within a neighbourhood, while maintaining through movements for active modes. Of these networks, the modified grid is the most convenient and safest street network for people walking, biking, or rolling.

LEGEND

Access limited to people walking, biking, or rolling

Motor vehicle journey

Walking, biking, or rolling journey

Median

Destination

Origin

| Cul-de-sac | | Grid | | Modified Grid | |
|---|----------------|--|--------------|--|----------------|
| | | | | | |
| | | | | | |
| Convenience | Safety | Convenience | Safety | Convenience | Safety |
| <div>✗</div> | <div>✓✓✓</div> | <div>✓✓✓</div> | <div>✓</div> | <div>✓✓✓</div> | <div>✓✓✓</div> |
| Convenience: <ul style="list-style-type: none">Long walking, biking, or rolling distancesFew route options | | Convenience: <ul style="list-style-type: none">Shorter and more direct walking, biking, or rolling connectionsGreater choice of routes | | Convenience: <ul style="list-style-type: none">Restricted vehicular through movements (traffic diversions or closing roads to vehicles)Shorter and more direct walking, biking, or rolling connectionsGreater choice of routes for active modes | |
| Safety <ul style="list-style-type: none">Encourage slower vehicular speedsMore localized trafficLess conflict locationsSidewalks are often missing, forcing people to walk, roll, or bike on the street | | Safety <ul style="list-style-type: none">More intersections/conflict points with vehiclesHigher speeds and volumes of vehicles | | Safety <ul style="list-style-type: none">Car-free environmentsIntersections/conflict points with vehiclesLower speeds and volumes of vehicles in places | |

Making physical changes to a network of neighbourhood streets.

Adding physical features to different types of street networks that restrict vehicular through movements while providing access and maintaining connectivity for people to walk, roll, and cycle increases the convenience factor for getting to and from destinations, and reduces the potential for conflict with vehicles.

Some of these features are illustrated in the pictures below from different locations in Metro Vancouver. These features can support people-first streets that transform a neighbourhood from focusing on moving vehicles to focusing on moving people in a safe and comfortable way.

Convenience

Safety

People-first streets support the goals of convenience, safety, and comfort, as well as other priorities

Photo credit: Google Maps




Cut-through at the end of a cul-de-sac







Traffic diverter




Pedestrian and cyclist access only

4.1.5. Make active transportation facilities **comfortable and enjoyable** for people of all ages, abilities, and backgrounds, consistent with the British Columbia Active Transportation Design Guide. In particular: 

- a. Provide low-speed pathways and street crossings for walking and rolling that are comfortable for people of all ages, abilities, and backgrounds, including spaces for rest, placemaking, and social connection. Explore the use of technology to allow for longer street crossing times for those who need it. 
- b. Make it safer and easier for people who roll (including wheelchairs or strollers) to safely get around by designing wider sidewalks, installing curb cuts, removing obstructions, and repairing sidewalks. 
- c. Provide low- and medium-speed bikeways that are comfortable and accessible for people of all ages, abilities, and backgrounds, including traffic-separated bikeways or shared street neighbourhood bikeways where there are sufficiently low vehicle speeds and volumes. 
- d. Ensure the needs of people with disabilities and others experiencing barriers to accessing opportunities are always considered in the design and execution of active transportation facilities. In locations where various modal priorities intersect (i.e., adjacency of protected bikeways, transit stops, and accessible crossings with curb letdowns), prioritize the needs of people with disabilities and traditionally marginalized people in the design. 
- e. Improve the completeness, accessibility, and safety of the walkway network, especially in and around transit stops and stations.

4.1.6. Plan to accommodate the needs of the wide variety of micromobility devices with active transportation **networks that support three different speed ranges**: walking speed, slow bicycle speed, and fast bicycle speed.

- a. Future-proof facility designs to transition from bikeways to active travel pathways that include adequate space to accommodate more and potentially different users, including sometimes faster and larger electric bikes, scooters, and trikes for freight and deliveries. This will allow adequate buffer space and separation between low-speed and medium-speed users.
- b. Conduct pilot projects and research to develop suitable people-first street and network designs to accommodate the wide and evolving variety of micromobility devices.

4.1.7. Make streets **vibrant, comfortable, inviting, and inclusive** public spaces for everyone, especially in Urban Centres and Frequent Transit Development Areas through actions that: 

- a. Design to maximize accessibility and inclusion for people of all ages, abilities, incomes, housing status, and backgrounds.
- b. Provide inclusive spaces for social interactions and gatherings, including publicly accessible and inclusive parklets, plazas, and patios.
- c. Plan for the use of streets for public spaces within the context of the transportation network.
- d. Increase the use of “dark-sky-friendly” street lighting to minimize light pollution to adjacent properties, but to evenly illuminate the public realm (including sidewalks, bus stops, and parking lots) — particularly in darker and less used areas, where personal safety may be a concern.
- e. Support access to a network of safe, non-gendered, and well-maintained publicly accessible washrooms, in public venues as well as in private establishments, that are freely available to everyone.
- f. Incorporate awnings and canopies into building facades to add shelter from the elements wherever possible.
- g. Plan street furniture design and locations to meet the required street activity and needs.
- h. Protect and enhance trees, plantings, and green infrastructure as an important part of making the pedestrian experience more comfortable, including by providing shelter and contributing to a softer street environment that better supports mental health and well-being.
- i. Ensure the placement of street furniture maintains clear paths for people walking, biking, and rolling to provide unobstructed and accessible movement.
- j. Protect and support existing local small businesses, especially those that serve disadvantaged or marginalized communities.

- 4.1.8.

Increase **awareness and understanding** of how to operate vehicles safely around people walking and cycling, transit vehicles, heavy commercial vehicles and agricultural equipment, by:

a.

Working with partners to implement road safety public education campaigns.

b.

Including this as a key element of substantially more rigorous driver’s licence requirements for all vehicle licence classes in British Columbia.
- 4.1.9.

Focus **traffic enforcement** resources on targeting dangerous motor vehicle drivers, including through automated speed and traffic enforcement at high-collision intersections around the region.
- 4.1.10.

Advance a more unified regional program of **commercial vehicle safety inspections** on the region’s roads co-ordinated with the provincial Commercial Vehicle Safety Enforcement (CVSE) branch.
- 4.1.11.

Work with industry and regulators to encourage uptake of **Advanced Driver Assistance Systems** (ADAS) that include pedestrian and cyclist collision avoidance systems for heavy commercial vehicles, including buses, to help minimize collisions with vulnerable road users.
- 4.1.12.

Ensure that safety and protection of vulnerable road users is prioritized in the algorithms of any **automated and connected vehicles** permitted to operate on our region’s roads.



Strategy 4.2: Ensure everyone feels welcome, comfortable, and physically secure while getting around.


If people enjoy their transportation experience, they’re more likely to travel. Walking, biking, rolling, and using transit should be inviting and enjoyable experiences.

A key part of this is feeling comfortable, safe, and secure when travelling. Although actions around safety and security often involve enforcement, it is important to recognize that enforcement does not provide a feeling of safety for everyone. At the same time, passengers may fear verbal, physical, and sexual harassment from others while travelling on public transit. To meet diverse individual and community needs for feeling safe on transit, the actions below focus on a community-based approach by training and educating front-line staff on unconscious bias and cultural awareness, providing appropriate support with health teams and community organizations, and having community safety officers to build trust and relationships with local communities.

While there are important actions we can take to support these ends, subtle and often inexpensive improvements can go a long way to creating a positive user experience. For example, planting trees along a walkway can mean the difference between a pleasant stroll or a sweltering walk in the mid-summer heat. Installing art in public spaces can spark joy, surprise, and delight in what otherwise might have been a routine journey.

Actions

4.2.1. **Improve wayfinding** to make it easier, less stressful, and more intuitive to move around the region through:


- a. Replacing the patchwork of inconsistent signage across the region with a consistent and coherent system of physical wayfinding and regulatory signage for walking, biking, rolling, transit, and shared mobility.
- b. Work with providers of digital trip-planning applications to ensure that digital iconography and mapping conventions are consistent with the physical wayfinding system.
- c. Provide wayfinding in languages other than English, consistent with the language needs of the community. 

4.2.2. Ensure transit passengers have **room to move** around and **room to sit** if they require it through actions such as:


- a. Increasing transit service frequencies on crowded routes.
- b. Providing improved real-time information about vehicle and station capacities to help users adjust their travel times and routes.





4.2.3. Provide a **comfortable transit** experience by: 

- a. Providing appropriate heating, ventilation, and air conditioning aboard all transit vehicles and passenger facilities to minimize user exposure to the elements and airborne contaminants.
- b. Ensuring ample room for comfortable vertical and horizontal circulation within transit stations and exchanges, including well-functioning and reliable escalators and elevators.
- c. Implementing the actions from TransLink's Customer Experience Action Plan, including a new Waterfront Customer Service Centre, escalator and elevator upgrades, and an app that informs customers of bus crowding levels.


4.2.4. Ensure that everyone, including marginalized or disadvantaged individuals and groups, feels **welcome and secure** when getting around, through: 

- a. Improving safety aboard the public transit system by maintaining a zero-tolerance policy for harassment from other passengers or from staff. This is supported by training, education, and consequences, in order to make the

system welcoming to all transit users, especially disadvantaged individuals and groups, and by creating a transit-riding culture of active bystanders who are comfortable to intervene for the sake of maintaining safe and welcoming spaces for all. 







- b. Training for all staff and decision-makers of mobility service providers, especially front-line and security staff, on Indigenous cultural awareness to improve cultural competency, anti-harassment, unconscious bias, equity, diversity, and inclusion, and understanding and mitigation of systemic racism, and supporting the mobility needs of riders with disabilities.  
- c. Technology, including emergency call buttons and security cameras in vehicles, at mobility hubs, and available via smartphone apps.
- d. A robust network of clean and safe washrooms available to the public, including at mobility hubs, at major destinations, and in shopping areas. 
- e. Implementation by each mobility service provider, including transit, of a strategy to recruit and retain employees who represent marginalized or disadvantaged individuals and groups into front-line positions as well as senior management positions so that all people see themselves reflected in the transportation workforce they rely on. 
- f. Ongoing dialogue with community members to ensure that the specific safety and security needs of all people, including disadvantaged individuals and groups, are considered in the planning and operation of the transit system.

4.2.5. Support an integrated, non-punitive **community-based approach to community safety** in the Metro Vancouver region with social workers, mental health workers, first responders, community ambassadors, and non-armed Community Safety Officers working alongside police officers from local forces and the Metro Vancouver Transit Police in order to:

- a. Reduce sexual offences that occur while people are trying to get around.
- b. Reduce racist harassment and hate-motivated crimes that occur while people are trying to get around.
- c. Make riding public transit alone safer for children, teenagers, and seniors. 
- d. Reduce assaults on front-line transportation workers while they are trying to do their jobs.



- e. Help vulnerable people in crisis with the most appropriate personnel and the most appropriate techniques to ensure those individuals feel culturally and psychologically safe, are treated with respect and dignity, and can minimize the risk of harm to themselves or others.
- f. Make using public transit in quieter areas, higher risk areas, or late at night safer by increasing staff presence.

4.2.6. Provide walking, cycling, and transit **skills training, resources, and support programs** that improve safety and confidence.

- a. Incorporate cycling skills and traffic safety training into the elementary school curriculum so that all children can walk and bike in a safe and confident manner before reaching high school. 
- b. Deliver regular cycling skills training courses for adults at multiple skill levels and in multiple languages, including courses for Indigenous Peoples (where desired), for women, and for newcomers to Canada.  
- c. Where desired by the Indigenous Nation, deliver transit system orientations for youth and elders from Indigenous communities to support utilization of an increasingly technology-driven transportation system. 
- d. Support transit system orientations and skills training in multiple languages for people with disabilities, neuro-atypical people, seniors, and newcomers to Canada. 
- e. Through the Regional Youth Travel Strategy, support child and youth-focused walking and cycling programs to encourage safe, independent travel skills with co-ordination and delivery by multi-level stakeholders and government. 

4.2.7. Foster a transportation system that connects people to their communities through **art, design, landscape, and cultural recognition**.

- a. Support programs that deliver public art, including as part of transportation investments.
- b. Incorporate beauty and design excellence as an objective when designing transportation facilities, in order to make the public realm and design investments that surprise and delight and that are well integrated into the local urban context.

- c. Increase greenery and native landscapes along and around transportation corridors and facilities. 
- d. Leverage the transit system as a platform for Indigenous cultural recognition, language revitalization, and education — promoting and celebrating the rich cultural heritage of Indigenous communities from this region through design, Indigenous art, and landscaping, and naming of networks, stations, and places. 

Strategy 4.3: Minimize transportation’s adverse impacts on local communities.




Transportation service and infrastructure, while providing critical access to opportunities, can also have a variety of adverse impacts on local communities and natural systems. Environmental impacts include air pollutants, noise and vibrations, and loss of tree canopy and green spaces (and, thus, loss of biodiversity and ecosystem robustness), as well as water pollution and soil contamination. Major transportation developments may impact Indigenous cultural heritage sites and traditional Indigenous cultural practices; therefore, as appropriate, TransLink engages communities to identify and mitigate potential impacts. TransLink follows Indigenous archaeological permitting requirements and provincial laws and guidelines as required.

These impacts are typically not equally distributed. Residents most burdened by environmental impacts are those living closest to the sources: oftentimes, residents with lower incomes who live in more affordable homes on major arterial roads, truck routes, or next to major rail corridors. For residents living along such major transportation corridors, air and noise pollution is a key concern. They can disrupt sleep and daily activities, increase stress, and adversely impact health and overall quality of life.

Community health and vitality also suffer when neighbourhoods are divided by wide roads, rail corridors, and high-traffic volumes and speeds. For instance, residents are less likely to know each other, visit neighbours, or spend time on the street in such high-traffic, high-noise environments.

By taking an integrated and community-based approach to mitigating transport’s adverse impacts, we can contribute to better physical, mental, community, and ecosystem health outcomes for everyone.

Actions

- 4.3.1. Conduct **health and environmental impact assessments** for major transportation projects. Assessment should consider air quality, climate change, noise, vibrations, urban heat, tree canopy, green spaces and natural systems, water and sewage, and soil contamination impacts, as well as physical activity, traffic safety, and social impacts — with specific attention to any disproportionate and/or cumulative impacts on marginalized or disadvantaged individuals and groups. 
- 4.3.2. Reduce **air emissions** from transportation through:
- a. Implementing greenhouse gas reduction measures described in Strategies 5.2 and 5.3. Greenhouse gas reduction measures that transition away from internal combustion also eliminate tailpipe emissions, which contributes to improved air quality.
 - b. Develop regulatory requirements for existing medium- and heavy-duty vehicles, initially targeting emissions of health-harming air contaminants. Consistent with RGMS 2.7.2, this could include an inspection and maintenance program that requires repairs on high emitting trucks, registration requirements targeting older trucks, a regional smoking vehicle hotline, and low- or zero-emission zones.
- 4.3.3. Reduce **water pollution** impacts from rainwater washing pollutants off road surfaces and into waterways through working with local road authorities to develop standards for stormwater management that include interventions such as rain gardens and bioswales to collect and treat stormwater at the street level.
- 4.3.4. Establish tree canopy standards and greenery targets for all streets and major transportation infrastructure and facility projects to reduce **urban heat island** and **biodiversity-loss** impacts of transportation. 
- a. Especially for key walking, biking, and rolling corridors, and at transit stations and mobility hubs, for the comfort of street users during increasingly hot summers driven by climate instability.
 - b. Especially with priority for neighbourhoods with higher proportions of lower-income residents and members of other disadvantaged groups. 
- 4.3.5. Reduce **noise and vibrations** associated with **road-based** transportation, through actions such as:
- a. Providing routine pavement maintenance of regional roads and truck routes to minimize uneven surfaces and potholes. These create a bumpy and uncomfortable experience for road users of all types, with the loudest and most jarring noises from heavy commercial vehicles.
 - b. Increasing enforcement of posted speed limits.
 - c. Accelerating the use of pavement types and treatments on regional roads that have been shown to reduce tire and pavement noise, and that have the same safety, durability, and cost characteristics as more conventional pavement materials.
 - d. Where new medium- or higher-density development is approved along the Major Transit Network or a regional road, including any truck route, requiring the developer to incorporate noise and vibration mitigation measures, including floorplans that minimize noise intrusion, especially to bedrooms; noise and vibration absorption through building and landscape design; and sound baffles or screens to cover building openings.
 - e. Encouraging the increased use of smaller-scale vehicles (handcarts, e-trikes, bikes, vans, and automated cargo pods of various sizes and configurations) for e-commerce deliveries in Urban Centres and denser urban neighbourhoods where appropriate, including through supporting industry and municipalities in the development of neighbourhood logistics hubs to better enable consolidation of parcels in central locations for pickup by customers or use of smaller, lighter, emissions-free freight vehicles for final-mile deliveries in low-speed and pedestrianized zones.

4.3.6. Reduce **noise and vibrations** associated with **rail-based** transportation, through actions such as:

- a. Regularly performing track maintenance for heavy rail and rail-based transit to reduce track noise.
- b. Grade-separating roads and heavy rail lines within the urban area, and undertaking other measures to mitigate the use of train whistles or horns in populated areas.
- c. Incorporating measures to minimize the shunting of railcars and the assembly of trains in heavily populated areas.
- d. Installing additional rail sidings to help reduce the amount of shunting and associated noise, and safety upgrades to enable whistle cessation.

4.3.7. **Reduce neighbourhood partition** and social isolation impacts associated with wide roads and rail corridors with high speeds and volumes through actions such as:

- a. Reducing the design speed for all roads currently 50 km/hr or over within the Urban Containment Boundary (consistent with the framework set out in Strategy 4.1.), especially along the Major Transit Growth Corridors (MTGCs).
- b. Minimizing urban development around high-speed corridors.
- c. Providing more frequent at-grade crossings of roads through urban areas, especially in Urban Centres and Frequent Transit Development Areas.
- d. Providing more frequent grade-separated crossings for people to make walking, biking, or rolling connections across freeways and rail corridors passing through urban areas, especially in Urban Centres and Frequent Transit Development Areas.



Urban tree canopies make travel by active transport more comfortable, especially in a world of intensifying climate impacts

Strategy 4.4: Safely respond to and recover from disruptions and disasters.

To ensure the safety and security of the public, as well as regional prosperity, recovery, and resilience, the transportation system must be available to support communities before, during, and after emergencies and disasters. The ability to respond when time is of the essence and when lives and property are at stake urgently requires that we work together.

Actions

- 4.4.1. Create, maintain, and audit **emergency and business continuity plans** and programs based on regional assessment of existing and changing hazards, risks, and vulnerabilities. ⓘ
- 4.4.2. Conduct periodic public-facing **emergency-response training** and exercises with the public, stakeholders, the media, and all levels of government. ⓘ
- 4.4.3. Maintain an **emergency operations framework** that enables intergovernmental partners to effectively respond and recover from emergencies and disasters, and that aligns with provincial and municipal response structures. ⓘ
- 4.4.4. Support an integrated **community-based approach** to **community safety**, as noted in Action 4.2.5., to build system resiliency to help: ⓘ
 - a. Manage major events with large crowds.
 - b. Respond and help manage in the immediate aftermath of disruptions and disasters.
- 4.4.5. Engage partners and stakeholders to identify **critical infrastructure interdependencies**, align response and recovery strategies, training and exercise plans, and establish partnership agreements so that these plans can be put into action directly when events occur or when additional flexibility is needed. ⓘ

- 4.4.6. Develop and implement a regional transportation **resiliency strategy and action plan** that will: 📄
- a. Develop policies and share information and data related to hazards, risks, and vulnerabilities.
 - b. Develop a regional multi-hazard map and indicators to assess existing and changing hazards, risks, and vulnerabilities.
 - c. Explicitly consider social equity in assessing risks and vulnerabilities and in developing actions and response strategies. 🌐
 - d. Identify and consider critical regional infrastructure and system interdependencies.
 - e. Co-ordinate interagency priority actions to address transportation vulnerabilities identified, including implementation and funding strategies.
 - f. Develop post-event intervention and review processes.
 - g. Integrate resilience and hazard, risk, and vulnerability analyses into long-range transportation planning, including climate-resilient transit-oriented communities including housing and other buildings.
- 4.4.7. Prioritize investment in modes, corridors, and technologies with the **greatest capacity to adapt** to shocks, stresses, and changing conditions. 📄
- a. Avoid locating fixed transportation infrastructure in areas with unmitigated climate or natural hazards.
 - b. Avoid expansion of permanent transit infrastructure into hazardous areas. Where risk is unavoidable, such as in existing settlements, use risk-mitigation or climate change adaptation strategies in the expansion of transit infrastructure (M2050 1.2).
 - c. Develop a more flexible and resilient transportation system by advancing low-cost, low-emission travel options, such as active transportation and transit (such as described under Goal 1), to create additional layers of transportation in the event of a disruption.
 - d. Build in long-term flexibility for transportation facilities and corridors to be repurposed over time, such as unused rail corridors to multi-use paths, high-occupancy vehicle lanes to transit-only lanes, and underground parking to community amenity space.

- 4.4.8. Update **state of good repair** programs (see also Strategy 2.4) to account for resiliency that will: 📄
- a. Prioritize funding for seismic upgrades to bridges, guideways, and infrastructure.
 - b. Establish a framework for consistent identification and prioritization of resilient investments when upgrading and building new transportation assets.
 - c. Make informed decisions that include a full understanding of site hazards, risks, and vulnerabilities, including future environmental, social, economic, technological, and health risks.
 - d. Prioritize bus-based transit investments over other inflexible investments in areas with known severe flood risk.
 - e. Develop safe-to-fail protocols for regional infrastructure and assets.
 - f. Identify, review, and develop actions to minimize gaps in addressing certain hazard areas, such as cybersecurity of automated systems and climate change impacts on infrastructure.
 - g. Incorporate resiliency approaches into fleet operations by supporting long-term maintenance facility planning.
 - h. Future-proof infrastructure designs to be prepared to respond to expected impacts of increased extreme weather events.





GOAL FIVE

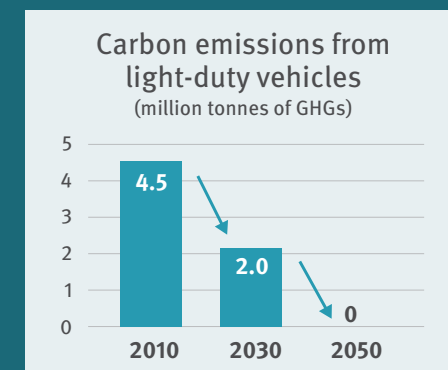
Carbon-Free Choices for Everyone

? WHERE WE ARE TODAY

“Where I live, and for the trips I need to make, I need to use a car whose emissions aren’t good for my neighbourhood or the planet. I’d like my travel to be emissions-free.”

📍 WHERE WE WANT TO BE

We all have transportation choices that are carbon-free, supporting global efforts to respond to the climate emergency such that, by 2030, we have lowered carbon pollution from light-duty vehicles by 65% over 2010 levels, and we have eliminated carbon pollution from transport altogether by 2050.



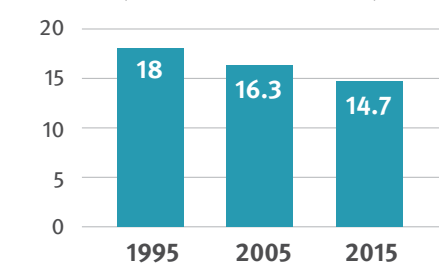
The world is currently on track for over 3°C of global warming by the end of the century, bringing severe and harmful consequences to ecosystems and communities around the world. Climate impacts — such as extreme weather, heat waves, and wildfire smoke — are already being felt in our region and are expected to intensify. Plainly, we are in the midst of an accelerating climate emergency.

To avoid the worst impacts of climate change, the United Nations Intergovernmental Panel on Climate Change (IPCC) warns that we must limit global warming to 1.5°C. This means slashing carbon pollution globally by 45% below 2010 levels by 2030, and reaching net zero emissions by 2050.

In 2008, the Metro Vancouver region set bold climate action targets and in 2019 updated them to align with the current IPCC targets. These are to reduce GHG emissions 45% from 2010 levels by

2030 and to eliminate them altogether by 2050. However, despite these bold targets and despite the urgency, our region has barely managed to achieve a 1% reduction in GHG emissions since 2010. With only eight years left to achieve a further 44% reduction, incremental changes will not suffice if the region is to come close to meeting our climate targets.

Metro Vancouver Total Regional Greenhouse Gas Emissions (million of tonnes of GHGs)



IPCC warns that this global 2030 target is not merely an interim milestone — rather, it must itself be met in order to avoid sending the global climate system past critical thresholds that we are now on the cusp of crossing. While technology may play a more significant role in helping meet our 2050 target — in order to achieve a 5–10% reduction in GHG emissions every year for the remainder of this decade to meet our 2030 target — we need significant, urgent, and immediate action by all levels of government on the scale of the mobilization that this country realized during the Second World War.

Transportation is both a contributor to the problem and a major part of the solution. In Metro Vancouver, transportation is the largest single source of greenhouse gas emissions, with on-road transportation responsible for 35% of regional emissions. While every sector must do its part to mobilize all available ideas, tools, and resources to meet our region-wide targets, the transportation sector — particularly light-duty vehicles — must play a leading role. Fortunately, the transition to a carbon-free transportation system — which is also supported by strategies and actions from Goals 1 to 4 — will yield numerous co-benefits, not the least of which include cleaner air, quieter streets, and energy savings, and new economic development and job opportunities spurred by innovation in the zero-emission transportation sector.

Reducing emissions of all types

The purpose of this goal is to reduce or eliminate greenhouse gas emissions stemming from transportation in the region — but also other health-harming air contaminants, such as nitrogen dioxide, volatile organic compounds, and particulate matter. The emission of GHGs and air contaminants is highly correlated, and so when this Goal area speaks of moving to low or zero emissions, it generally covers all tailpipe emissions. This means that addressing climate change also supports better lung health, particularly for people who live alongside busy roads.

Accordingly, the headline target for this goal is focused on light-duty vehicles — committing us to urgently reduce carbon pollution from light-duty vehicles by 65% over 2010 levels by 2030. Our region has set this more ambitious target for light-duty vehicles because:

- Heavy-duty vehicles are vital to our economy and currently have fewer options to transition to zero emissions; they will require additional support to meet region-wide targets while maintaining economically viability and competitiveness.
- Electric propulsion technology is further advanced and more economically viable for light-duty vehicles.
- Light-duty vehicles generally turn over more quickly than buildings, industry, or heavy-duty vehicles.

While no one can escape the rapidly accelerating impacts of climate change, these impacts do and will affect people differently based on who they are, where they live, and the resources at their disposal. Often, those who contributed least to carbon pollution will experience the worst impacts. Accordingly, climate justice is a key perspective that Transport 2050 brings to these actions — linking the call for climate action with the call for social equity, both globally and here within our own region.

The following pages describe what it will take to achieve our region’s goals of **reducing carbon pollution from light-duty vehicles by 65% over 2010 levels by 2030, and eliminating carbon pollution from transport altogether by 2050:**

- Reducing the overall energy requirements of the transportation system by rapidly shifting as many passenger trips as possible to the **most energy-efficient modes** — walking, rolling, cycling, and transit — in order to **reduce the kilometres driven by vehicles**. Accomplishing dramatic shifts in a short period of time will require a combination

of regulations, design interventions, and incentives.

- Reduce the overall energy requirements of the transportation system by rapidly shifting as many passenger trips as possible to the **most energy-efficient modes** — walking, rolling, cycling, and transit — in order to **reduce the kilometres driven by vehicles**; accomplishing dramatic shifts in a short period of time will require a combination of regulations, design interventions, and incentives.
- Rapid transition of vehicle fleets to electric by increasing the availability and affordability of this technology, both for light- and heavy-duty vehicles.
- Ready access to a low-carbon refuelling and charging infrastructure.
- Considering the **upstream and downstream emissions** involved in manufacturing, transporting, and disposing of transportation assets and infrastructure, we need to better account for these emissions and factor them into our purchasing and investment decisions.



On Resilience and Carbon-Free Choices

Carbon-free policy actions will reduce our dependence on fossil fuels, which are imported. A shift to more locally produced renewable energy — such as electricity or biofuels — will increase the region’s ability to weather shocks and disruptions to fossil fuel supply chains.

The widespread adoption of electric vehicles — in commercial, fleet, or individual applications — has the potential to support regional resilience by serving as distributed power storage during outages.

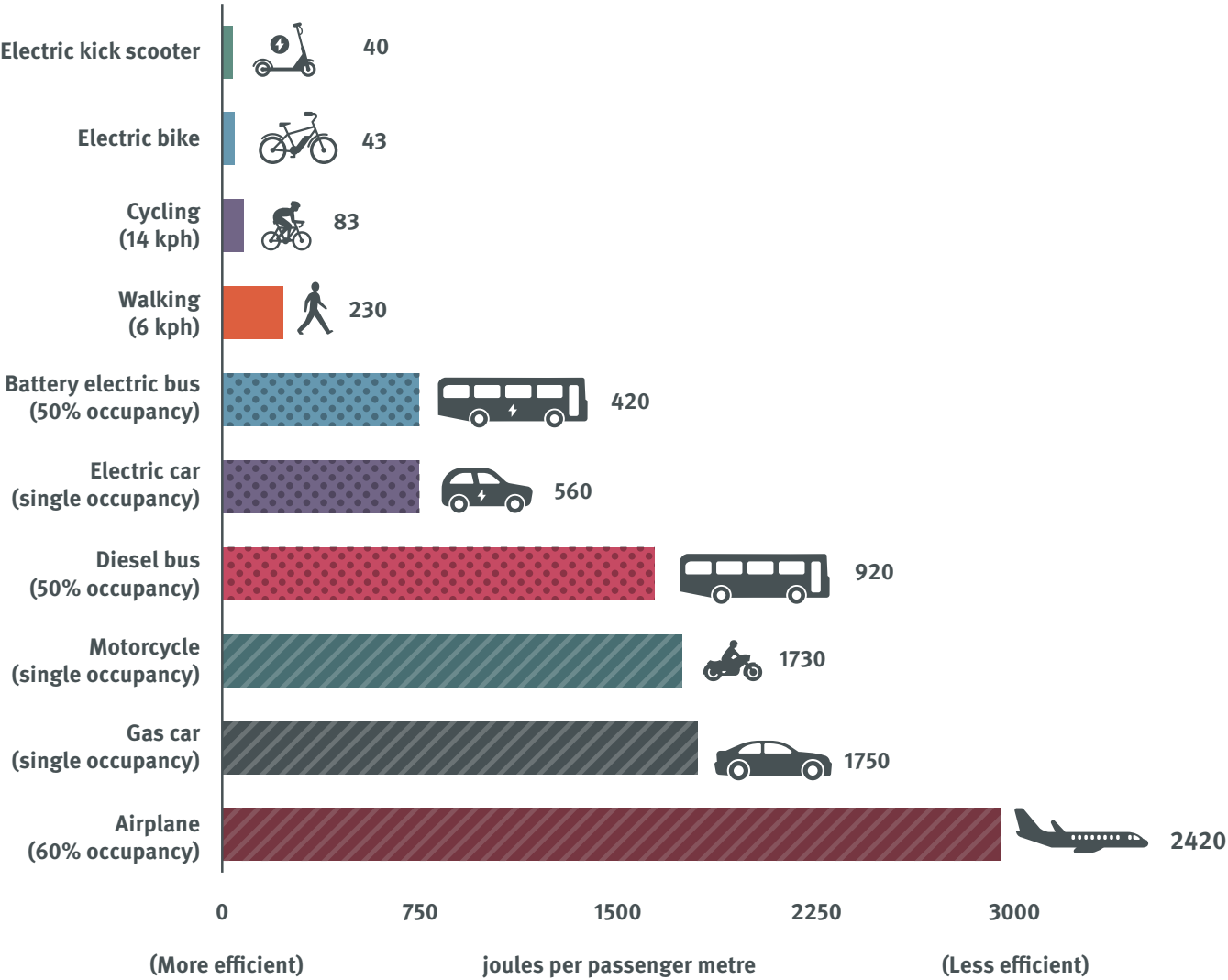
To better understand what tomorrow might bring, Metro Vancouver and TransLink partnered to develop the *Regional Long-Range Growth and Transportation Scenarios* report. This report examines four plausible futures for Metro Vancouver, which can help us identify measures to ensure that both transportation and the region are more resilient.

Strategies and Actions

Strategy 5.1: Reduce the energy requirements of the transport system.

Achieving a carbon-free transportation system requires reducing the energy needed to power the system. This is accomplished by shifting trips to energy-efficient modes in ways that align with the street design and speeds outlined in the people-first streets approach under Goal 4. Many of these actions reflect other strategies and actions in this document. Others are adapted from the Regional Goods Movement Strategy.

Figure 11: Energy Efficiency by Mode of Transportation



Actions

- 5.1.1. **Shift trips** to the most **energy-efficient modes**.
 - a. Increase the attractiveness and competitiveness of alternatives to the automobile (e.g., active transportation or transit) through the strategies and actions under Goals 1, 2, 3, and 4.
 - b. Where driving is required, create policies, incentives, and disincentives to encourage the matching of passenger vehicle size with trip need.
- 5.1.2. Design **energy-efficient cities**, with **slower overall travel speeds** and more compact land use. Refer to Strategies 1.1 and 1.2 for specific actions, and the people-first streets approach proposed under Goal 4.
 - a. Co-ordinate industrial land use and the transportation needs of the freight sector, per Action 2.2.1, to promote the efficient use of lands that considers transportation emissions implications.
- 5.1.3. Support carriers specializing in **smaller, zero-emission freight vehicles**. This includes supporting cargo bicycles and small-scale automated neighbourhood delivery pods for last-mile freight applications in **low-speed and pedestrianized zones** in the urban parts of the region by:
 - a. Designing urban bikeways and parking areas to accommodate these types of vehicles.
 - b. Establishing infrastructure and operating standards for these types of vehicles in order to prioritize the safety and comfort of people walking, biking, and rolling — especially for people with disabilities.
 - c. Providing administrative, technical, and financial support and incentives to freight and logistics companies to incorporate these types of vehicles into their fleets.
 - d. Supporting industry and municipalities in the development of neighbourhood logistics hubs where appropriate as outlined in Action 1.4.2.

Sources for Figure 11: Banister, David, “Sustainable Transport and Public Policy”, Transportation Engineering and Planning, 2009; “Mi Electric Scooter (M365)”, Xiaomi, September 19, 2018. <https://www.mi.com/us/mi-electric-scooter/specs/>; Tom McCarran, Nicole Carpenter, “Electric Bikes: Survey and Energy Efficiency Analysis”, March 8, 2018, <https://www.efficiencyvermont.com/Media/Default/docs/white-papers/efficiency-vermont-electric-bike-white-paper.pdf>; “Fuel Economy of the 2018 Nissan Leaf”, U.S. E.P.A., May 23, 2018, <https://www.fueleconomy.gov/feg/noframes/39860.shtml>; “Energy Efficiency in Transportation”, Ecohungry.com, January 12, 2022, <https://ecohungry.com/energy-efficiency-in-transportation/>

Strategy 5.2: Transition to zero-emissions vehicles.

Already in British Columbia, around one in 10 new vehicles sold is electric. We should continue to support this trend, which will do much of the heavy lifting in reducing transportation GHGs in our region. This strategy includes key actions to support the transition towards zero-emission vehicles — of all types.



For medium- and heavy-duty vehicles, the technology to support the shift to zero emissions is at earlier stages of development and commercialization. For this sector, many of the following actions will take some time to become viable, and so are expected to have a larger impact over the long term.

New challenges will also arise with the transition to electric vehicles. These include a greater dependence on our province’s hydroelectric power resources, challenges to ensuring equitable access to electric vehicles (EVs), a lack of mechanisms to ensure that EV road users pay a fair share towards regional transportation funding, loss of fuel tax revenues (which currently comprise 25% of TransLink’s revenue sources), and the possibility that a much lower per-kilometre operating cost will encourage more driving. A significant increase in driving and traffic congestion, particularly when paired with automation, will compromise some of our other goals.

Some of the strategies and actions in this section aim to address these new challenges.

Actions

- 5.2.1. Increase availability and access to **electric bikes, scooters, and other forms of electric micromobility**, which can make active transportation more accessible to more people. A number of actions under Goals 1 through 4 speak to increasing access to and awareness of micromobility in general. Some specific actions that support electrified micromobility could include:
 - a. Providing rebates or tax discounts to reduce the cost of electrified bikes, cargo bikes, and scooters.
 - b. Designing e-micromobility charging into public facilities and bike parkades to extend range.

- 5.2.2. Accelerate the **electrification of light-duty passenger vehicles**. This action builds on the existing momentum to transition light-duty passenger vehicle fleets to zero emissions. This category of vehicle includes commercial vehicles used for passenger movement.
 - a. Immediately accelerate the *BC Zero-Emission Vehicles Act* such that, by 2030 (instead of 2035), all new light-duty vehicles sold in BC are zero emission.
 - b. Develop requirements for light-duty vehicles such as low- or zero-emissions zones, or vehicle emissions levies with rebates for replacing older vehicles.
 - c. Make electric vehicles more affordable through measures such as incentives, loans, or vehicle scrappage programs for older and more polluting vehicles, and prioritizing access for low-income residents, Indigenous Peoples living in on-reserve communities, and small businesses (including drivers of the gig economy who rely on their vehicles to earn income).  
 - d. Secure commitments from government, quasi-governmental organizations, and institutional organizations in the region to immediately begin procuring zero-emission vehicles for all light-duty vehicles in order to fully transition to zero-emissions fleets by 2030.
 - e. Prioritize electrification of high annual mileage shared-use mobility fleets, including ride-hailing, taxis, and carshare vehicles, through collaboration, incentives, and regulation [see Action 1.3.4.].
 - f. Incentivize the adoption of zero-emission vehicles by reflecting an appropriate cost of carbon consistent with achieving regional, provincial, and federal GHG reduction targets in pricing mechanisms (such as where fees are paid for registration, licensing, parking, pickups, and drop-offs) or through restricting physical access for non-zero-emissions vehicles in urban areas.
 - g. Explore options to accelerate the retirement of older, more polluting vehicles, such as through temporarily increasing funding for vehicle scrappage programs, targeting gasoline or diesel vehicles with poor fuel economy and high usage.
 - h. Establish requirements for all automated vehicles, and any other newly developed transportation modes, to be zero emission ahead of *BC Zero-Emission Vehicles Act* requirements.

- 5.2.3. Support the transition of **medium- and heavy-duty vehicles** to low emissions in the near term, and zero emissions over the long term, as technologies become more commercially viable for this sector.
- a. Ensure that all public transit vehicles purchased moving forward are zero emissions.
 - b. Introduce low- or zero-emissions zones in Urban Centres and Frequent Transit Development Areas (FTDAs).
 - c. Ease travel-time restrictions for low- and zero-emission freight vehicles in certain areas and/or corridors.
 - d. Provide preferential parking, loading, and unloading zone access for low- or zero-emission freight vehicles.
 - e. Introduce loans, tax credits, and grants for purchasing and leasing low- and zero-emission freight vehicles and agricultural equipment.
 - f. Explore emissions-based licensing, parking, and pickup and drop-off charges.
 - g. Support measures that help accelerate the turnover of truck fleets as near-zero and zero-emission vehicles and autonomous technology become commercially viable and available.
 - h. Establish standards for carbon-neutral delivery certification that increase industry and public exposure to, and demand for, zero-emission freight vehicles.
 - i. Expand the *Zero-Emission Vehicles Act* to introduce sales requirements for medium- and heavy-duty vehicles.
- 5.2.4. Ensure that the **price of carbon** is aligned with the ability of the region to meet the greenhouse gas reduction targets with consideration of the full suite of actions and strategies. This will require that the senior government carbon pricing regimens be adjusted over time, or that a regional carbon price be considered to supplement.

Strategy 5.3: Support ready access to low-carbon fuels for the transportation system.

To support the transition to zero-emission vehicles, renewable fuels (such as renewable diesel, hydrogen, renewable natural gas, and biofuels) and charging systems will need to be accessible for vehicles of all sizes. This will need to be supplemented by low-emission alternatives to conventional fuels, where vehicles are unable to fully transition to zero emissions.

Actions





- 5.3.1. Urgently complete a network of **EV charging infrastructure for light-duty passenger vehicles**:
- a. Co-ordinate with all levels of government to develop a Regional Electric Vehicle Charging Strategy that evaluates the availability of charging infrastructure to support the transition to electric vehicles and considers options for filling identified gaps.
 - b. Prioritize the development of incentive or loan programs or regulatory changes (such as EV-readiness requirements in new buildings) to support charging infrastructure in low-income communities; Indigenous communities; and in rental apartments, secondary suites, and subsidized housing. 🌐 🍃
 - c. Rapidly develop a public network of vehicle charging stations that support taxis, ride-hailing, and shared mobility vehicles.
 - d. Expand the availability of electric vehicle charging in residential, commercial, industrial, and institutional buildings.
 - e. Work towards regional standards for electric vehicle charging, including design standards, data and communications protocols, and vehicle connectors. Standards will allow for more efficient interoperability and a better user experience.
 - f. Develop a co-ordinated approach for deployment of standard electric vehicle charging infrastructure, maintenance, and storage facilities for shared automated vehicle (AV) fleets.

Carbon-free public transportation

TransLink, in addition to planning the regional transportation system, is responsible for operating public transportation in Metro Vancouver. With over 200 trolley-electric and battery-electric buses, and a fully electrified SkyTrain network, TransLink has a substantial fleet that does not generate tailpipe emissions. TransLink has also adopted a Climate Action Strategy for a net-zero GHG and climate-resilient public transportation system by 2050.

translink.ca/sustainability



- 5.3.2. Develop a robust network of **EV charging** and **zero-emission refuelling** infrastructure for **commercial** freight and work vehicles and transit buses, including:
- a. Develop a Zero-Carbon Refuelling Strategy to support refuelling and charging infrastructure for commercial vehicles, in particular, medium- and heavy-duty trucks and buses, and agricultural equipment. Include identifying where refuelling stations are needed for different fuels, including electricity, hydrogen, renewable diesel, and other fuels, especially along freight routes identified in Action 2.2.3. Consider opportunities to leverage public investment in bus charging infrastructure for commercial vehicle use.
 - b. Establish incentives (including loans, tax credits, grants) for purchasing, leasing, and piloting refuelling or charging infrastructure for zero-emission freight vehicles and agricultural equipment.
 - c. Explore the viability of sharing public fast-charger access between heavy commercial vehicles.
 - d. Establish incentives to support charging infrastructure in existing commercial, institutional, and industrial buildings, and EV-readiness requirements in developments.
- 5.3.3. To address **vehicle emissions in the short- to medium-term** transition period:
- a. Continue to decrease the carbon intensity of transportation fuels, through increasing the stringency of BC’s low-carbon fuel standard and the federal Clean Fuel Standard, per direction in the *Climate 2050 Transportation Roadmap*.
 - b. Enable access to renewable biofuels for this region through strategic investments locally and abroad. 
- 5.3.4. Work with BC Hydro to ensure **sufficient and stable renewable power** to support the mass transition to electric mobility, including:
- a. Exploring measures to encourage off-peak vehicle charging to reduce pressure on the grid. 
 - b. Supporting the growth of a diversity of renewable power sources, including locally distributed power generation. 
 - c. Exploring vehicle-to-grid capabilities, which could provide peak load levelling and backup power in the event of disruptions. 

Strategy 5.4: Account for and reduce upstream and downstream emissions in the transportation system.

Beyond the operation of transportation, emissions are also generated from the construction, maintenance, and end-of-life management of infrastructure. This includes indirect emissions resulting from raw materials extraction, manufacturing, or processing; transportation; and end-of-life management of transportation infrastructure and assets, including roadways and other public assets, private and public vehicles, and fuels and energy. Concrete — widely used in transportation infrastructure — is particularly carbon-intensive and accounts for 8% of global greenhouse gas emissions and can account for up to 92%¹⁵ of the life cycle emissions of major transportation projects. These actions aim to account for and minimize these upstream and downstream emissions.

Actions

- 5.4.1. Incorporate **life cycle greenhouse gas emissions into business cases** for major transportation investments in this region.
- 5.4.2. Establish a **carbon value** that reflects current scientific consensus of the price per tonne of greenhouse gas emissions needed to reach provincial and regional greenhouse gas reduction targets and incorporate that carbon value into business cases for major transportation investments and significant program or policy decisions in this region.
- 5.4.3. Leverage public sector buying power to establish **sustainable procurement** standards that stimulate innovation towards low- or zero-emission transportation products and services.
- 5.4.4. Use **life cycle greenhouse gas emissions assessments** as a basis for advocating to senior levels of government or internationally for measures to reduce upstream emissions.

¹⁵ Refers to a 30-year life cycle. Source: Steer, “RTS GHG Estimation Methods and Results”, January 15, 2020.



Part F

Implementation Approach



The foundations of past regional transportation planning in Metro Vancouver have been strong co-ordination with regional growth management, an integrated approach to considering all transportation modes together and holistically, a geographic comprehensiveness within a coherent “commuter-shed”, and the ability to manage regional services at the regional level collaboratively across different levels of government.

These elements have been a hallmark of the region’s success over the past two decades. But the continued growth of the region and our neighbouring communities, the quickly evolving marketplace of new mobility services and technologies, and the connection of transportation with reconciliation, social equity, and resilience mean that the long-standing foundational elements described above are more important than ever and they will need to be bolstered to prepare us for the next 30 years.

The implementation strategies in this section build on these foundations in describing how we will plan, make decisions, fund, and organize ourselves to deliver on the goals and targets of Transport 2050.

6: How We Will Plan and Make Decisions

These actions describe the principles that guided the development of Transport 2050, and that we will adhere to in implementing the strategies and actions.




6.1: Act with urgency.


We will elevate and accelerate work on policy areas where near-term actions are crucial — in particular, in responding to the climate emergency, supporting Indigenous reconciliation, and addressing social inequity. We acknowledge that some long-standing regional concerns have not been addressed holistically, and we will act for purposeful change moving forward. We will work to harness the windows of opportunity to act quickly on urgent issues by focusing resources in the next five years through policy, regulatory, and investment decisions.

6.2: Prepare for uncertainty.


We will prepare for change, uncertainty, and risk through proactive solutions that value adaptability, innovation, and resiliency. We recognize that today’s decisions cannot fully account for changes that region will experience in the future. In response, we will prioritize actions that not only benefit today’s transportation system but that are also flexible and adaptable to make us resilient against a range of possible futures. We will also use comprehensive performance monitoring to track progress relative to desired outcomes and drivers of change.

6.2.1. Update the Regional Transportation Strategy every five years to:

- a. Incorporate feedback from comprehensive regional transportation monitoring, as outlined in Part H.
- b. Consider new actions to address changing conditions, as needed. 
- c. Co-ordinate with updates to the Regional Growth Strategy.
- d. Incorporate deepening understanding of shocks and stresses and new best practices to incorporate resilience. 
- e. Incorporate more detailed analysis from subsequent modal and thematic strategies.
- f. Incorporate strategies and actions related to reconciliation through ongoing engagement with Indigenous Nations. 

6.2.2. Use **scenario-planning** and **exploratory modelling** to test investments and initiatives against multiple plausible — but quite different — futures, rather than against a single-point forecast future. 


6.2.3. Prototype, experiment, pilot, and **innovate with purpose**.

- a. Partner with key stakeholders, including disadvantaged individuals and groups, to pilot new solutions, such as mobility technology prototypes and service programs. 
- b. Develop key performance indicators to assess the efficacy of pilot solutions to support regional goals.
- c. Monitor and evaluate innovative solutions before making them permanent and scaling them up.
- d. Utilize performance evaluation of pilot solutions to inform decisions for future policies and funding.


6.3: Be inclusive.

We will ensure that transportation planning processes are accessible and inclusive of the people we serve, engaging with the public to identify issues, opportunities, aspirations, and solutions.

6.3.1. **Continue engaging with Indigenous Nations and urban Indigenous Peoples** to understand and address barriers to accessibility, equity, and inclusion. Continue engaging with people and organizations that represent people with lived experience of discrimination and marginalization to understand and address barriers to accessibility, equity, and inclusion — such as inclusive planning processes and improved social equity competency for staff and decision-makers, as described in Action 4.2.4.  

6.3.2. **Develop a Regional Social Equity Strategy**, through engagement with marginalized and disadvantaged groups and in partnership with local and regional governments, that establishes principles, objectives, strategies, and measures of success to advance a more just, equitable, and inclusive region by considering the factors that impact an individual’s experience of social equity, including: 

- a. Race, faith, national origin, and language.
- b. Sexual orientation and gender identity.
- c. Ability and developmental diversity.
- d. Age.
- e. Socio-economic group.

6.3.3. Update **engagement practices** and establish guidelines for social equity-based engagement approaches to make them more equitable and inclusive of everyone, including: 

- a. Identifying approaches that permit focus on unique community needs.
- b. Focusing on building relationships through ongoing dialogue with disadvantaged groups.
- c. Establishing and maintaining advisory bodies such as equity-based working groups, community advisory committees, or an ongoing community advisory board, or co-design labs.
- d. Including disadvantaged groups in co-development processes.
- e. Developing opportunities for regular input outside of formal engagement processes.
- f. Identifying and removing barriers preventing disadvantaged groups from participating and providing input.
- g. Identifying various methods and formats for engagement that incorporate practices that are familiar within communities.
- h. Ensuring diverse representation in written and visual marketing and communications materials.


6.3.4. Broaden existing planning processes, network design objectives, performance measures, and guidelines for transportation service and infrastructure to better **incorporate additional social equity considerations** and better serve the needs of disadvantaged individuals and groups.


6.4: Make evidence-based decisions.


We will review, adapt, and improve our methods for decision-making and investment choices to advance our region’s goals and objectives. Using a structured decision process requires data as well as a clear understanding of values to evaluate key trade-offs between viable solutions.


A key source of data is the Regional Transportation Model. This model is developed and administered by TransLink to help inform decision-making at the regional and local level. The model inputs include population, land use, and road and transit network details, and is informed by a regional trip survey undertaken every five years. The model is used for strategic purposes to help forecast and evaluate the impact of various policy and infrastructure interventions and investments.

Limited data availability is a challenge that needs to be addressed with new data sources and methodologies. We will rely on both technical and values-based input and perform sound research to support our assessment to select the best possible outcome that achieves multiple objectives. We will ensure evidence is used in a way that reflects our values and priorities by:

- 6.4.1. **Collect data** essential to planning, monitoring, and evaluating against the desired outcomes of Transport 2050: 
- a. Develop a robust regional and cross-jurisdictional transportation monitoring program with shared accountability and oversight and the data infrastructure, systems, resources, governance, and management protocols in place to enable efficient and responsible data use and sharing with partner agencies.

b. Monitor headline targets and key performance indicators supportive of the goals of Transport 2050, and incorporate these measures into decision-making. 

c. Establish inclusive performance guidelines for the road and transit systems to assess the effectiveness of investments and guide future investment decisions. 

d. Use real-time data to support planning for transportation infrastructure, as described in Strategy 2.3.
- 6.4.2. **Incorporate an equity lens into decision-making processes** that asks not just whether a policy or investment works, but also who it works for, and who it doesn’t work for. This is achieved by: 
- a. Developing a framework for community-based data and research, including from disadvantaged groups, that outlines values and uses of data. The framework should be co-developed with relevant groups, including processes and data collection.

- b. Updating decision-making processes to include social equity impact assessments, which consider equity as a decision-making criterion to help inform prioritization of investments.

c. Developing an equity data strategy that fills gaps in equity data and understanding by collecting demographic data to support social equity in transportation. This data strategy will include data related to personal safety, crime, and policing, and will consider lived experiences and qualitative data as valuable evidence to triangulate quantitative data.

d. Developing an equity impact model to understand the effects of decisions on equity.

e. Adopting best practices for reaching diverse populations using appropriate channels, methods, and materials, and sharing data back to the community for transparency.

f. Developing a transparent public-facing tool to explore equity.

6.5: Ensure transparency.

We will ensure our decision-making processes are transparent and accessible to the people we serve. It is our priority for the public to understand the decision-making processes at play. We will achieve this by providing opportunities to hear from and communicate with the public to inform key decisions.

- 6.5.1. Publish an **annual progress report and public dashboard** on the implementation status of Transport 2050.
- 6.5.2. Establish **information-sharing methods with Indigenous Nations** and support ongoing dialogue on the implementation of action plans. 
- 6.5.3. Work with each Indigenous Nation **to ensure that processes reflect the needs and interests of each Indigenous Nation** (e.g., permitting processes, cultural heritage preservation, and archaeological interests). 
- 6.5.4. Establish **open data policies and portals** for key transportation data sets while adhering to responsible data use principles per Action 6.7.5.

6.6: Collaborate with organizations, agencies, and partners.

We will continue to collaborate with Indigenous organizations, other public agencies, private partners, and non-profit community agencies to deliver a seamless transportation system that embodies the region’s values and supports local and regional initiatives. Input and implementation by different levels of government and sectors are required to fully realize the benefits of Transport 2050. Collaboration will ensure that local and regional perspectives are considered, and that solutions that maximize benefits for users are valued.

- 6.6.1 Each partner is strongly encouraged to develop **implementation plans** in support of Transport 2050. These plans may include costing, potential funding sources, prioritization and phasing of initiatives, implementation targets, and roles and responsibilities.
- 6.6.2 Explore opportunities to provide new or augmented transit service through **third-party transit service partnerships**, where service is funded by private sector or community partners. This may come in the form of increased service levels on existing transit service, accelerating planned service improvements identified in investment plans, or providing new transit access to areas or markets not currently well served.

6.7: Channel private sector innovation towards achieving public benefits.

We will work to ensure that decisions and innovations prioritize benefits for the general public and support regional goals. We will continually evolve by being open, creative, and nimble, and by purposefully exploring new solutions and, where suitable, channelling them to maximize regional benefits. We recognize the region’s transportation system includes various public and private services and interests that are reflective of different priorities and values. Through partnerships, collaboration, and engagement, we will strive for all services and decisions, including implementation of new mobility technologies, to be guided by public benefit.


What is surveillance capitalism? Where digital and smart city innovations are introduced to extract and accumulate personal data in order to predict and control human behaviour as a means of maximizing revenue and market control.

In particular, the move to more heavy reliance on digital technology needs to be accompanied by measures to improve equity, privacy, transparency, and accountability while still leaving opportunities to leverage the significant potential public benefit from big data and from products powered by artificial intelligence. This approach is in contrast to the current trends being advanced by “surveillance capitalism” firms to actively undermine transparency, privacy, and individual autonomy.

- 6.7.1 Develop a **legislative framework to support Mobility-as-a-Service (MaaS)** for passengers and for freight — allowing mobility providers of all sizes and with all sizes of marketing budgets to compete on price and service quality, rather than on market capture and monopolistic powers.
- 6.7.2 Establish or identify a regional or provincial entity to function as an **urban data trust**, responsible for managing the mobility data warehouse (or “mid-layer”), including:
 - a. Receiving real-time standardized mobility data via API from all mobility service providers licensed to operate in the region.
 - b. Auditing and validating that data.
 - c. Consolidating the shareable read-write data on vehicle availability, location, capacity, price, and booking for all transportation services, and making it available via API to any licensed third-party aggregator in order to enable an open and competitive ecosystem of third-party aggregator apps offering trip planning, booking, and payment for all services from a single interface.
- 6.7.3 Establish a regional **Transport System Manager** function with the ability to license/permit a broad range of mobility service providers for operation in the region. A regional approach is intended to provide a simplified one-stop shop for industry; prevent a patchwork of local regulations; maintain a level playing field for open, fair competition; establish consistency in requirements across mobility industry sectors (such as data requirements); and support service provision to underserved communities, including providing incentives to industry to achieve equity goals. The approach should also be nimble enough to respond and adapt to new technologies and business models that could come into play in this region over the next 30 years.




Automated delivery bots are currently being introduced in city streets around the world

- 6.7.4. Require mobility service providers licensed or permitted to operate in this region to **share real-time mobility data** via API with the urban data trust for the purposes of:
- Retrospective planning analysis and forecasting input.
 - Auditing and enforcement of licence terms and conditions in support of regional and local objectives.
 - Dynamic system management.
 - Enabling an open and competitive Mobility-as-a-Service ecosystem.
- 6.7.5. Require all proposed digital innovations described throughout Transport 2050 be consistent with the approach to **responsible data use** and in accordance with BC Privacy Commissioner guidance.
- 6.7.6. Pursue a **people-first technology approach** for transportation system elements that features:
- Transparent and easy-to-read terms and privacy policies for any service asking to use personal data. 
 - Data traceability, enabling everyone who consents to share data with a service to be able to easily trace where it goes and how it's used — in plain and accessible language.
 - Collaborative and decentralized machine learning that focuses on privacy and anonymity by not centralizing user data with a single large-platform company.
 - Result traceability and algorithm testing that explains how AI predictions were made, in order to help fix biased results.

6.8: Balance multiple demands for limited space.

Achieving our ambitious goals for 2050 will require rethinking and evolving how we use our streets. Priorities for pedestrian, cycling, transit, goods movement, and driving will need to be considered and reconciled along corridors where important needs for these different modes have been identified and where they overlap.

In corridors that are constrained, where there is not sufficient road space to accommodate all needs, prioritizing the movement of people and goods means that, compared to today's approach, we will need to give greater consideration to needs related to walking, biking, rolling, transit, and goods movement over that of general-purpose traffic that is significantly comprised of single-occupant vehicles. When and where different modes receive greater consideration will be influenced by land use context and by the role a street segment plays in the overall functioning of each modal network.




- 6.8.1. For areas of the street dedicated to mobility, apply the following **space allocation and prioritization principles** when people using multiple different modes of transportation — including walking, rolling, cycling, transit, light-duty personal cars, and commercial vehicles of all sizes — are vying for space on a particular street that is too narrow to accommodate all interests at all times:
- Urban Centres and Frequent Transit Development Areas are the places where we give greater priority to walking, biking, rolling, and transit, and where we have greater tolerance for slower speeds of travel for general-purpose traffic, while maintaining access for commercial vehicles.
 - Between Urban Centres and Frequent Transit Development Areas, along frequent transit corridors, or on corridors where high levels of transit passenger delay are experienced, we give greater priority to transit.
 - Along Major Bikeway Network corridors, we strive to provide bikeways that are comfortable for most people to use. If space is constrained on a street and there are no opportunities to establish a bikeway on a parallel street, then we give greater priority within those space-constrained streets to establishing critical cycling connections to create a useful, connected cycling network.
 - For key connections to and within manufacturing and industrial areas, we give greater priority to goods movement.
- 6.8.2. Develop a more detailed **streets management framework** that considers land use and different modal networks — including walkways, bikeways, transit, and driving people and freight — and assess relative modal priorities for each street segment in the region in ways consistent with the goals of Transport 2050. This framework will help to reconcile overlapping priorities where specific street segments have both limited space in the right-of-way and high importance for multiple networks. 

7: How We Will Fund

Delivering the vision and goals of Transport 2050 will require funding. This section speaks to the need for developing sustainable funding sources for transportation in this region that supports the goals and values of *Transport 2050*.

7.1: Align funding with regional values.

We will ensure that transportation funding sources reflect our regional values (as outlined in the Transport 2050 Goals), in which inequities and unaffordability are not exacerbated, access to transit is supported, private benefit from public investment is recaptured for public benefit, and there is a balance of contributions from usage fees and from taxes to ensure stable and resilient revenue.

- 7.1.1. Examine funding sources for transportation in the region that **capture the value of public investment** in transportation to different beneficiaries.
- 7.1.2. Update existing funding sources and establish new sources that **advance regional goals and objectives**, and monitor the impacts of funding sources on regional objectives. 
- 7.1.3. Balance the use of gas and carbon tax to **address urgent climate change needs** in the near term, while transitioning to a longer-term funding source for transportation as fossil-fuelled vehicles are phased out of use. 
- 7.1.4. Per Strategy 3.3, ensure that transportation **funding sources balance goals** such as emissions reductions and demand management with consideration of ability to pay.
- 7.1.5. Make **efficient and effective investment decisions** that make the best use of public dollars: 
 - a. Reduce future capital, operation, and maintenance funding burdens by supporting land use patterns that minimize distances and trips (see list of land use actions).
 - b. Prioritize investment and improvements in modes that increase cost efficiency in meeting regional goals.
 - c. Factor full life cycle costs (including operations, maintenance, and upstream and downstream greenhouse gas emissions) into transportation infrastructure decisions, to ensure prioritization of infrastructure that is most cost-efficient and financially sustainable over the long term, relative to person throughput (see also Actions 5.4.1. and 5.4.2.).

8: How We Will Organize Ourselves

Good regional governance, which is an essential condition for achieving desirable regional development and transportation outcomes, has been a hallmark of this region’s success to date. A strong starting foundation of good governance, enabled by strong relationships and organizations, is required to build a robust and resilient transportation system, and to achieve the *Access for Everyone* vision in Transport 2050.

As a priority, Transport 2050 commits to developing options for transportation governance to enable the actions required of many in the region. These options should consider the following needs:

- Improvement in areas of existing mandate where clarity or completeness in responsibilities and authority can enhance outcomes
- Consideration of geographic scope, for example, to enable provision of a broader range of services within the current *South Coast British Columbia Transportation Authority Act* service area, or outside of it
- Incorporation of clear assignment of mandate and accountability around areas of new transportation policy mandate (such as social equity, or affordable housing) or newly emerging mobility infrastructure and services

The introduction of new mandates introduces new institutional and organizational relationships and accountabilities. The basic governance infrastructure to support clear, timely, responsive, and accountable decisions will be defined at the outset of Transport 2050’s implementation to assure the goals can be met.

8.1: Collaboration with Indigenous Nations.


We will work with Indigenous Nations, the federal and provincial governments, and regional partners to ensure that the implementation of Transport 2050 adheres to the implementation of both UNDRIP and the *Declaration on the Rights of Indigenous Peoples Act* (DRIPA) Action Plan. This will include creating inclusive regional governance processes that will be required to implement the strategies and actions identified as priorities through the Transport 2050 Indigenous Advisory Council (IAC).

Through the Transport 2050 IAC, we have consistently heard from non-treaty Indigenous Nations that an enhanced and well-defined role in governance and representation in decision-making are key interests.

Through ongoing engagement with Indigenous Nations, governments, and partners, on the implementation of Transport 2050, the role of Indigenous Nations in the governance will be further defined.

8.2: Build inclusive workplaces and organizations.

Diversity within transportation organizations at all levels is critical to meeting the needs of the region and the communities we serve. In order to effectively understand equity challenges that many people in this region face, the transportation industry needs to reflect the broad-ranging and diverse communities it serves. This section contains actions to advance inclusion in the transportation sector.

- 8.2.1. Work collaboratively and within **public agencies to increase social equity, diversity, and inclusion** in areas such as: 
- a. Hiring and recruitment.
 - b. Retention, promotions, and career development.
 - c. Discipline and separation.
 - d. Diverse and equitable leadership.
 - e. Organizational culture.
 - f. Providing equity, diversity, and inclusion (EDI) training for everyone involved in the planning and implementation of transportation in this region.



8.3: Align governance frameworks with the needs of tomorrow’s transportation system.

As the region embarks to implement the strategies and actions in Transport 2050, a vital first step will likely need to introduce new mechanisms and structures of oversight and governance to address emerging priorities (such as a growing region, new technologies, and new business and service delivery models) and the policy integration we are seeking for issues such as equity, affordability, and resilience.

- 8.3.1. Establish a **collaborative mechanism** (such as a task force, special-purpose panel, or policy-makers forum) to initiate dialogue with local, regional, provincial, and stakeholder interests to address the **evolution of regional transportation governance**. Provide this task force with a mandate to report on options to modernize regional transportation mandates, authorities, and structures to best govern effective and timely implementation of the strategies of Transport 2050. The following principles would guide the work:
- a. The scale of the planning or policy issue (local, regional, provincial) should drive the decision-making structures and mandate responsibilities, ensuring effectiveness, efficiency, responsiveness, and accountability.
 - b. Authorities and tools should be provided to enable fulfilment of mandate responsibilities.



New governance models could advance new forms of innovative and integrated multimodal travel



Part G

**Roles and Responsibilities:
What Commitments Are
Required — By Whom?**



The broad range of strategies and actions set out in Part E and Part F represent a comprehensive picture of what is needed to achieve the goals and targets of Transport 2050. Success will require unprecedented levels of co-operation and co-ordination of many different partners across the region, from governments to the private sector to community organizations. Because the strategies and actions are interdependent, it will be important that each group be able to act with confidence that the other partners are committed to parallel supporting actions.

For **local governments**, the most important actions are to make changes to local community plans and zoning in order to shape the nature and location of growth within the region, consistent with Metro 2050. In addition, the local walkways, bikeways, streets, and curbsides for which they are responsible will need to be designed and managed in new ways consistent with the goals, targets, and frameworks outlined in Transport 2050.

For **Metro Vancouver**, the most important actions are to support implementation of the transit-oriented regional growth concept in Metro 2050, including directing as much future growth as possible to Urban Centres and Frequent Transit Development Areas; supporting an abundant supply of transit-oriented affordable housing; expanding access to a quality network of regional parks and greenways; and managing and regulating air contaminants in the region, including greenhouse gases from transportation.

For **TransLink**, in addition to its role as a regional transportation authority in providing an overarching framework in the form of Transport 2050, the most important actions are to ambitiously expand and accelerate regional investment in walkways, bikeways, and transit service; to co-facilitate and co-fund an ambitious reimagining of our region’s streets, including moving quickly to co-ordinate and fund significant transit priority measures and dedicated transit lanes across the Reliable & Fast Transit Network; to develop capabilities as a Transport System Manager operating a real-time mobility management system; and to help co-ordinate the diverse efforts needed to make this strategy a reality.

For **Indigenous Nations**, the key interests shared through the Indigenous Advisory Committee (IAC) fall under the themes of improved service provision; representation, decision-making, and governance; and project consultation and engagement processes. TransLink will work closely with Indigenous Nations, and with governments and partners where applicable, to support the implementation of the actions informed by the IAC.

For the **Province of British Columbia**, the most important actions are to continue to develop the provincial transportation system consistent with the aspirations of the region as outlined in Transport 2050, Metro 2050, and Climate 2050; supporting TransLink in the advancement of reconciliation with Indigenous Nations and Indigenous Peoples; supporting and co-funding the Reliable & Fast Transit Network as outlined in this strategy, including by providing the region with revenue tools; introducing policy measures and incentives to accelerate the decarbonization of the light-duty vehicle fleet; and laying the digital infrastructure and regulatory foundations needed to effectively manage the automated, connected, electric, and shared transportation system of tomorrow.

For the **Government of Canada**, the most important actions are to commit to supporting and co-funding the Reliable & Fast Transit Network as outlined in this strategy; supporting TransLink in the advancement of reconciliation with Indigenous Nations and Indigenous Peoples; introducing thoughtful regulations to manage the arrival of automated vehicles; and introducing policy measures and incentives to accelerate the decarbonization of the entire transportation sector.

Roles and Responsibilities

The following table identifies the potential role of each partner in working together to implement the strategies and actions within Transport 2050. These tables have been developed based on existing roles and responsibilities for each topic area. However, as these actions evolve over time, these roles could also change; therefore, these tables should be treated only as a suggested starting point to demonstrate continued collaborative efforts. For some actions that are particularly nascent, roles and responsibilities have not been identified; instead, a note is provided to explore governance for these future-oriented initiatives. Action 8.3 describes a potential pathway for addressing these future-oriented initiatives. The table covers all strategies and actions under Goals 1–5. Implementation actions are not detailed in this table, as they are the responsibility of all levels of government.

As discussed with the IAC, TransLink will work with Indigenous Nations to understand their interests and priorities (e.g., transportation options for the community). Action plans will be developed to guide the shared implementation of the appropriate strategies and actions. The Plans will be shared directly with the Indigenous Nations.

| Actions | Short Description | Local Govt | TL | MV | Prov (incl. Crown corps) | Federal (incl. Crown corps) | Private Sector/ Community Orgs/ Academia |
|---|---|---|----|----|--------------------------|-----------------------------|--|
| 1.1. Make active transportation the most convenient choice for shorter trips. | | | | | | | |
| 1.1.1. | Complete communities and active modes | • | • | • | • | | • |
| 1.1.2. | Walkable neighbourhood street networks | • | | | | | |
| 1.1.3. | Walkways | • | • | • | • | | |
| 1.1.4. | Bikeways | • | • | • | • | | |
| 1.1.5. | Shared micromobility | • | • | | • | | • |
| 1.2. Make transit the most convenient choice for longer trips. | | | | | | | |
| 1.2.1. | Transit-oriented regional growth | • | • | • | • | | |
| 1.2.2. | Accessible, equitable, and inclusive transit system | • | • | | • | | |
| 1.2.3. | Frequent local fixed-route transit service | • | • | | | | |
| 1.2.4. | Frequent Transit Network | • | • | • | • | | |
| 1.2.5. | Express transit connections | <i>Requires further discussion on future governance</i> | | | | | |
| 1.2.6. | Demand-responsive transit service | • | • | | | | • |
| 1.3. Make it convenient for all households to make the occasional car trip without needing to own a car. | | | | | | | |
| 1.3.1. | Taxis and ride-hailing services | • | • | | • | | • |
| 1.3.2. | One-way and two-way carsharing | • | • | | | | • |
| 1.3.3. | Parking and charging for shared vehicles | • | • | • | • | | • |
| 1.3.4. | Zero-emission carshare vehicles, taxis, and ride-hail vehicles | • | • | • | • | | • |
| 1.3.5. | Pricing, regulations, and public investment for automated and passenger-directed vehicles | • | • | | • | • | • |
| 1.4. Seamlessly connect different transport services both physically and digitally. | | | | | | | |
| 1.4.1. | Mobility hubs | • | • | | • | | • |
| 1.4.2. | Neighbourhood logistics hubs | • | • | | | | • |
| 1.4.3. | Mobility-as-a-Service | <i>Requires further discussion on future governance</i> | | | | | |
| 1.4.4. | Digital connectivity | • | | | • | • | • |

| Actions | Short Description | Local Govt | TL | MV | Prov (incl. Crown corps) | Federal (incl. Crown corps) | Private Sector/ Community Orgs/ Academia |
|---|---|---|----|----|--------------------------|-----------------------------|--|
| 2.1. Make transit more reliable. | | | | | | | |
| 2.1.1. | Transit priority | • | • | | • | | |
| 2.1.2. | Dedicated transit lanes | • | • | | • | | |
| 2.1.3. | Transit priority measures | • | • | | • | | |
| 2.1.4. | Management and enforcement to minimize transit delay | • | • | | • | | |
| 2.1.5. | Transit priority planning and design | | • | | • | | • |
| 2.2. Make goods movement more reliable. | | | | | | | |
| 2.2.1. | Land use needs of goods movement, industry, and agriculture | • | • | • | • | | • |
| 2.2.2. | Consolidation of goods and deliveries | | | | | | • |
| 2.2.3. | Road capacity | • | | | • | | • |
| 2.3. Make driving and parking more reliable. | | | | | | | |
| 2.3.1. | Network of local streets | • | • | | | | |
| 2.3.2. | Network of regional roads | • | • | | • | | |
| 2.3.3. | Controlled-access highways | | • | | • | • | |
| 2.3.4. | Urban mobility data | <i>Requires further discussion on future governance</i> | | | | | |
| 2.3.5. | Parking, pickup and drop-off, and loading/unloading spaces | • | • | | • | | • |
| 2.3.6. | Dynamic management of AVs and other road users | <i>Requires further discussion on future governance</i> | | | | | |
| 2.3.7. | Inform real-time trip choices | | • | | • | | • |
| 2.3.8. | Integrated pricing and fares between mobility providers | <i>Requires further discussion on future governance</i> | | | | | |
| 2.3.9. | Commute trip reduction programs | <i>Requires further discussion on future governance</i> | | | | | |
| 2.3.10. | TDM programming | • | • | | • | | • |
| 2.3.11. | TDM in multi-family and commercial buildings | • | • | | | | • |
| 2.3.12. | Pay-as-you-drive insurance | | | | • | | |

| Actions | Short Description | Local Govt | TL | MV | Prov (incl. Crown corps) | Federal (incl. Crown corps) | Private Sector/ Community Orgs/ Academia |
|--|--|------------|----|----|--------------------------|-----------------------------|--|
| 2.4. Maintain transportation infrastructure in a state of good repair. | | | | | | | |
| 2.4.1. | Monitor asset condition | • | • | | • | | |
| 2.4.3. | Sufficient and timely funds for state of good repair | • | • | | • | • | |
| 3.1. Make living close to frequent transit more affordable. | | | | | | | |
| 3.1.1. | Rental housing adjacent to transit | • | • | • | • | | • |
| 3.1.2. | Land speculation | • | • | | • | | • |
| 3.1.3. | Parking management | • | • | • | | | |
| 3.1.4. | Community-serving retail | • | • | • | | | |
| 3.2. As a priority, invest in transportation modes that are lowest cost and most affordable to residents. | | | | | | | |
| 3.2.1. | Transit service and active transportation in low-income areas | • | • | | • | | |
| 3.2.2. | Bicycles and micromobility devices at low cost | • | • | | | | • |
| 3.2.3. | Secure bike charging and parking in multi-family and rental buildings | • | | | | | |
| 3.2.4. | Subsidies for electric vehicles, e-bikes, and bikes for low-income individuals | | | | • | | • |
| 3.2.5. | AVs to support low-income individuals in remote locations | • | • | | | | • |
| 3.3. Ensure that transportation taxes and fees are affordable for everyone. | | | | | | | |
| 3.3.1. | Funding for transportation system | • | • | • | • | | |
| 3.4. Help people and businesses connect to more economic opportunities. | | | | | | | |
| 3.4.1. | Access to local shopping | • | | | • | | |
| 3.4.2. | Access to local jobs | • | • | • | • | | |
| 3.4.3. | Access to markets, suppliers, customers, and workers | | • | | • | | |
| 3.4.4. | Agricultural sector | • | | • | • | | |
| 3.4.5. | Thriving transportation workforce | | • | | • | | |

| Actions | Short Description | Local Govt | TL | MV | Prov (incl. Crown corps) | Federal (incl. Crown corps) | Private Sector/ Community Orgs/ Academia |
|--|---|--|----|----|--------------------------|-----------------------------|--|
| 3.4.6. | Transition for transportation workforce | | • | | • | | |
| 3.4.7. | Piloting and innovation | | • | • | • | • | • |
| 4.1. Eliminate traffic fatalities and serious injuries. | | | | | | | |
| 4.1.1. | Speed limits | • | | | • | | |
| 4.1.2. | People-first streets | • | • | | | | |
| 4.1.3. | People-first street typology | • | • | | | | |
| 4.1.4. | Prioritize protection for road users with the least physical protection | • | • | | • | | |
| 4.1.5. | Active transportation facilities | • | • | • | • | | |
| 4.1.6. | Micromobility networks | • | • | | | | |
| 4.1.7. | Vibrant, comfortable, inviting, and inclusive public spaces | • | • | • | | | |
| 4.1.8. | Training and awareness for drivers | | • | | • | | • |
| 4.1.9. | Traffic enforcement | • | • | | • | | |
| 4.1.10. | Commercial vehicle safety inspections | | • | | • | | • |
| 4.1.11. | Advanced Drivers Assistance Systems (ADAS) | | • | | • | • | • |
| 4.1.12. | Deployment of AVs | Requires further discussion on future governance | | | | | |
| 4.2. Ensure everyone feels welcome, comfortable, and physically secure while getting around. | | | | | | | |
| 4.2.1. | Wayfinding | • | • | | • | | |
| 4.2.2. | Room to move and sit on transit | | • | | | | |
| 4.2.3. | Comfortable transit experience | | • | | | | |
| 4.2.4. | Welcome and secure on shared transportation and transit | • | • | | • | | • |
| 4.2.5. | Community-based approach to community safety | • | • | | • | | • |
| 4.2.6. | Training for walking, biking, transit skills | | • | | | | • |
| 4.2.7. | Art, design, landscape, and cultural recognition | • | • | | • | | |

| Actions | Short Description | Local Govt | TL | MV | Prov (incl. Crown corps) | Federal (incl. Crown corps) | Private Sector/ Community Orgs/ Academia |
|---|---|------------|----|----|--------------------------|-----------------------------|--|
| 4.3. Minimize transportation’s adverse impacts on local communities. | | | | | | | |
| 4.3.1. | Health and environmental impact assessments | • | • | | • | | |
| 4.3.2. | Air emissions | | | • | • | • | |
| 4.3.3. | Water pollution | • | • | • | • | | |
| 4.3.4. | Tree canopy and greenery | • | • | • | • | | |
| 4.3.5. | Noise from road-based transportation | • | • | | • | | |
| 4.3.6. | Noise from rail-based transportation | | • | | • | | • |
| 4.3.7. | Reduce neighbourhood partition and social isolation | • | • | • | | | |
| 4.4. Safely respond to and recover from disruptions and disasters. | | | | | | | |
| 4.4.1. | Emergency and business continuity plans | • | • | | • | | |
| 4.4.2. | Emergency response trainings | • | • | • | • | | • |
| 4.4.3. | Emergency operations framework | • | • | • | • | | • |
| 4.4.4. | Community-based approach to community safety | • | | | • | | • |
| 4.4.5. | Critical infrastructure interdependencies | • | • | • | • | | |
| 4.4.6. | Transportation resiliency strategy | • | • | • | • | | |
| 4.4.7. | Capacity to adapt to shocks | • | • | | • | | |
| 4.4.8. | State of good repair | • | • | | • | | |
| 5.1. Reduce the energy requirements of the transport system. | | | | | | | |
| 5.1.1. | Energy-efficient modes | • | • | | • | | • |
| 5.1.2. | Energy-efficient cities | • | | • | • | | |
| 5.1.3. | Smaller, zero-emission freight vehicles | • | • | | • | | • |

| Actions | Short Description | Local Govt | TL | MV | Prov (incl. Crown corps) | Federal (incl. Crown corps) | Private Sector/ Community Orgs/ Academia |
|--|--|------------|----|----|--------------------------|-----------------------------|--|
| 5.2. Transition to zero-emissions vehicles. | | | | | | | |
| 5.2.1. | Access to micromobility | • | • | | • | | • |
| 5.2.2. | Electrification of light-duty passenger vehicles | | | | • | • | • |
| 5.2.3. | Low-/zero-emissions medium- and heavy-duty vehicles | • | • | | • | • | • |
| 5.2.4. | Carbon pricing | • | | | • | • | |
| 5.3. Support ready access to low-carbon fuels for the transportation system. | | | | | | | |
| 5.3.1. | EV charging network for light-duty vehicles | • | • | | • | • | • |
| 5.3.2. | EV charging and zero-emissions refuelling infrastructure for commercial vehicles | • | • | • | • | • | • |
| 5.3.3. | Low-carbon fuels | | | • | • | • | • |
| 5.3.4. | Renewable power for electric mobility | | • | | • | • | • |
| 5.4. Account for and reduce upstream and downstream emissions in the transportation system. | | | | | | | |
| 5.4.1. | Life cycle GHG into business cases | • | • | | • | | |
| 5.4.2. | Carbon value for decision-making | • | • | • | • | | |
| 5.4.3. | Public sector sustainable procurement | • | • | • | • | • | |
| 5.4.4. | Upstream emissions | | • | | • | • | |
| 6–8 | Implementation Actions. | • | • | • | • | • | |

• Indicates some role or responsibility to implement consistent with the descriptions on the previous page.

Part H

Performance Monitoring and Evaluation Framework



Performance indicators to monitor, evaluate, and prioritize

Performance indicators are metrics that help measure the impact of strategies and actions on achieving the region’s goals and headline targets as presented in this strategy. Indicators serve two purposes in support of implementation:

- 1) **Evaluation for prioritization:** Transport 2050 is a long-range strategy that includes many strategies and actions. An important next step in implementation is to prioritize the strategies and actions into those that will be implemented sooner (versus later) or given more resources (versus less). Performance indicators are critical in evaluating and prioritizing strategies and actions. The method by which this is accomplished is set out in an evaluation framework.
- 2) **Monitoring performance:** Following implementation, monitoring the effectiveness of the various strategies and actions, as well as the collective impacts of all the strategies and actions within Transport 2050, is critical to ensuring that progress is being made towards goals. These indicators will be used to monitor performance over time. The method by which is this accomplished is set out in a monitoring framework.

Evaluation Framework

An evaluation framework is currently under development to prioritize the TransLink-led strategies and actions contained within Transport 2050 for early implementation. This evaluation framework will assess the ability of the proposed strategies and actions to achieve the goals and targets set out in Transport 2050. The evaluation framework seeks to strike a balance between comprehensiveness, manageability, and efficacy in measuring impacts. Additionally, the evaluation metrics need to be projectable into the future using available tools and methodologies. The evaluation will inform TransLink’s next 10-year implementation plan, which will identify the prioritized strategies and actions. This implementation plan is similar to the existing 2014 Mayors’ Vision.

Various approaches will be used to estimate outcomes for the evaluation framework. One of the key analytical tools is the regional transportation model. This model projects future transportation conditions in the region based on inputs describing the distribution of homes and jobs throughout the region, the roads and transit services available, and the time and dollar costs of using each mode. The model projects the amount of travel that would occur by auto, transit, walking, and cycling, and the location of this travel (i.e., from where to where, and along which corridor).

A variety of other models and tools will be used to both generate and validate our estimates. It is important to emphasize that these models

are simply tools to help us assess the relative impacts of different options. While these models are sophisticated, they are still ultimately just depictions of reality — our best guesses of what we think might happen. We can never accurately predict the future, as there are many external variables that we can’t always predict.

Social equity evaluation:

Social equity is identified as a strategic lens in Transport 2050. The analysis of social equity will take a cross-cutting approach and will require different methodologies for different aspects of the plan. For non-spatial policies and investments, the direct impacts will be evaluated using quantitative and qualitative methods. Where possible, a spatially driven approach will be pursued for geographically specific components such as transit and infrastructure investments. This will entail assessing the

intersection of the spatial distribution of the costs and benefits of infrastructure with the spatial distribution of equity-denied residents. The social equity lens will aim to ensure that the gap in access between the general population and the equity-denied populations reduces in the future, and that equity-denied populations receive a fair share of the region’s investments.

Monitoring Framework


The monitoring framework will consist of the indicators below supplemented by a wider suite of monitoring criteria. Monitoring criteria are not constrained by the requirement to be able to project or evaluate in advance and, as a result, can include a wider and more comprehensive set of indicators. Transport 2050 includes several actions that will improve the ability to monitor the regional transportation system.





In 2020, battery-electric vehicles represented 8.4% of total new vehicle registrations in BC, according to Statistics Canada

Establishing Targets


Setting targets motivates action and helps with monitoring our progress. The five headline targets in Transport 2050 outline the future transportation system we want, where:

- 

Goal 1 Convenient: By 2050, active transportation and transit are competitive choices accounting for at least half of all passenger trips, with taxi, ride-hail, and carshare accounting for most of the remaining passenger trips.
- 

Goal 2 Reliable: By 2050, we are all spending 20% less time stuck in congestion, compared to today.
- 

Goal 3 Affordable: By 2050, none of us — especially those of us with less wealth and lower incomes — need to spend more than 45% of our household incomes on housing and transport combined.
- 

Goal 4 Safe and Comfortable: Reduce serious traffic injuries and fatalities by at least 5% annually until we reach zero before 2050.
- 

Goal 5 Carbon-Free: By 2030, we have lowered carbon pollution from light-duty vehicles by 65% over 2010 levels and we have eliminated carbon pollution from transport altogether by 2050.

Tracking Our Progress on Other Regional Targets

Transport 2050 is informed by several regional plans. We will track our progress towards these complementary targets as well. Other regional transportation targets include:

Metro Vancouver Climate 2050:

45% reduction in emissions from 2010 levels by 2030, and carbon-neutral region by 2050

Metro Vancouver Clean Air Plan:

Air quality in the region is continually improving, protecting human health and the environment, by ensuring that:

- Ambient air quality meets or is better than the ambient air quality objectives and standards that are regularly updated by Metro Vancouver, the BC Government and the Government of Canada
- The amount of time that visual air quality is classified as “excellent” is increasing

Transportation sector emissions targets:

- Passenger vehicles: 65% reduction in greenhouse gas emissions from 2010 levels by 2030
- Commercial vehicles, rail locomotives, marine vessels, and aircraft: 35% reduction in greenhouse gas emissions from 2010 levels by 2030
- Passenger and commercial vehicles, rail locomotives, marine vessels, and aircraft: 25% reduction in diesel particulate matter emissions from 2020 levels, and 40% reduction in nitrogen oxides emissions from 2020 levels by 2030

Regional Cycling Strategy:

Cycling feels safer so that, by 2040, 50% of all cycling trips are made by females. We are tracking our progress against these targets using the indicators listed below.

List of Proposed Performance Indicators

The following table outlines the performance indicators used for evaluation and for monitoring. Some of these indicators are not currently collected and will require co-ordination and collaboration across municipal and regional agencies. It also includes cross-listed indicators from Metro Vancouver’s Regional Growth Strategy, Metro 2050.



GOAL ONE

Convenient Choices for Everyone

We all have universally accessible choices that allow us to conveniently connect to opportunities without needing to rely on a car such that, by 2050, active transportation and transit are competitive choices accounting for at least half of all passenger trips, with taxi, ride-hail, and carshare accounting for most of the remaining passenger trips.

| | Monitoring | Evaluation |
|---|------------|------------|
| 1.1. Make active transportation the most convenient choice for shorter trips. | | |
| • Percentage of envisioned bikeway network completed | X | |
| • Percentage of envisioned walkway network completed | X | |
| • Walkway/bikeway connectedness score, by traffic zone (nodes/segments ratio) | X | |
| • Percentage of trips by walking, rolling, biking, scooters, or electric mobility (by distance, by region, and overall) | X | |
| • Ratio of access to jobs by active transportation vs. auto | X | X |
| • Accessibility to jobs, education, healthcare, and green spaces by active transportation | X | X |
| • <i>A walkability index composed of land use mix, commercial floor area ratio, intersection density, residential density, and sidewalk completeness [Metro 2050]</i> | X | |
| • <i>Total and change in number of community services and amenities in Urban Centres and Frequent Transit Development Areas, including, but not limited to, childcare, green space, and land use mix [Metro 2050]</i> | X | |

| | Monitoring | Evaluation |
|---|------------|------------|
| 1.2. Make transit the most convenient choice for most longer trips. | | |
| • Annual Service Hours (ASH) of transit by mode/service, total and per capita | X | |
| • Ratio of access to jobs by transit vs. auto | X | X |
| • Accessibility to jobs, education, healthcare, and green spaces by transit transportation | X | X |
| • Percentage of trips by transit (by distance, region, and overall) | X | |
| • Percentage of transit stations/stops/services that are universally accessible | X | |
| • <i>Total and change in trips by transportation mode [Metro 2050]</i> | X | |
| • <i>Percentage of residents within walking distance of the Major Transit Network [Metro 2050]</i> | X | |
| 1.3. Make it convenient for all households to make the occasional car trip without needing to own a car. | | |
| • Percentage of regional light-duty fleet that is shared and/or accessible | X | |
| • Proportion of auto trips that are shared | X | X |
| • <i>Total and per capita change in the number of actively insured vehicles [Metro 2050]</i> | X | |
| 1.4. Seamlessly connect different transport services both physically and digitally. | | |
| • Percentage of trips accessed through Mobility-as-a-Service (MaaS) apps | X | |
| • Percentage of stations/stops with easy connection to non-transit modes, by number of modes | X | |



GOAL TWO

Reliable Choices for Everyone

We all have reliable choices that get us where we need to go on time such that, by 2050, we are all spending 20% less time stuck in congestion compared to today.

| | Monitoring | Evaluation |
|---|------------|------------|
| 2.1. Make transit more reliable. | | |
| • Percentage of Frequent Transit Network (FTN) with bus lanes/all-day bus lanes | X | |
| • Transit travel time in top 20 corridors | X | |
| • Total time spent in congestion by transit users | X | X |
| • On-time performance (%) | X | |
| 2.2. Make goods movement more reliable. | | |
| • Percentage of peak-hour truck vehicle-kilometres travelled in congested corridors | X | |
| • Total time spent in congestion by goods movement | X | X |
| • Travel time reliability on designated truck routes | X | |
| 2.3. Make driving and parking more reliable. | | |
| • Percentage of public parking spaces that are priced and/or dynamically priced, on- and off-street | X | |
| • Percentage of peak-hour vehicle-kilometres travelled in congested corridors | X | |
| • Total time spent in congestion by auto users | X | X |
| • Travel time reliability on Major Road Network | X | |
| 2.4. Maintain transportation infrastructure in a state of good repair. | | |
| • On-time performance (%) | X | |
| • Mean distance between failures | X | |
| • Mean distance between service removals | X | |
| • Percentage of assets in state of good repair | X | X |
| • Backlog of investment needs (\$) | X | |



GOAL THREE

Affordable Choices for Everyone

We all have affordable choices, allowing us to easily live and move in this region such that, by 2050, none of us — especially those of us with less wealth and lower incomes — need to spend more than 45% of our household incomes on housing and transport combined.

| | Monitoring | Evaluation |
|--|------------|------------|
| 3.1. Make living close to frequent transit more affordable. | | |
| • Percentage of housing units within 800 metres of Major Transit Network stops and stations that are affordable | X | |
| • Percentage of regional affordable housing units that are within 800 metres of Major Transit Network stops and stations | X | |
| • Percentage of income spent on housing, by neighbourhood transit accessibility score | X | |
| • <i>Percentage of regional dwelling unit growth located in Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors [Metro 2050]</i> | X | |
| • <i>Percentage of affordable rental housing in new and redeveloped units in Urban Centres and Frequent Transit Development Areas [Metro 2050]</i> | X | |
| • <i>Percentage of household income spent on housing and transportation expenses across the region and by tenure and income level [Metro 2050]</i> | X | |
| 3.2. As a priority, invest in transportation modes that are lowest cost and most affordable to residents. | | |
| • Percentage of income spent on transportation, by neighbourhood | X | |
| • Ratio of access to jobs by active transportation and transit relative to auto | X | X |
| • Investments in cycling, walking, and transit infrastructure, by neighbourhood | X | |



GOAL THREE

Affordable Choices for Everyone

| | Monitoring | Evaluation |
|---|------------|------------|
| 3.3. Ensure that transport taxes and fees are affordable for everyone. | | |
| • Transportation costs | X | X |
| • Percentage of dollars raised for regional transportation linked to ability to pay | X | |
| 3.4. Help people and businesses connect to more economic opportunities. | | |
| • Percentage of employment within 800 metres of Major Transit Network stops/stations | | |
| • Accessibility to jobs by all modes | X | X |
| • <i>Change in people plus jobs per hectare in Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors [Metro 2050]</i> | X | |
| • <i>Percentage of regional employment growth located in Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors [Metro 2050]</i> | X | |
| • <i>Total and change in employment by sector in Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors [Metro 2050]</i> | X | |
| • <i>Change in office floor area within Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors [Metro 2050]</i> | X | |
| • <i>Average number of kilometres travelled for commute (region-wide) [Metro 2050]</i> | X | |
| • <i>Average number of minutes travelled for commute (region-wide) [Metro 2050]</i> | X | |
| • <i>Average trip length by transportation mode (region-wide) [Metro 2050]</i> | X | |



GOAL FOUR

Safe & Comfortable Choices for Everyone

We all have safe and comfortable choices that make us all healthier and happier and where we reduce serious traffic injuries and fatalities by at least 5% annually until we reach zero before 2050.

| | Monitoring | Evaluation |
|---|------------|------------|
| 4.1. Eliminate traffic fatalities and serious injuries. | | |
| • Number and percentage of collisions resulting in serious injury or death, by demographic group | X | |
| • Percentage of street-kilometres by speed limit and design speed by typology | X | |
| • Percentage of people walking, biking, and rolling who rate feeling welcome and safe, by demographic group on Customer Feedback Survey | X | |
| • <i>Total and per capita change in annual vehicle kilometres travelled by transportation mode [Metro 2050]</i> | X | X |
| 4.2. Ensure everyone feels welcome, comfortable, and physically secure while getting around. | | |
| • Percentage of transit trips with overcrowding | X | X |
| • Percentage of people who rate feeling welcome and safe on transit, by demographic group on Customer Feedback Survey | X | |
| • Percentage of cyclists that are women | | |
| 4.3. Minimize transportation's adverse impacts on local communities. | | |
| • Average/maximum decibels along road/rail network | X | |
| • Vehicle kilometres travelled | X | X |
| • Number of air quality exceedances of annual objectives attributable to vehicular emissions | X | |
| • Particulate matter and nitrogen oxide emissions, by vehicle type | X | |
| • Public realm quality score | X | |
| • <i>Change in the percentage of regional total tree canopy cover within the Urban Containment Boundary [Metro 2050]</i> | X | |
| 4.4. Safely respond to and recover from disruptions and disasters. | | |
| • Value (\$) of transportation assets in identified high-risk areas | X | X |
| • Network redundancy index | X | |



GOAL FIVE

Carbon-Free Choices for Everyone

We have many transportation choices that are carbon-free, supporting local and global efforts to tackle climate change such that, by 2030, we have lowered carbon pollution from light-duty vehicles by 65% over 2010 levels, and we have eliminated carbon pollution from transport altogether by 2050.

| | Monitoring | Evaluation |
|---|------------|------------|
| Regional GHG emissions — all sectors (tonnes) | X | |
| GHG emissions from transportation by vehicle size category (LDV/MDV/HDV) (tonnes) | X | |
| 5.1. Reduce the energy requirements of the transport system. | | |
| • Total vehicle kilometres travelled, by mode | X | X |
| • Total and per capita transportation energy consumption | X | |
| • Percentage of land use devoted to driving and parking | X | |
| 5.2. Transition to zero-emissions vehicles. | | |
| • Percentage of registered light-, medium-, and heavy-duty vehicles that are zero- or near-zero emissions | X | |
| • Percentage of new light-, medium-, and heavy-duty sales that are zero- or near-zero emissions | X | |
| 5.3. Support ready access to low-carbon fuels for the transportation system. | | |
| • Number of public Level 2 (or faster) EV chargers | X | |
| • Percentage of parking stalls in multi-unit buildings that have EV charging | X | |
| • Transportation fuel consumption by fuel type | X | |

| | Monitoring | Evaluation |
|---|------------|------------|
| 5.4. Account for and reduce upstream and downstream emissions in the transport system. | | |
| • Total upstream, downstream, and operational emissions in the transportation sector, by vehicle type | X | X |
| • <i>Total and change in tonnes of regional greenhouse gas emissions related to land use, buildings, industry, agriculture, waste, transportation, and other emission sources in support of the regional target to reduce greenhouse gas emissions by 45% below 2010 levels by the year 2030 and to achieve a carbon-neutral region by the year 2050 [Metro 2050]</i> | X | |



Part I

Engaging the Region



This section summarizes consultation activities and how feedback has shaped Transport 2050.

A regional strategy needs regional input, which is why TransLink launched its largest-ever public engagement to help inform Transport 2050. Through three phases of engagement, beginning in May 2019 and concluding in October 2021, we sparked a dialogue on the future of transportation with the people who live, work, and play here. In Phase 1, we asked people to share their values, vision, and ideas. In Phase 2, we shared draft goals and three transformative actions for input. Finally, in Phase 3, we shared the draft Transport 2050 strategy document, asking, “Did we get it right?”

During the consultation period, we took the time to visit every municipality in Metro Vancouver. And because our region is a hub

for the movement of people and goods across the province, we also visited the neighbouring communities of Abbotsford, Chilliwack, Mission, and Squamish.

With the arrival of the COVID-19 pandemic, we had to pivot to continue our engagement in a safe and physically distant way. We’re grateful that people continued the journey with us.

In addition to in-person and online events, and workshops, we also gathered feedback through surveys, public opinion polls, and stakeholder meetings and submissions. We would like to thank everyone who took the time to share their input with us — this strategy is better for your contributions.

Transport 2050 engagement highlights

By the numbers:

Through three engagement phases between 2019 and 2021



184
days of engagement



360
events (in-person or virtual)



160k+
conversations



38,000+
surveys completed



4k
ideas submitted



500+
stakeholder groups engaged



7
languages engaged in

Engaging with people of diverse backgrounds

Throughout the Transport 2050 engagement, we made a special effort to reach groups that are typically under-represented in transportation decision-making to better understand their unique points of view.

We partnered with organizations to hold workshops and gather input directly from people from disadvantaged groups, such as people with visible and invisible disabilities, youth, and those who are more comfortable providing feedback in languages other than English, including Punjabi, Farsi, Mandarin, Hindi, Arabic, and Cantonese. We made concerted pushes to ensure participation from all areas of the region, from people who don’t use transit, and from all age groups.

Making transportation planning more inclusive for everyone is an ongoing process and, as such, Transport 2050 makes specific commitments to advance this.



Transport 2050 Youth Engagement

Phase 1: Share values, concerns, priorities, and ideas (May 3–September 22, 2019)

During this first phase of engagement, we asked you to share your values, concerns, priorities, and ideas for the future of transportation.

How did we engage?

To reach as many people as we could across the region, we set up transport2050.ca, which included a discussion guide and an online engagement survey. To bolster the results from the survey, we also commissioned a public opinion research firm to conduct a statistically significant online poll of Metro Vancouverites

using the same questions, of which the results were weighted to reflect the demographics of the region.

In Phase 1, we hosted or attended 315 events across the region, including 122 pop-ups on our transit system, and we held a Transport 2050 expo for 16 days at the PNE Fair. During this phase, we also established a Youth Advisory Council in partnership with City Hive and ran a series of multicultural workshops in partnership with EmpowerMe.

What did we hear?

During Phase 1, we received more than 31,000 survey responses and over 4,000 idea submissions.

We broke down what we heard through the survey into six key areas:

- **Spectacular surroundings:** you are drawn to Metro Vancouver for the parks, outdoors, and mild weather.
- **Location, location, location:** when it comes to choosing a neighbourhood, you want to be near work, near transit, and have easy access to shopping and other community amenities.
- **Valuing your time:** trip duration and reliability are your top commute concerns.
- **More and better transit:** Whether you walk, cycle, take transit, drive, or travel another way, you told us you want more and better transit options to get you where you need to go.
- **Making it easy and green:** you want the transportation system to get you where you’re going efficiently, cost-effectively, and in a way that’s environmentally friendly.
- **Tackling the tough issues:** when it comes to the future of the region, you told us you’re most worried about housing affordability, and you told us that road congestion and climate change are also pressing issues.

In addition to the questions in the survey, we also asked you to share your bold and creative ideas for the future. When we categorized the ideas from members of the public, municipalities, and transportation stakeholders, these included:

- 1,616 ideas about the **transit system** including requests for electrification of the bus fleet, an underwater transit tube, and expansion of transit options
- 729 ideas about **user experience**, including increasing retail options at stations and bus loops, displaying more art at SkyTrain stations, and adding phone charging stations at bus stops
- 313 ideas about **planning and funding**, including finding sustainable funding, engaging youth in planning activities, and replacing the gas tax
- 311 ideas about **new mobility**, including introducing scooter sharing apps, integrating more services into the Compass Card, and preparing the roads for driverless cars
- 303 ideas about **interregional travel**, including expanding transit into the Fraser Valley, building high-speed rail to Portland, and providing car-share services at BC Ferries locations
- 201 ideas about **active transportation**, including building a cycling super freeway, creating pedestrian-only areas in city centres, and delivering consistent wayfinding for bike routes

- 190 ideas about **road network**, including adding bus priority signals at busy intersections, introducing congestion pricing, and prohibiting parking on major roads
- 100 ideas about **other transportation initiatives**, including greater use of our waterways, eliminating minimum parking requirements in new constructions, and creating more Compass Card designs
- 90 ideas about **congestion or overcrowding**, including using more double-decker buses, increasing transit service during special events like concerts, and encouraging remote working
- 18 ideas about **urban freight**, including the movement of goods on transit, building goods-movement tunnels, and exploring short-sea shipping

How did we respond?

We took the input you provided in Phase 1 and considered it in developing foundational pieces of Transport 2050:

- **Setting goals:** the values, concerns, and priorities we heard were translated into the five goals that drive Transport 2050, which we sought your feedback on in Phase 2
- **From ideas to actions:** the ideas shared were considered for inclusion in Transport 2050. See the call-out box for more details about how we’re turning your ideas into action.



From ideas to action

We evaluated over 4,000 ideas that were submitted in Phase 1. Many are now included in the final strategy.

To start, we filtered out any ideas that were unclear or irrelevant. Then we combined similar or duplicate ideas. This resulted in approximately 256 unique ideas for consideration. For example, “bicycle-only cars on SkyTrain” and “expand protected bike lanes and corridors” were submitted 25 and 74 times, respectively, but counted as two unique ideas.

Of these 256 ideas, approximately 35 were either already being implemented or subject to a recent decision. And approximately 30 ideas were unrelated to regional transportation, which were forwarded to relevant regional partners where applicable, for consideration.

The remaining approximately 200 unique ideas were screened for fit, including potential cost and ability to reach regional goals, with the most promising ones moving forward. Ultimately, the final strategy contains 126 strategies and actions, many of which came through the public ideas process.

Phase 2: Consider goals and transformative actions

(April 19–May 14, 2021)

In Phase 2, we sought feedback on four topics:

- Draft Transport 2050 goals: convenient, reliable, affordable, safe, comfortable, and carbon-free
- Three transformative actions, building on ideas shared in Phase 1:
 - Action 1: People-first streets that invite walking, biking, and rolling
 - Action 2: Fast and frequent rapid transit that’s a competitive choice for most longer trips
 - Action 3: Automated vehicles that provide convenient access to car trips, without adding to congestion

How did we engage?

Due to COVID-19, Phase 2 was undertaken entirely online. Because of the complexity of the three transformative actions, we wanted to make sure that participants had a chance to learn more about the topics before providing feedback. We created different kinds of materials — including videos, a discussion guide, and technical backgrounders — that clearly explained the proposed actions and their trade-offs.

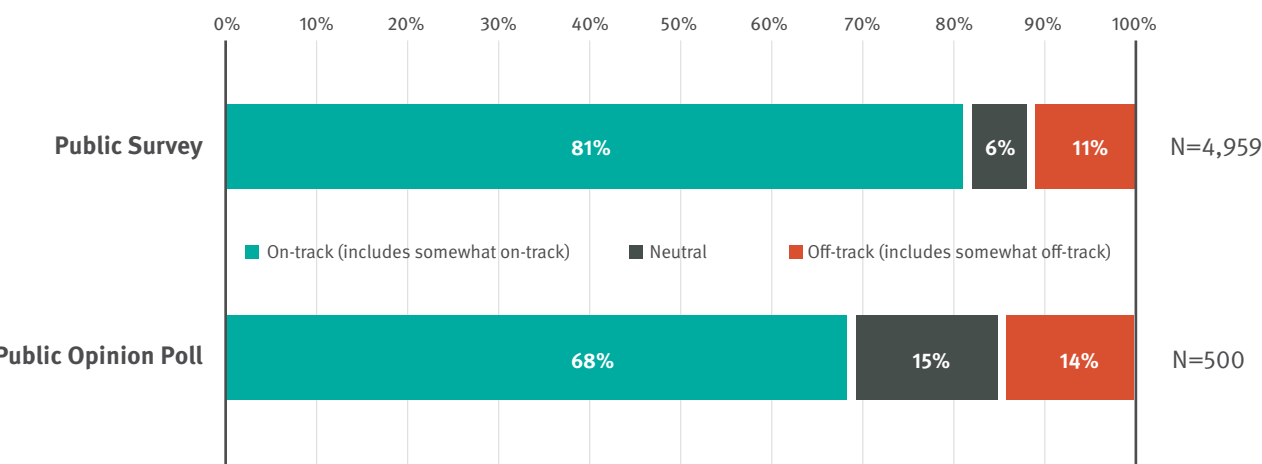
To collect input, we hosted an online survey, which was supplemented by a public opinion poll. Online, 36 different events were convened, including stakeholder workshops, public open houses, workshops with elected officials, and a series of multicultural workshops in partnership with EmpowerMe.

What did we hear and how did we respond?

We received nearly 5,000 survey responses and had in-depth discussions during the online events. The discussion guide was downloaded over 2,800 times, and backgrounders were downloaded over 1,200 times, meaning that participants were well-informed of the issues prior to providing feedback and that they understood trade-offs associated with the proposed actions. As with Phase 1, a public opinion poll was commissioned, and results were weighted to reflect the diversity of the region.

Draft goals

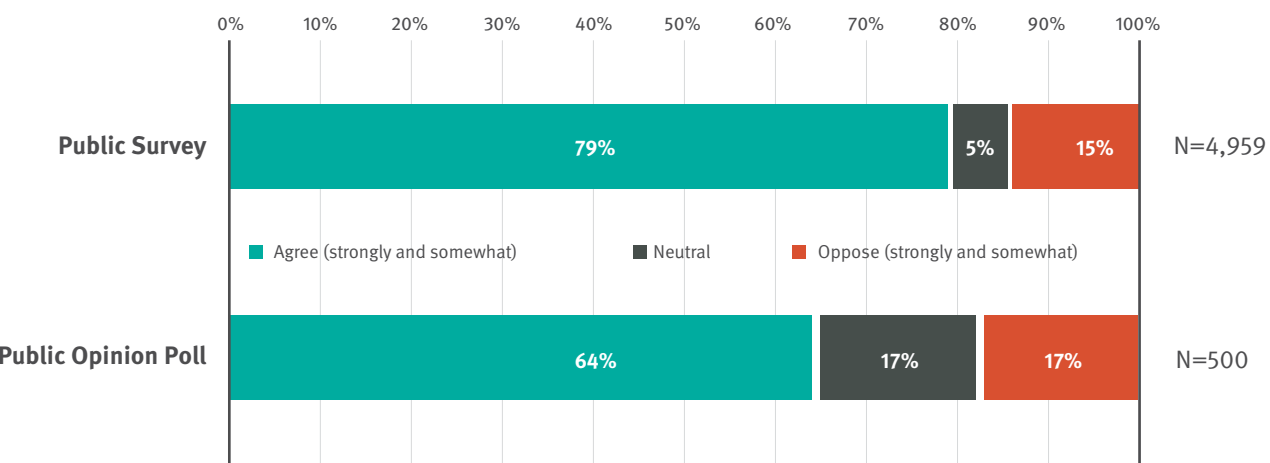
Are we on the right track with these goals?



| What did we hear? | How did we respond? |
|--|---|
| Overall, participants said that draft goals were on-track, a sentiment shared across people of different demographic backgrounds. Many respondents provided suggestions for improvements that could be included in other parts of the strategy document. | Due to the high levels of support, we carried the proposed goals forward. As a result, the goals in the final strategy are largely the same as were presented during Phase 2. |

Action 1: People-first streets that invite walking, biking, and rolling

To what extent do you support or oppose this proposed action?



What did we hear?

In general, there was strong support for people-first streets. Participants generally agreed with the aspiration of reducing our dependence on automobiles, but noted that implementation and design are very important — including how parking, goods movement, and accessibility are accommodated.

How did we respond?

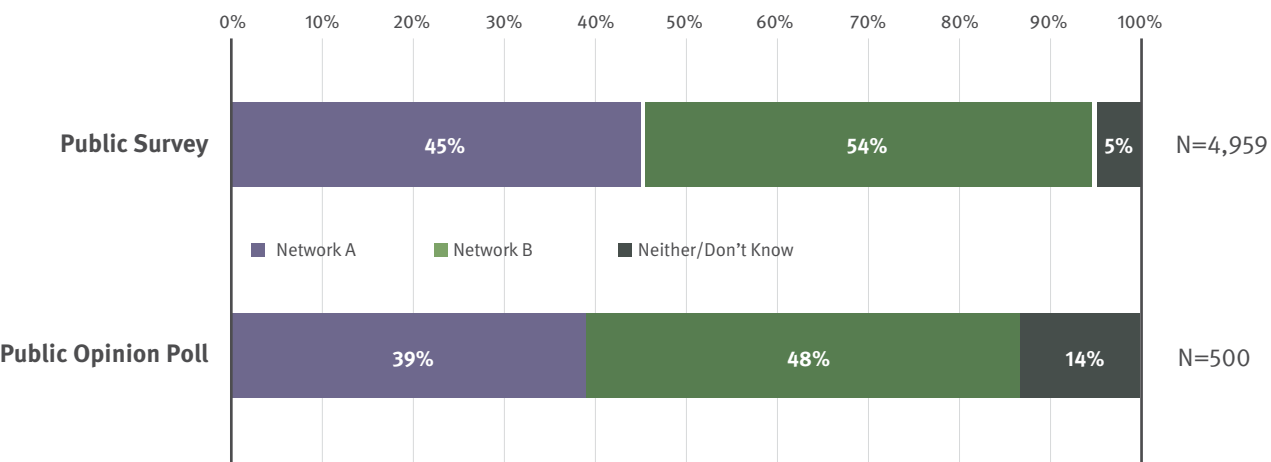
We added actions related to people-first streets in Transport 2050 under Goal 4 – Safe & Comfortable Choices for Everyone.

Transport 2050 envisions a transition away from roads designed for cars towards people-first streets designed for everyone, featuring reduced motor vehicle speeds and greater separation of different modes and speeds; in the long run, automation can also play a major role in improving traffic safety and freeing up space to support more people-oriented streets.

For more, see Goal 4, including Actions 4.1.2 and 4.1.3.

Action 2: Fast and frequent rapid transit that’s a competitive choice for most longer trips

Which of the rapid transit network options do you prefer?



What did we hear?

Two proposed rapid transit networks both saw support in the region, with a few respondents indicating that they didn’t support either network or didn’t know which they support. There was a slight preference among participants for relying more on street-level rapid transit to achieve a more extensive rapid transit network for the region.

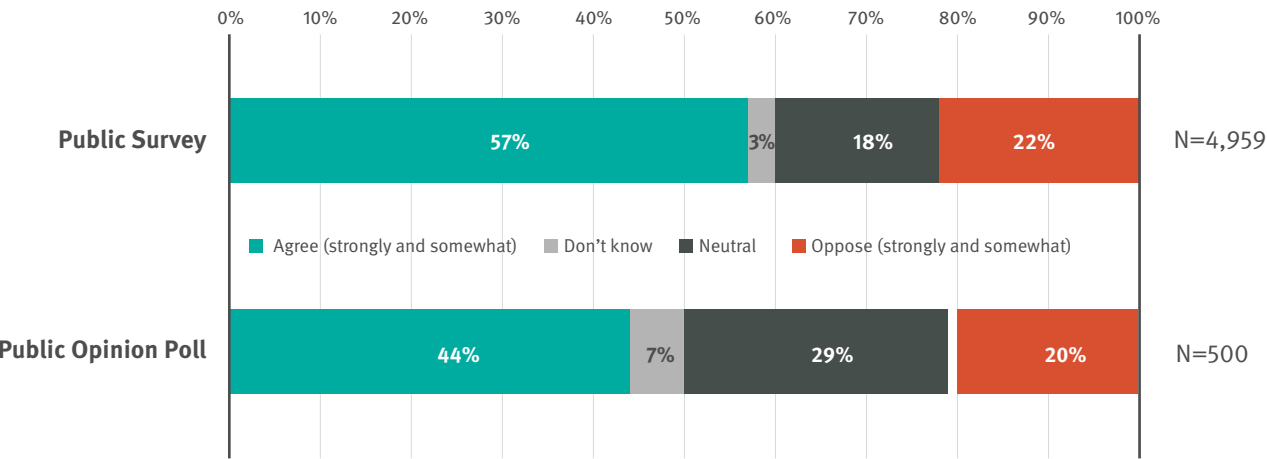
How did we respond?

The input we received in Phase 2 was instrumental in the development of the Reliable & Fast Transit Network included in Transport 2050 (see Map 10).

In developing the final network, we created a hybrid of the two rapid network options shared for input in Phase 2.

Action 3: Automated vehicles that provide convenient access to car trips, without adding to congestion

To what extent do you support or oppose this proposed action?



What did we hear?

In general, there was support for our proposals to manage the introduction of automated vehicles (AVs); however, more people reported a neutral response to this question, compared to others. While people liked the idea of safety and accessibility benefits, some said that AVs would exacerbate issues like congestion and inequity. There was mixed support for the use of fees to manage potential issues around AVs such as zero-passenger trips or congestion.

How did we respond?

We included a series of actions in Transport 2050 to manage the introduction of AVs. This includes policies to promote shared fleets and equitable use. For more information, see Actions 2.3.5., 2.3.6., and 4.1.12.

For more information, see the Phase 2 engagement report at translink.ca/rts

Phase 3: Review draft strategy

(October 12–29, 2021)

In the third and final phase of engagement, we shared the draft Transport 2050 strategy for comment.

How did we engage?

Recognizing different levels of desire and ability to participate in this phase, we provided two ways to engage in the process at transport2050.ca:

- A quick survey with two questions that could be completed after reviewing a summary document
- A detailed survey allowing a respondent to take a deep dive into the 120-page draft strategy document and provide feedback on strategies and actions

To complement the survey, we engaged a Translink Listens panel to gather feedback, using the same questions, which was weighted to match the region’s demographics.

We also held 10 online events with the public, stakeholders, elected officials, and other groups. These events drew approximately 330 participants to discuss and provide input on the draft strategy.

Members of the Transport 2050 Youth Advisory Council, leaders of the Phase 2 multicultural workshops, and representatives from social equity groups were invited to participate in the stakeholder workshops and open houses. We also made a concerted effort to reach drivers, by reaching out to 27 organizations that represent them, so we could gather their input.

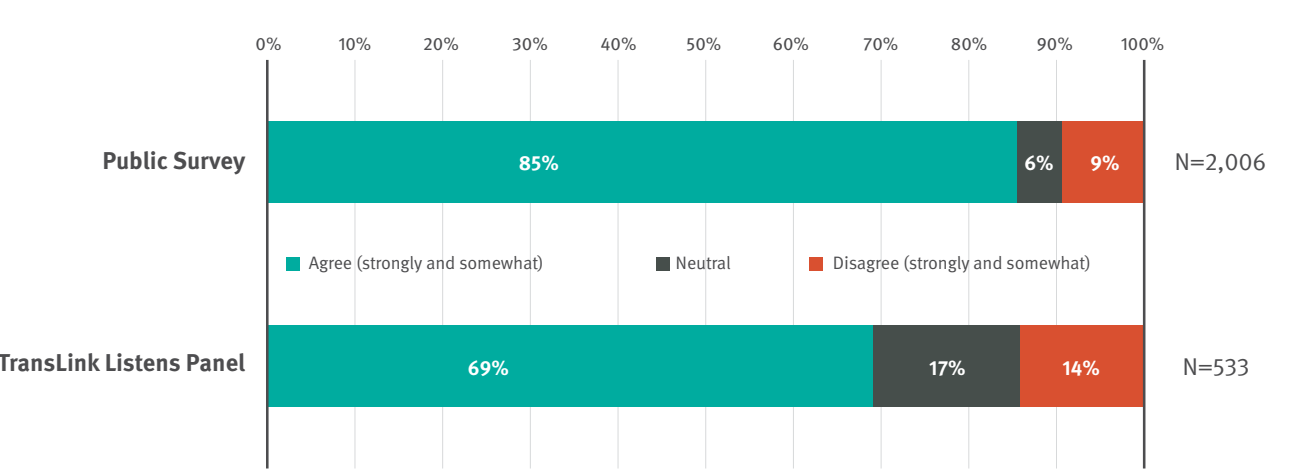
What did we hear and how did we respond?

We received 2,006 public survey responses — approximately 1,100 submitting the quick survey, and about 900 moving on to provide comments through the detailed survey. The TransLink Listens panel received input from 553 people across the region, which was then weighted to reflect the key demographic characteristics of the region.

The following summarizes key takeaways from Phase 3 engagement on two key elements: overall support for the draft Transport 2050 strategy as well as for the Reliable & Fast Transit Network.

Strong support for the draft Transport 2050 strategy

After reviewing the summary document, to what extent do you agree or disagree that Transport 2050 supports how you want to move and live?



What did we hear?

- A strong majority of participants in both the engagement survey and the weighted panel supported the draft Transport 2050 strategy. When asked why they selected their level of agreement, 1,135 public survey respondents provided comments:
- 21% agreed with the plan and goals and noted that they sound good
 - 18% agreed with reduction of carbon emissions and reliance on automobiles
 - 15% appreciated or agreed with the need for expansion of reliable and fast transit options
 - 11% noted support for the cycling infrastructure proposed
 - 0% noted that certain regions would still be underserved in the future
 - 9% expressed a concern that the timeline for implementing the strategy is too long or not ambitious enough
 - 9% noted that even more rapid transit is required than is outlined in the strategy

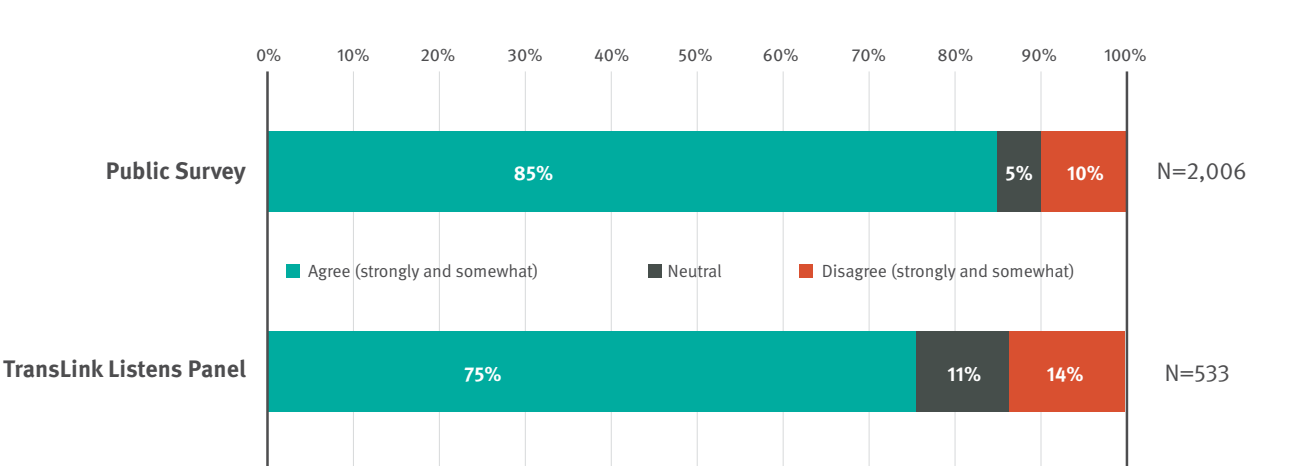
How did we respond?

A number of edits were made to strategies and actions to clarify, emphasize, and provide specifics without changing the content of the actions. Based on what we heard, greater emphasis was added to specific areas, such as those discussing persons with disabilities, sidewalks, different micromobility modes, and intermodal connections, including to BC Ferries and Park and Ride. The role of low-carbon fuels was clarified as being transitional only for the short and medium term.

A more substantial change was made to the content on driving. Based on the survey feedback, the focus for driving was shifted to improving reliability, which is the main problem for people driving, rather than convenience, since many people commented that driving is already very convenient.

Support and enthusiasm for the proposed Reliable & Fast Transit Network

What is your level of agreement with the proposed Reliable & Fast Transit Network?



What did we hear?

- A strong majority of participants in both the engagement survey and the weighted panel supported the Reliable & Fast Transit Network.
- When asked why they selected their level of agreement, 981 public survey respondents provided comments:
- 29% identified regions that they felt would be underserved by the network
 - 14% mentioned the North Shore
 - 6% mentioned South of Fraser (Surrey, Delta, Langley, White Rock)
 - 5% mentioned UBC
 - 4% mentioned the Fraser Valley (Abbotsford, Chilliwack, Hope)
 - 4% mentioned Vancouver and Burnaby
 - 13% stated that it provides good coverage and supported the area and populations to be served
 - 11% expressed general support for the proposed network
 - 1% suggested that the network requires more SkyTrain than is currently proposed

How did we respond?

Given the high level of support and its potential to attain regional goals, the network will be advanced as part of the final Regional Transportation Strategy. Prioritization will occur throughout the New Vision process, which is to follow in 2022, and further study and engagement will be required to site and advance specific corridors.

Toward reconciliation

Transport 2050 recognizes historical and continued social inequities and systemic barriers to opportunities for Indigenous Peoples.

As part of the development of Transport 2050, TransLink invited a representative from each of the 10 First Nations in Metro Vancouver as well as two urban Indigenous organizations to participate in a Transport 2050 Indigenous Advisory Committee.

Through a series of workshops with the Committee, individual meetings and written feedback, we gathered input from Indigenous representatives, which has been considered and incorporated throughout Transport 2050.

Part J

Glossary of Terms



| | |
|--|--|
| Ability to pay | The principle that the amount of taxes or fees that an individual pays should vary according to an individual's level of wealth or income. The application of this principle gives rise to the progressive tax system where individuals with higher wealth or income are asked to pay more than individuals with lower wealth or income. |
| Active transportation | Active transportation includes all human-powered forms of travel. Walking and cycling are the most common, but using a wheelchair or other mobility aid, running, scootering, skateboarding, and inline skating are all forms of active transportation. Electric bicycles, electric kick scooters, and other similar forms of personal micromobility devices are also considered alongside these purely human-powered forms of travel. They hold the potential to make active travel an option for more people to travel greater distances and to “flatten” steep hills. |
| Active transportation network | Active transportation networks are composed of pathways, walkways, and bikeways. |
| Advanced Driver Assistance Systems (ADAS) | Advanced Driver Assistance Systems (ADAS) are groups of electronic technologies that assist human drivers in driving and parking functions, using sensors and cameras to detect nearby obstacles or driver errors, and respond accordingly. Examples include adaptive cruise control, truck platooning technology, blind spot monitoring, and collision warning and avoidance systems. |
| Automated vehicles (AVs) | Automated vehicles (AVs) are vehicles in which at least some aspects of a safety-critical control function (e.g., steering, throttle, or braking) occur without direct driver input. The Society of Automotive Engineers (SAE) defines a total of six levels of vehicle automation starting from Level 0 (no automation) to Level 5 (full automation in all conditions). Widespread adoption of Level 4 vehicles (full automation in well-mapped areas) will be the key transition point towards automated mobility for urban areas such as Metro Vancouver. |
| Bikeway network | The term bikeway network collectively refers to all bikeway segments or corridors that are present in a given area. Ideally, these individual bikeway segments and corridors connect to one another to allow people to travel across the given area. However, this is often not the case, and bikeway networks can be discontinuous or fragmented. |

| | | |
|---------------------------------|--|---|
| Bikeways | Bikeways is a broad term that encompasses a range of on- or off-street cycling facilities. Examples include painted bike lanes, traffic-protected bike paths, multi-use pathways that may be shared with pedestrians, and neighbourhood street bikeways where people bicycling share space with slow-moving vehicle traffic. Bikeways often include pavement markings and signage to make it clear these spaces are meant for the exclusive or shared use of bicyclists. | |
| Carbon neutral | Carbon neutral means that the region generates no net greenhouse gas emissions. This is achieved through the deepest greenhouse gas emission reductions possible across all economic sectors, with any remaining emissions balanced out by the carbon dioxide removed from the atmosphere by plants, trees, and soil in the region, or potentially through technological means. | |
| Carpooling | Carpooling involves more than one rider sharing a vehicle. This could be either a privately owned vehicle, or a shared ride in a taxi or ride-hail vehicle. This is different than carsharing, or using vehicles that have shared or public access (non-private). | |
| Carsharing | Carsharing is a membership-based service, available to all qualified drivers in a community, that allows access to automobiles for personal or corporate use. There are two models of carsharing: <ul style="list-style-type: none">Two-way carsharing: requires the user to return the car from the same location where it was picked upOne-way carsharing: allows the user to pick up an available car from any location within a defined service area, and return it at any other location within the defined service area | Adapted from Carsharing Association |
| Commercial main street | The main street of a neighbourhood that is a focal point for businesses, shopping, and civic amenities. | |
| Community-based approach | Approach in which communities have an active role and participate in highlighting and addressing the issues that matter to them. | Sourced from FASD Evaluation |
| Community-serving retail | Small-scale stores located in public spaces that are accessible on foot or by public transit, and that provide goods and services appropriate for the daily needs and incomes of the neighbouring residents. | |

| | | |
|-----------------------------------|--|--|
| Commuter-shed | A commuter-shed is the territory adjacent to a metropolitan area that has a high degree of social and economic integration with the core, as measured by commuting ties. | Adapted from https://www.newgeography.com/content/004965-americas-largest-commuter-sheds-cbsas |
| Compact communities | Compact communities are designed in a way that preserves more open space and makes more efficient use of land and resources. Compact communities are an essential ingredient for complete communities. Compact and complete communities are walkable, mixed-use, and transit-oriented places where people can live, work, and play at all stages of life. These communities enable most people to have close access to a wide range of employment, health, social, cultural, educational, and recreational services and amenities. | |
| Compact urban forms | Please refer to “Compact communities”. | |
| Complete communities | Complete communities are walkable, mixed use, and transit-oriented places where people can live, work, and play, at all stages of their lives. Compact and complete communities enable most people to have close access to a wide range of employment, health, social, cultural, educational, and recreational services and amenities. | Sourced from draft Metro 2050 Plan |
| Connected vehicles | <p>A vehicle that has the ability to communicate with other vehicles or infrastructure. Depending on the features it has installed, a connected vehicle may be able to communicate with:</p> <ul style="list-style-type: none">• Its occupants, through their mobile devices• Other vehicles and road users• The surrounding transportation infrastructure, such as roadways and traffic lights• Internet-based applications and other entities | Adapted from Transport Canada |
| Controlled-access highways | Controlled-access highways are divided primary highways built for through traffic (as opposed to local traffic access) with two or more lanes in each direction of travel. These lanes are accessible via interchanges only. | |
| Conventional services | Conventional transit services include bus, ferry (SeaBus), and rail (SkyTrain, Canada Line, and West Coast Express). Other services, such as demand-responsive Access Transit services, are not included in this definition. | |
| COVID-19 | An infectious disease caused by a coronavirus discovered in 2019. | |

| | | |
|--|---|--|
| Critical infrastructure interdependencies | When the assets that are essential for the functioning of a society and economy of a country are interconnected and mutually dependent in many ways, both physically and through a series of communications and information technologies. These assets can include utilities, government services, agriculture, and other fundamental systems and services. | Adapted from the Office of Scientific and Technical Information (OSTI) of the U.S. Department of Energy |
| Custom transit services | Door-to-door transit services, such as HandyDART, for people whose mobility needs make it difficult for them to use conventional transit. | |
| Cycling network | Please refer to “Bikeway network”. | |
| Dedicated transit lanes | Dedicated transit lanes are a portion of the street designated by signs and or markings for the preferential or exclusive use of transit vehicles, occasionally permitting limited use by other vehicles. Dedicated transit lanes are typically not physically separated from other traffic. | |
| Demand management | Please refer to “Transportation demand management”. | |
| Demand-responsive transit | Demand-responsive transit plays a supporting role to meet the needs of those people who can’t safely navigate the conventional transit system without assistance. Or — in some limited cases — demand-responsive transit provides service in times and places with insufficient demand to warrant fixed-route service. | |
| Development contribution expectation | A policy applied in conjunction with interim rezoning policies intended to limit land value speculation in areas undergoing community planning. | Sourced from City of Vancouver |
| Digital access | Digital access measures the ability to fully participate in digital society. This includes access to tools and technologies, such as the internet and computers, that allow for full participation. | Sourced from http://laurabiancoedtech.weebly.com/digital-access.html |
| Digital connectivity | Digital connectivity refers to the network of wireless, wired, and satellite technologies that drive all aspects of smart and future cities. It is a key component of modern economies and societies. | Adapted from the UNDP Global Centre for Technology, Innovation and Sustainable Development |
| Digital infrastructure | Digital infrastructure comprises the physical resources that are necessary to enable the use of data, computerized devices, methods, systems, and processes. Digital infrastructure has become indispensable to the functioning of society and the quality of life of its citizens. | Sourced from https://www.designingbuildings.co.uk/wiki/Digital_infrastructure |

| | | |
|---|--|--|
| Disadvantaged individuals or groups | Groups or individuals who face unearned disadvantages because of race, national or ethnic origin, colour, religion, sex, age, or mental or physical disability. | Sourced from Government of BC – BC Laws |
| Downstream emissions | Downstream emissions are emitted after a product or service leaves the company’s control/ownership. | Sourced from https://www.goldstandard.org/sites/default/files/documents/draft_-_scope_3_best_practices_v1.5.pdf |
| Drayage | Drayage is the transportation of rail or ocean freight by truck to an intermediate or final destination; this is typically a short distance (e.g., from marine port to warehouse). | |
| Dynamically managed curbside | The use of sensors and other technology to adjust permitted uses, space, and access prices for curb space based on planned or observed demands. | |
| E-commerce | The act of conducting business transactions that include selling information, services, and goods by means of computer telecommunications networks. | Adapted from Britannica |
| E-health | The use of digital technologies and telecommunications, such as computers, the internet, and mobile devices, to facilitate health improvement and healthcare services. | Adapted from Britannica |
| E-learning | A form of education that uses various technologies to facilitate student-teacher and student-student communication. | Adapted from Britannica |
| Electric vehicles (EVs) | A generic term that usually includes any vehicle that plugs into an external electrical source, including both battery-electric vehicles that use only electricity and plug-in hybrid electric vehicles that primarily use a battery but have an onboard gasoline engine to extend range. EV does not usually refer to more traditional hybrid vehicles that do not obtain electric power from an external source. | Sourced from City of Vancouver |
| Electric vertical takeoff and landing vehicles | Electric vertical takeoff and landing (eVTOL) vehicles, which are often referred to as “drones”, use electric power to hover, take off, and land vertically. | |
| Express transit | Express transit provides reliable and fast service over longer distances both within and across regional boundaries. Travel times that are as fast or faster than driving are achieved by routing that is direct and largely separated from traffic. | |

| | | |
|---|--|--|
| Family of services | Refers to a collection of transit services that work together. Typically refers to the opportunity for people with disabilities to use a combination of fixed-route transit (e.g., SkyTrain, bus) and custom transit services (e.g., HandyDART) to meet their travel needs. | |
| Fine-grained networks | Please refer to “Street network granularity”. | |
| Freeways | Also referred to as “controlled-access highways”, these are divided primary highways built for through traffic (as opposed to local traffic access), with two or more lanes in each direction of travel. The lanes are accessible via interchanges only. | Sourced from the Ministry of Transportation and Infrastructure |
| Frequent transit | Frequent transit supports spontaneous trips, without needing to refer to a schedule. In the future, transit vehicles along frequent transit routes could be expected, at a minimum, every 12, 10, or even 5 minutes. | |
| Frequent Transit Development Areas (FTDAs) | Frequent Transit Development Areas are intended to be additional priority locations to accommodate concentrated growth in higher-density forms of development. They are identified by Metro Vancouver member jurisdictions and located at appropriate locations within the Major Transit Growth Corridors. FTDAs complement the network of Urban Centres, and are characterized by higher-density forms of residential, commercial, and mixed uses, and may contain community, cultural, and institutional uses. | |
| Gateway | The Greater Vancouver Gateway is a system of transportation infrastructure serving international trade in British Columbia’s Lower Mainland. It is comprised of Port Metro Vancouver, Vancouver International Airport, various rail and truck intermodal facilities, US border crossings, and rail and highway links that connect those facilities with each other, with the rest of BC, and with Western Canada. | Sourced from Greater Vancouver Gateway Council |
| Gentrification | A process in which a lower-income area experiences an influx of middle-class or wealthy people who renovate and rebuild homes and businesses and that often results in an increase in property values and the displacement of the earlier, usually lower-income, residents. | Sourced from Merriam-Webster |
| Goods | Goods are products, materials, or services. Goods thus include physical products that we use or consume (food, gasoline, furniture, clothing, etc.), materials that are used to make other things (fabric, rubber, lumber, precious metals, etc.), and services that a person provides as his or her job (plumbing, carpet cleaning, computer repairs, etc.). | |

| | | |
|--------------------------------------|---|--|
| Grade-separated | Grade-separated refers to the vertical separation of transportation modes. This may refer to elevated or tunnelled infrastructure that physically separates its operation from other users. Elevated SkyTrain sections, tunnelled SkyTrain sections, and railway bridges over streets are examples of grade separation in the Metro Vancouver Region. | |
| Green Waves | A green wave occurs when a series of traffic lights (usually three or more) are co-ordinated to allow continuous traffic flow over several intersections in one main direction. | Sourced from Wikipedia |
| Greenhouse Gas (GHG) | Greenhouse gases are pollutants released into the air that increase the warming effect of the sun’s radiation. Some greenhouse gases occur naturally in the atmosphere; others result from human activities such as fossil fuel combustion and land use changes. Greenhouse gases include carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF ₆). | |
| Grid network | In the context of transit, a grid network is characterized by parallel routes serving common destinations. This approach to network design increases network connectivity and provides customers with a greater range of trip planning options. | |
| Gridlock | Form of traffic congestion where continuous queues of vehicles block an entire network of intersecting streets, bringing traffic in all directions to a complete standstill. | Sourced from Wikipedia |
| Heavy-duty vehicles (HDVs) | Heavy-duty vehicles (HDVs) are “heavy trucks” or “trucks”, including straight trucks (single unit) that have three or more axles or weigh 15 metric tonnes or more, and tractor semi-trailer combinations. Heavy trucks, or simply “trucks”, is the colloquial reference to heavy commercial vehicles. | |
| Inclusion | The practice or policy of providing equal access to opportunities and resources for people who might otherwise be excluded or marginalized, such as disadvantaged groups (see “Disadvantaged individuals or groups”). | Adapted from Dictionary.com |
| Interoperable services | Interoperability is generally defined as the ability of two or more transport systems to operate effectively and efficiently together to fulfil consumers’ requirements of a transport system. | Sourced from article in Journal of Transport Geography |
| Kiss and Ride | Locations near transit stations or exchanges where people can be dropped off or picked up by someone driving them by car to/from the transit station or exchange. | |
| Light-duty passenger vehicles | Refers to passenger cars, sport utility vehicles (SUVs), vans, and light trucks weighing up to 8,500 pounds. | Sourced from Transport Policy |

| | | |
|---|--|---|
| Light-duty vehicles (LDVs) | Light-duty vehicles (or light trucks) are trucks with two axles, and a gross vehicle weight less than 15 metric tonnes. | |
| Local Transit | Local transit provides extensive coverage and ensures that all development in the urban part of the region is within walking distance of transit. With short walks to stops, local transit is used for trips within each community or to connect to higher order transit services. Many local transit routes are already high-frequency. | |
| Long combination vehicles (LCVs) | A vehicle combination up to 41 metres long, consisting of a tractor pulling two full-length semi-trailers. In BC, LCVs require special permits to operate on provincial highways and municipal roads. | Adapted from Province of BC |
| Low-carbon mobility | A range of transportation options that are lower in greenhouse gas emissions. These can include active modes (such as micromobility) but also zero-emission vehicles. | |
| Major bike network | Please refer to the Regional Cycling Strategy (2011) for a basic description. | |
| Major Transit Corridors | These corridors are part of the Major Transit Network — the highest order of transit in the region, with services that are high-capacity, high-frequency, fast, and reliable, travelling in dedicated rights-of-way all day, every day in both directions. | |
| Major Transit Growth Corridors (MTGCs) | Major Transit Growth Corridors are areas along TransLink’s Major Transit Network where member jurisdictions, in consultation with Metro Vancouver and TransLink, may identify new Frequent Transit Development Areas (FTDAs). These corridors are intended to extend approximately one kilometre from the roadway centreline in both directions. The intent of these corridors is to provide an overall structure for the region in an effort to support the regional planning principle of directing portions of growth towards Urban Centres and areas around transit. | |
| Major Transit Network (MTN) | The Major Transit Network (MTN) is the highest order of transit — with services that are high-capacity, high-frequency, fast, and reliable, travelling in dedicated rights-of-way all day, every day in both directions. | |
| Mayors’ Council on Regional Transportation | The Mayors’ Council on Regional Transportation is composed of 23 members — the Mayors from all 21 municipalities within the transportation service region and a representative from the Tsawwassen First Nation and Electoral Area A. The Mayors’ Council provides direction on regional transportation policy, investment, and funding through developing, updating, and approving the 10-Year Investment Plans and the 30-Year Regional Transportation Strategy. | |

| | | |
|--|--|---|
| Medium-duty vehicles | Medium-duty vehicles are commercial trucks with a gross vehicle weight rating of 10,001 pounds up to 26,000 pounds. | Sourced from The Balance Small Business |
| Micromobility | Micromobility includes both human-powered mobility devices (bikes, kick scooters, etc.) and electric-assisted mobility devices, such as electric bikes and scooters, which can be personally owned or used in shared fleets. | |
| Microtransit | Small-scale public transit services that can offer fixed routes and schedules, as well as flexible routes and on-demand scheduling. | Sourced from American Public Transportation Association |
| Mobility | The movement of people and goods, including sidewalks, bicycle lanes, and protected bikeways, dedicated bus or light rail/streetcar lanes, and general-purpose vehicular travel lanes. | Sourced from Curbside Management Practitioners Guide |
| Mobility-as-a-Service (MaaS) | A digital service that enables individuals to use a single smartphone app to plan, book and pay for a wide range of mobility services offered by multiple mobility service providers, such as transit, ride-sharing, and micromobility-sharing services. | Adapted from Wikipedia |
| Mobility hubs | Dedicated zones or areas where a variety of transportation modes (e.g., transit, walkways, bikeways, shared micromobility, taxi pickup and drop-off, car-sharing, ferry) are co-located, allowing for more seamless connections between modes and services by transportation system users. | Sourced from UBC Sustainability Scholars Research |
| Mobility service provider (MSP) | Mobility service providers are organizations that can be public, private, or co-operatively owned and that provide public or membership-based transportation services. Examples include carsharing companies, shared bike companies, and public transit. | |
| Multimodal | Those activities that involve more than one mode of transportation, including transportation connections, choices, co-operation, and co-ordination of various modes. | |
| Neighbourhood logistics hubs | A designated location in urban areas with a primary purpose to assist deliveries, including last-mile deliveries, through functions such as centralizing inbound and outbound deliveries for multiple logistics companies, serving as a convenient drop-off or pickup location, or facilitating transfers between different freight vehicle types. | |
| Network Design | The design of the transportation network including but not limited to road networks, railways, air routes, pipelines, aqueducts, and power lines. | Sourced from Wikipedia |
| Off-peak travel | Non-peak or non-rush hours. From 09:30 until 15:00 and from 18:30 until the last bus Monday to Friday and all day Saturday, Sunday, and holidays. | |

| | | |
|---|--|---|
| One-way carsharing | Please refer to “Carsharing”. | |
| Passenger-directed vehicle (PDV) | Passenger-directed vehicles are those where the passenger, or their representative, determines where the vehicle travels (see ride-hailing). | Sourced from Province of BC |
| Peak period | The period where the greatest level of demand for transit or other transportation services or infrastructure is experienced and service is provided. Peak periods on the roadway network and transit typically coincide with rush hour. | |
| People-first streets | People-first streets prioritize safety and livability by reducing design speeds and by reallocating road space currently oriented to cars, for use by people walking, biking, rolling, or taking transit. | |
| Rail corridors | A rail corridor is a linear, continuous strip of real property that is used for rail service. The term includes the corridor and structures essential to railroad operations, including the land, buildings, improvements, rights-of-way, easements, rail lines, rail beds, guideway structures, switches, yards, parking facilities, power relays, switching houses, rail stations, any ancillary development, and any other facilities or equipment used for the purposes of construction, operation, or maintenance of a railroad that provides rail service. | Adapted from Law Insider |
| 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 reliable, fast, and able to move large volumes of people. | |
| Regional Cycling Strategy | The Regional Cycling Strategy provides guidance on how cycling can help realize the region’s goals. The strategy sets out a shared course of action for TransLink, municipalities, and other partners. | |
| Regional Growth Strategy (RGS) | Metro Vancouver’s long-term regional land use plan, which is currently under development. It will replace the region’s previous regional plan, the Livable Region Strategic Plan (LRSP), which was adopted in 1996. Under the <i>South Coast British Columbia Transportation Authority Act</i> , the purpose of TransLink is to provide a regional transportation system that supports Metro Vancouver’s Regional Growth Strategy. | |
| Reliability | Reliability is the ability of transit to operate on schedule. Consistent and predictable operations reduce travel time variability and dwell times, which can be a major source of delay to transit. | |

| | | |
|--|--|---|
| Remote work | Working style that allows professionals to work outside of a traditional office environment. Employees do not commute to a central place of work, such as an office building, warehouse, or store. | Adapted from Wikipedia |
| Resilience | The capacity of individuals, communities, organizations, and natural systems to prepare for, avoid, absorb, recover from, and adapt to shocks and stresses through the preservation, restoration, and adaptation of essential functions. Resilience also involves learning from shocks and stresses to build back better. | |
| Ride-hailing | Ride-hailing is booking rides and paying for car service through a smartphone app with a transportation network service provider (see “Transportation network services”). | Adapted from City of Vancouver |
| Right-of-way | A right-of-way is a type of easement granted or reserved over the land for transportation purposes, such as a highway, street, footpath, or bicycle path. | Adapted from Wikipedia |
| Road usage charging | Road usage charges are direct charges levied for the use of roads, including bridge or road tolls, distance- or time-based fees, congestion charges, and charges designed to discourage use of certain types of vehicle or fuel sources. | |
| Robo-taxis (or automated vehicle taxis) | Ridesharing or taxi service operated by Level 4 or 5 automated vehicles. | |
| Rolling | Includes a range of self-propelled or low-speed electric personal transportation, such as wheelchairs or scooters, that, together with walking and cycling, are forms of active transportation. | |
| Service layers | The transit network is comprised of several different service layers, each with their own set of service characteristics (span of service, frequency, route design) and unique role within the network. These different layers work together to serve a wide range of different customer markets, origins, and destinations. | |
| Service level | Service level denotes the quality of the service experienced by the traveller or, in the context of goods movement, by the person or business shipping freight. Aspects of service level include speed, convenience, frequency of service, comfort, and other qualities. | |
| Shadow carbon price | A notional market price (a “shadow” price) for carbon in internal corporate financial analysis and decision-making processes. A shadow carbon price is generally expressed in terms of dollars (currency) per tonne of carbon dioxide (CO ₂) or carbon dioxide equivalent (CO ₂ e). | Sourced from Sustainable Prosperity |

| | | |
|-----------------------------------|--|--|
| Shared micromobility | Any small human- or electric-powered transportation solution such as bikes, e-bikes, scooters, e-scooters or any other small, lightweight vehicle that is being used as a shared resource between multiple users. | Sourced from Shared-Micromobility Playbook |
| Shared mobility | Transportation services and resources that are shared among users, either concurrently or one after another. This includes vehicles operated as a fleet by a public or private mobility service provider, such as public transit, bikesharing, scooter sharing, carsharing, taxis, and ride-hailing; can also refer to multiple people from different households splitting the costs of a car or van ride (ridesharing, carpooling, vanpooling). | Sourced from Shared Use Mobility Center |
| Shared vehicles | Please refer to “Shared mobility”. | |
| Sprawl | The rapid expansion of the geographic extent of cities and towns, often characterized by low-density residential housing, single-use zoning, and increased reliance on the private automobile for transportation. | Sourced from Britannica |
| Street network granularity | <p>Describes the level of scale or detail of the street network, with the following as the two extremes:</p> <ul style="list-style-type: none">A fine-grained street network is one with a higher degree of connectivity, shorter blocks, more intersections, and more route options in a given areaA coarse-grained street network is one with a lower degree of connectivity, longer blocks, fewer intersections, and fewer route options in a given area | |
| Surveillance capitalism | The unilateral, and typically undetectable, claiming of private human experience as free raw material for translation into behavioural data. This data is then computed and packaged as prediction products and sold into behavioural futures markets to business customers with a commercial interest in knowing what we as individuals will do now, soon, and later in order to influence our behaviour for the purpose of profit-making. | Sourced from Wikipedia |
| Sustainable procurement | Sustainable procurement is the adoption of social, economic, and environmental criteria alongside the price and quality considerations into procurement processes and procedures. | Sourced from the Chartered Institute of Procurement & Supply |
| Systemic barriers | Policies, procedures, or practices that unfairly discriminate and can prevent individuals from participating fully in a situation. | Sourced from Council of Ontario Universities |
| Systemic discrimination | Systemic discrimination can be described as patterns of behaviour, policies, or practices that are part of the structure of an organization, and that create or perpetuate disadvantage for racialized persons or other disadvantaged groups. | Sourced from the Ontario Human Rights Commission |
| Teleworking | Please refer to “Remote work”. | |

| | | |
|---|--|--|
| Transit priority | Transit priority measures include dedicating lanes for public transit vehicles, changing infrastructure and policy to improve bus speeds and reduce dwell times at stops, and giving public transit vehicles preferential treatment in the general traffic flow through traffic control measures and signal priority. Implementing these measures requires co-ordination and partnership with local municipalities. | |
| Transit-oriented affordable housing (TOAH) | Affordable housing, especially rental housing, for lower-income households in Metro Vancouver in locations with good access to frequent public transit. | Sourced from Metro Vancouver |
| Transit-oriented communities (TOC) | Transit-oriented communities are places that, by their design, allow people to drive less and walk, bike, roll, and take transit more. In practice, this means they concentrate higher-density, mixed-use, human-scale development around frequent transit stops and stations. They also provide well-connected and well-designed networks of streets, creating walking- and cycling-friendly communities focused around frequent transit. | |
| Transit-oriented development (TOD) | Please refer to “Transit-oriented communities”. | |
| Transload | Transload is the transfer of goods from the vehicle/container of one mode to another, en route between a shipper and a receiver. | |
| Transportation demand management (TDM) | The application of policies, strategies, and initiatives that aim to reduce travel demand, specifically that of single-occupancy private vehicles, or to redistribute this demand in space or time. | |
| Transportation network services (TNS) | Companies that provide app-based passenger-directed services (see ride-hailing). | |
| Travel demand | The amount and type of travel people would choose under specific conditions, taking into account factors such as the quality of transport options available and their prices. | Sourced from Victoria Transport Policy Institute |
| TravelSmart | TransLink’s Transportation Demand Management (TDM) implementation program (see “Transportation demand management”). It promotes awareness and delivers education and information on a wide array of trip reduction initiatives and travel-option choices, including transit, cycling, walking, and ride-sharing. | |
| Two-way carsharing | Please refer to “Carsharing”. | |

| | | |
|---------------------------------------|---|--|
| Universal Basic Mobility (UBM) | Universal Basic Mobility is a system of partnerships and/or policies that provides a minimum level of mobility to all members of society, irrespective of the ability to pay. UBM could be implemented in a variety of ways, ranging from a basic level of free mobility for all (e.g., base amount of mobility credits provided to everyone each month) to approaches involving progressive pricing options based on the ability to pay. | Sourced from Bloomberg |
| Upstream emissions | All industrial activities from the point of resource extraction to the project under review. The specific processes included as upstream activities will vary by resource and project type, but in general they include extraction, processing, handling, and transportation. | |
| Urban air mobility (UAM) | An aviation transportation system using highly automated aircraft to transport passengers or cargo at lower altitudes within urban and suburban areas. (Also see “Electric vertical takeoff and landing vehicles”.) | Sourced from Federal Aviation Administration |
| Urban Centre | Urban Centres are intended to be the region’s primary focal points for concentrated growth and transit service. They are intended as priority locations for employment and services, higher-density forms, mixed residential tenures, affordable housing options, and commercial, cultural, entertainment, institutional, and mixed uses. | |
| Urban Containment Boundary | The Urban Containment Boundary is a stable, long-term, regionally defined area for urban development that protects agricultural, conservation, recreation, and rural lands from developments requiring utility infrastructure and from auto-oriented, dispersed development patterns. | Sourced from Metro Vancouver |
| Urban data trust | An urban data trust is a secure and reliable central repository and clearinghouse for a wide variety of urban data, including mobility data, that would help facilitate real-time transport system optimization and Mobility-as-a-Service. Multiple governance structures and legal frameworks are possible. | |
| Urban heat island (effect) | An urban heat island, or UHI, is a metropolitan area that’s a lot warmer than the rural areas surrounding it. | Sourced from National Geographic |
| Vehicle connectors | A device that, by insertion into an electric vehicle inlet, establishes an electrical connection to the electric vehicle for the purpose of power transfer and information exchange. | Sourced from Electric Power Research Institute |
| Vision Zero | A strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, and equitable mobility for all. | Sourced from Vision Zero |

Zero-emissions vehicles (ZEVs)

Vehicles that have the potential to produce no tailpipe emissions. These vehicles can have a conventional internal combustion engine, but they must also be able to operate without using it. This includes vehicles that are:

- Battery-electric
- Plug-in hybrid electric
- Hydrogen fuel cell

Adapted from [Transport Canada](#)



Part K

Thematic Index



| Walking | |
|---------|---|
| Actions | Short description |
| 1.1.1. | Complete communities and active modes |
| 1.1.2. | Walkable neighbourhood street networks |
| 1.1.3. | Walkways |
| 1.4.1. | Mobility hubs |
| 2.3.7. | Inform real-time trip choices |
| 2.4.1. | Monitor asset condition |
| 2.4.2. | Sufficient and timely funds for state of good repair |
| 3.1.4. | Community-serving retail |
| 3.2.1. | Transit service and active transportation in low-income areas |
| 3.4.1. | Access to local shopping |
| 3.4.2. | Access to local jobs |
| 4.1.2. | People-first streets |
| 4.1.3. | People-first street typology |
| 4.1.4. | Prioritize protection for road users with the least physical protection |
| 4.1.5. | Active transportation facilities |
| 4.1.7. | Vibrant, comfortable, inviting, and inclusive public spaces |
| 4.2.1. | Wayfinding |
| 4.2.6. | Training for walking, biking, transit skills |
| 4.3.4. | Tree canopy and greenery |
| 4.4.5. | Critical infrastructure interdependencies |
| 4.4.6. | Transportation resiliency strategy |
| 4.4.7. | Capacity to adapt to shocks |

| | |
|--------|--|
| 4.4.8. | State of good repair |
| 5.1.1. | Energy-efficient modes |
| 5.1.2. | Energy-efficient cities |
| 6.8.1. | Space allocation and prioritization principles |
| 6.8.2. | Streets management framework |

| Cycling | |
|---------|--|
| Actions | Short description |
| 1.1.1. | Complete communities and active modes |
| 1.1.2. | Walkable neighbourhood street networks |
| 1.1.4. | Bikeways |
| 1.4.1. | Mobility hubs |
| 2.3.7. | Inform real-time trip choices |
| 2.4.1. | Monitor asset condition |
| 2.4.2. | Sufficient and timely funds for state of good repair |
| 3.2.1. | Transit service and active transportation in low-income areas |
| 3.2.2. | Bicycles and micromobility devices at low cost |
| 3.2.3. | Secure bike charging and parking in multi-family and rental buildings |
| 3.2.4. | Subsidies for electric vehicles, e-bikes, and bikes for low-income individuals |
| 3.4.1. | Access to local shopping |
| 3.4.2. | Access to local jobs |
| 4.1.2. | People-first streets |
| 4.1.3. | People-first street typology |
| 4.1.4. | Prioritize protection for road users with the least physical protection |

| | |
|--------|--|
| 4.1.5. | Active transportation facilities |
| 4.2.1. | Wayfinding |
| 4.2.6. | Training for walking, biking, transit skills |
| 4.3.4. | Tree canopy and greenery |
| 4.4.5. | Critical infrastructure interdependencies |
| 4.4.6. | Transportation resiliency strategy |
| 4.4.7. | Capacity to adapt to shocks |
| 4.4.8. | State of good repair |
| 5.1.1. | Energy-efficient modes |
| 5.1.2. | Energy-efficient cities |
| 6.8.1. | Space allocation and prioritization principles |
| 6.8.2. | Streets management framework |

| Micromobility | |
|---------------|--|
| Actions | Short description |
| 1.1.1. | Complete communities and active modes |
| 1.1.2. | Walkable neighbourhood street networks |
| 1.1.4. | Bikeways |
| 1.1.5. | Shared micromobility |
| 1.4.1. | Mobility hubs |
| 1.4.2. | Neighbourhood logistics hubs |
| 1.4.3. | Mobility-as-a-Service |
| 2.3.4. | Urban mobility data |
| 2.3.7. | Inform real-time trip choices |

| | |
|--------|---|
| 2.3.8. | Integrated pricing and fares between mobility providers |
| 3.2.1. | Transit service and active transportation in low-income areas |
| 3.2.2. | Bicycles and micromobility devices at low cost |
| 3.3.1. | Funding for transportation system |
| 3.4.1. | Access to local shopping |
| 3.4.2. | Access to local jobs |
| 3.4.3. | Access to markets, suppliers, customers, and workers |
| 3.4.7. | Piloting and innovation |
| 4.1.4. | Prioritize protection for road users with the least physical protection |
| 4.1.6. | Micromobility networks |
| 4.2.6. | Training for walking, biking, transit skills |
| 5.1.1. | Energy-efficient modes |
| 5.1.2. | Energy-efficient cities |
| 5.2.1. | Access to micromobility |
| 6.8.1. | Space allocation and prioritization principles |
| 6.8.2. | Streets management framework |

| Transit | |
|---------|--|
| Actions | Short description |
| 1.2.1. | Transit-oriented regional growth |
| 1.2.2. | Accessible and barrier-free transit system |
| 1.2.3. | Frequent local fixed-route transit service |
| 1.2.4. | Frequent Transit Network |
| 1.2.5. | Expand transit connections |

| | |
|---------|---|
| 1.4.1. | Mobility hubs |
| 1.4.3. | Mobility-as-a-Service |
| 2.1.1. | Transit priority |
| 2.1.2. | Dedicated transit lanes |
| 2.1.3. | Transit priority measures |
| 2.1.4. | Management and enforcement to minimize transit delay |
| 2.1.5. | Transit priority planning and design |
| 2.3.4. | Urban mobility data |
| 2.3.7. | Inform real-time trip choices |
| 2.4.1. | Monitor asset condition |
| 2.4.2. | Sufficient and timely funds for state of good repair |
| 3.1.1. | Rental housing adjacent to transit |
| 3.1.2. | Land speculation |
| 3.1.4. | Community-serving retail |
| 3.2.1. | Transit service and active transportation in low-income areas |
| 3.3.1. | Funding for transportation system |
| 3.4.1. | Access to local shopping |
| 3.4.2. | Access to local jobs |
| 3.4.3. | Access to markets, suppliers, customers, and workers |
| 4.1.7. | Vibrant, comfortable, inviting, and inclusive public spaces |
| 4.1.11. | Advanced Drivers Assistance Systems (ADAS) |
| 4.1.12. | Deployment of AVs |
| 4.2.1. | Wayfinding |
| 4.2.2. | Room to move and sit on transit |
| 4.2.3. | Comfortable transit experience |

| | |
|--------|--|
| 4.2.4. | Welcome and secure on shared transportation and transit |
| 4.2.5. | Community-based approach to community safety |
| 4.2.6. | Training for walking, biking, transit skills |
| 4.3.1. | Health and environmental impact assessments |
| 4.3.2. | Air emissions |
| 4.3.3. | Water pollution |
| 4.3.4. | Tree canopy and greenery |
| 4.3.6. | Noise from rail-based transportation |
| 4.3.7. | Reduce neighbourhood partition and social isolation |
| 4.4.5. | Critical infrastructure interdependencies |
| 4.4.6. | Transportation resiliency strategy |
| 4.4.7. | Capacity to adapt to shocks |
| 4.4.8. | State of good repair |
| 5.1.1. | Energy-efficient modes |
| 5.1.2. | Energy-efficient cities |
| 5.3.2. | EV charging and zero-emissions refuelling infrastructure for commercial vehicles |
| 5.3.3. | Low-carbon fuels |
| 5.3.4. | Renewable power for electric mobility |
| 5.4.1. | Life cycle GHG into business cases |
| 5.4.2. | Carbon value for decision-making |
| 5.4.3. | Public sector sustainable procurement |
| 5.4.4. | Upstream emissions |
| 6.8.1. | Space allocation and prioritization principles |
| 6.8.2. | Streets management framework |

| Driving | |
|---------|--|
| Actions | Short description |
| 2.3.1. | Network of local streets |
| 2.3.2. | Network of regional roads |
| 2.3.3. | Controlled-access highways |
| 2.3.4. | Urban mobility data |
| 2.3.5. | Parking, pickup and drop-off, and loading/unloading spaces |
| 2.3.6. | Dynamically manage AVs and other road users |
| 2.3.7. | Inform real-time trip choices |
| 2.3.9. | Commute trip reduction programs |
| 2.3.10. | TDM programming |
| 2.3.11. | TDM in multi-family and commercial buildings |
| 2.3.12. | Pay-as-you-drive insurance |
| 2.4.1. | Monitor asset condition |
| 2.4.2. | Sufficient and timely funds for state of good repair |
| 3.1.3. | Parking management |
| 3.2.4. | Subsidies for electric vehicles, e-bikes, and bikes for low-income individuals |
| 3.3.1. | Funding for transportation system |
| 3.4.4. | Agricultural sector |
| 4.1.1. | Speed limits |
| 4.1.2. | People-first streets |
| 4.1.3. | People-first street typology |
| 4.1.4. | Prioritize protection for road users with the least physical protection |

| | |
|---------|---|
| 4.1.8. | Training and awareness for drivers |
| 4.1.9. | Traffic enforcement |
| 4.1.12. | Deployment of AVs |
| 4.3.1. | Health and environmental impact assessments |
| 4.3.2. | Air emissions |
| 4.3.3. | Water pollution |
| 4.3.5. | Noise from road-based transportation |
| 4.3.7. | Reduce neighbourhood partition and social isolation |
| 4.4.5. | Critical infrastructure interdependencies |
| 4.4.6. | Transportation resiliency strategy |
| 4.4.7. | Capacity to adapt to shocks |
| 4.4.8. | State of good repair |
| 5.2.2. | Electrification of light-duty passenger vehicles |
| 5.3.1. | EV charging network for light-duty vehicles |
| 5.3.3. | Low-carbon fuels |
| 5.3.4. | Renewable power for electric mobility |
| 5.4.1. | Life cycle GHG into business cases |
| 5.4.2. | Carbon value for decision-making |
| 5.4.3. | Public sector sustainable procurement |
| 5.4.4. | Upstream emissions |
| 6.8.1. | Space allocation and prioritization principles |
| 6.8.2. | Streets management framework |

| Shared Vehicles | |
|-----------------|--|
| Actions | Short description |
| 1.4.1. | Mobility hubs |
| 1.4.3. | Mobility-as-a-Service |
| 2.3.4. | Urban mobility data |
| 2.3.5. | Parking, pickup and drop-off, and loading/unloading spaces |
| 2.3.7. | Inform real-time trip choices |
| 2.3.8. | Integrated pricing and fares between mobility providers |
| 3.3.1. | Funding for transportation system |
| 3.4.2. | Access to local jobs |
| 3.4.3. | Access to markets, suppliers, customers, and workers |
| 3.4.7. | Piloting and innovation |
| 6.8.1. | Space allocation and prioritization principles |
| 6.8.2. | Streets management framework |

| Freight | |
|---------|---|
| Actions | Short description |
| 1.4.2. | Neighbourhood logistics hubs |
| 2.2.1. | Land use needs of goods movement, industry, and agriculture |
| 2.2.2. | Consolidation of goods and deliveries |
| 2.2.3. | Road capacity |
| 2.3.2. | Network of regional roads |
| 2.3.3. | Controlled-access highways |

| | |
|---------|--|
| 2.3.4. | Urban mobility data |
| 2.3.5. | Parking, pickup and drop-off, and loading/unloading spaces |
| 2.3.7. | Inform real-time trip choices |
| 2.4.1. | Monitor asset condition |
| 2.4.2. | Sufficient and timely funds for state of good repair |
| 3.4.3. | Access to markets, suppliers, customers, and workers |
| 4.1.10. | Commercial vehicle safety inspections |
| 4.1.11. | Advanced Drivers Assistance Systems (ADAS) |
| 4.3.1. | Health and environmental impact assessments |
| 4.3.2. | Air emissions |
| 4.3.3. | Water pollution |
| 4.3.5. | Noise from road-based transportation |
| 4.3.6. | Noise from rail-based transportation |
| 4.4.5. | Critical infrastructure interdependencies |
| 4.4.6. | Transportation resiliency strategy |
| 4.4.7. | Capacity to adapt to shocks |
| 4.4.8. | State of good repair |
| 5.1.3. | Smaller, zero-emission freight vehicles |
| 5.2.3. | Low-/zero-emissions medium- and heavy-duty vehicles |
| 5.3.2. | EV charging and zero-emissions refuelling infrastructure for commercial vehicles |
| 5.3.3. | Low-carbon fuels |
| 5.3.4. | Renewable power for electric mobility |
| 5.4.1. | Life cycle GHG into business cases |
| 6.8.1. | Space allocation and prioritization principles |
| 6.8.2. | Streets management framework |

| Social Equity | |
|---------------|--|
| Actions | Short description |
| 1.1.3. | Network of pedestrian walkways |
| 1.1.5. | Shared micromobility |
| 1.2.2. | Accessible and barrier-free transit system |
| 2.1.5. | Transit priority planning and design |
| 2.3.10. | TDM programming |
| 3.1.1. | Rental housing adjacent to transit |
| 3.1.2. | Land speculation |
| 3.2.2. | Bicycles and micromobility devices at low cost |
| 3.2.4. | Subsidies for electric vehicles, e-bikes, and bikes for low-income individuals |
| 3.2.5. | AVs to support low-income individuals in remote locations |
| 3.3.1. | Funding for transportation system |
| 3.4.5. | Transportation workforce |
| 3.4.6. | Transition for transportation workforce |
| 4.1.4. | Prioritize protection for road users with the least physical protection |
| 4.1.5. | Active transportation facilities |
| 4.1.7. | Vibrant, comfortable, inviting, and inclusive public spaces |
| 4.2.4. | Welcome and secure on shared transportation and transit |
| 4.2.6. | Training for walking, biking, transit skills |
| 4.3.4. | Tree canopy and greenery |
| 4.4.6. | Transportation resiliency strategy |
| 5.2.2. | Electrification of light-duty passenger vehicles |
| 5.3.1. | EV charging network for light-duty vehicles |

| | |
|--------|--|
| 6.2.3. | Innovate with purpose |
| 6.3.1. | Barriers to accessibility, equity, and inclusion |
| 6.3.2. | Regional Social Equity Strategy |
| 6.3.3. | Engagement practices |
| 6.3.4. | Incorporate social equity into planning and network design |
| 6.4.1. | Data for planning, monitoring, and evaluating |
| 6.4.2. | Equity lens in decision-making |
| 6.7.6. | People-first technology approach |
| 6.8.1. | Space allocation and prioritization principles |
| 6.8.2. | Streets management framework |
| 8.2.1. | Equity, diversity, and inclusion in public agencies |

| Reconciliation | |
|----------------|---|
| Actions | Short description |
| 1.1.5. | Shared micromobility |
| 1.2.1. | Transit-oriented regional growth |
| 1.2.2. | Accessible and barrier-free transit system |
| 2.2.1. | Land use needs of goods movement, industrial, and agricultural land users |
| 3.1.1. | Rental housing adjacent to transit |
| 3.4.5. | Transportation workforce |
| 4.2.4. | Welcome and secure on shared transportation and transit |
| 4.2.6. | Training for walking, biking, transit skills |
| 4.2.7. | Art, design, landscape, and cultural recognition |
| 5.2.2. | Electrification of light-duty passenger vehicles |

| | |
|--------|--|
| 5.3.1. | EV charging network for light-duty vehicles |
| 6.2.1. | Update Regional Transportation Strategy regularly |
| 6.3.1. | Barriers to accessibility, equity, and inclusion |
| 6.5.2. | Transparency and information sharing |
| 6.5.3. | Transparent processes that reflect needs and interests of each Indigenous Nation |

| Resiliency | |
|------------|---|
| Actions | Short description |
| 4.2.3. | Comfortable transit experience |
| 4.2.7. | Art, design, landscape, and cultural recognition |
| 4.3.1. | Health and environmental impact assessments |
| 4.4.1. | Emergency and business continuity plans |
| 4.4.2. | Emergency response training |
| 4.4.3. | Emergency operations framework |
| 4.4.4. | Community-based approach to community safety |
| 4.4.5. | Critical infrastructure interdependencies |
| 4.4.6. | Transportation resiliency strategy |
| 4.4.7. | Capacity to adapt to shocks |
| 4.4.8. | State of good repair |
| 5.3.4. | Renewable power for electric mobility |
| 6.2.1. | Update Regional Transportation Strategy regularly |
| 6.2.2. | Scenario-planning and exploratory modelling |
| 6.4.1. | Data for planning, monitoring, and evaluating |
| 7.1.2. | New funding sources |

| | |
|--------|---|
| 7.1.3. | Transition to longer-term funding source |
| 7.1.5. | Efficient and effective investment decisions |
| 8.3.1. | Collaborative mechanism for future governance |

| Persons with Disabilities | |
|---------------------------|---|
| Actions | Short description |
| 1.1.3. | Network of pedestrian walkways |
| 1.1.5. | Shared micromobility |
| 1.2.2. | Accessible and barrier-free transit system |
| 2.1.5. | Transit priority planning and design |
| 3.2.5. | AVs to support low-income individuals in remote locations |
| 4.1.4. | Prioritize protection for road users with the least physical protection |
| 4.1.5. | Active transportation facilities |
| 4.1.7. | Vibrant, comfortable, inviting, and inclusive public spaces |
| 4.2.1. | Wayfinding |
| 4.2.2. | Room to move and sit on transit |
| 4.2.4. | Welcome and secure on shared transportation and transit |
| 4.2.6. | Training for walking, biking, transit skills |
| 5.1.3. | Smaller, zero-emission freight vehicles |
| 6.2.3. | Innovate with purpose |
| 6.3.1. | Barriers to accessibility, equity, and inclusion |
| 6.3.2. | Regional Social Equity Strategy |
| 6.3.3. | Engagement practices |
| 6.3.4. | Incorporate social equity into planning and network design |

| | |
|--------|---|
| 6.4.1. | Data for planning, monitoring, and evaluating |
| 6.4.2. | Equity lens in decision-making |
| 6.5.1. | Annual reporting |
| 6.7.6. | People-first technology approach |
| 6.8.1. | Space allocation and prioritization principles |
| 6.8.2. | Streets management framework |
| 8.2.1. | Equity, diversity, and inclusion in public agencies |

| Youth and Senior Travel | |
|-------------------------|---|
| Actions | Short description |
| 1.1.1. | Complete communities and active modes |
| 1.1.2. | Walkable neighbourhood street networks |
| 1.1.3. | Walkways |
| 1.1.4. | Mobility hubs |
| 2.3.10. | TDM programming |
| 4.1.2. | People-first streets |
| 4.1.3. | People-first street typology |
| 4.1.4. | Prioritize protection for road users with the least physical protection |
| 4.1.5. | Active transportation facilities |
| 4.1.7. | Vibrant, comfortable, inviting, and inclusive public spaces |
| 4.1.8. | Training and awareness for drivers |
| 4.1.9. | Traffic enforcement |
| 4.2.4. | Welcome and secure on shared transportation and transit |
| 4.2.6. | Training for walking, biking, transit skills |

| | |
|--------|--|
| 4.3.1. | Health and environmental impact assessments |
| 4.3.2. | Air emissions |
| 4.3.3. | Water pollution |
| 4.3.4. | Tree canopy and greenery |
| 4.3.5. | Noise from road-based transportation |
| 5.2.1. | Access to micromobility |
| 6.3.1. | Barriers to accessibility, equity, and inclusion |
| 6.3.2. | Regional Social Equity Strategy |
| 6.3.3. | Engagement practices |
| 6.4.1. | Data for planning, monitoring, and evaluating |
| 6.8.1. | Space allocation and prioritization principles |
| 6.8.2. | Streets management framework |

| Employers and Workers | |
|-----------------------|--|
| Actions | Short description |
| 2.3.9. | Commute trip reduction programs |
| 3.4.2. | Access to local jobs |
| 3.4.5. | Transportation workforce |
| 3.4.6. | Transition for transportation workforce |
| 3.4.7. | Piloting and innovation |
| 4.1.8. | Training and awareness for drivers |
| 4.1.11. | Advanced Drivers Assistance Systems (ADAS) |
| 4.1.12. | Deployment of AVs |

| Development | |
|-------------|---|
| Actions | Short description |
| 1.1.1. | Complete communities and active modes |
| 1.1.4. | Bikeways |
| 1.1.5. | Shared micromobility |
| 1.2.1. | Transit-oriented regional growth |
| 1.2.3. | Frequent local fixed-route transit service |
| 2.2.1. | Land use needs of goods movement, industry, and agriculture |
| 2.3.1. | Network of local streets |
| 2.3.10. | TDM programming |
| 2.3.11. | TDM in multi-family and commercial buildings |
| 3.1.1. | Rental housing adjacent to transit |
| 3.1.3. | Parking management |
| 3.2.3. | Secure bike charging and parking in multi-family and rental buildings |
| 3.4.1. | Access to local shopping |
| 4.1.7. | Vibrant, comfortable, inviting, and inclusive public spaces |
| 4.3.7. | Reduce neighbourhood partition and social isolation |
| 5.2.1. | Access to micromobility |
| 5.3.1. | EV charging network for light-duty vehicles |

| Business/Commute Trip Reduction | |
|---------------------------------|---|
| Actions | Short description |
| 1.1.1. | Complete communities and active modes |
| 1.1.5. | Shared micromobility |
| 1.2.1. | Transit-oriented regional growth |
| 1.4.1. | Mobility hubs |
| 1.4.3. | Mobility-as-a-Service |
| 2.2.1. | Land use needs of goods movement, industry, and agriculture |
| 2.2.2. | Consolidation of goods and deliveries |
| 2.2.3. | Road capacity |
| 2.3.2. | Network of regional roads |
| 2.3.7. | Inform real-time trip choices |
| 2.3.8. | Integrated pricing and fares between mobility providers |
| 2.3.9. | Commute trip reduction programs |
| 2.3.10. | TDM programming |
| 2.3.11. | TDM in multi-family and commercial buildings |
| 3.1.3. | Parking management |
| 3.3.1. | Funding for transportation system |
| 3.4.1. | Access to local shopping |
| 3.4.2. | Access to local jobs |
| 3.4.3. | Access to markets, suppliers, customers, and workers |
| 3.4.7. | Piloting and innovation |
| 4.1.7. | Vibrant, comfortable, inviting, and inclusive public spaces |

| | |
|--------|---|
| 4.3.2. | Air emissions |
| 5.1.1. | Energy-efficient modes |
| 5.2.1. | Access to micromobility |
| 5.2.3. | Low-/zero-emissions medium- and heavy-duty vehicles |
| 5.3.1. | EV charging network for light-duty vehicles |
| 5.4.1. | Life cycle GHG into business cases |
| 5.4.2. | Carbon value for decision-making |
| 5.4.4. | Upstream emissions |



Part L

Reference Resources



2013 Regional Transportation Strategy Progress Report

TransLink



[Download: Full Report](#)

This report summarizes the current status of actions, investments, and policy development undertaken in support of the 2013 RTS and the 2014 Mayors’ Council 10-Year Vision. It also provides learnings for the future RTS to consider and identifies potential gaps and emerging trends.

Regional Long-Range Growth and Transportation Scenarios Summary Report

Metro Vancouver Regional District and TransLink



[Download: Summary Report or Technical Report](#)

This report examines four possible futures for the region, and key challenges and opportunities to be considered in any future regional transportation or land-use planning work. The report also examines external forces that could affect the region — focusing on climate change, shifts in the global economy and trade, and new technologies, specifically artificial intelligence and automation. These external forces could impact employment, incomes, inequality, vehicle kilometres travelled, and other key factors relating to transportation and regional growth management.

Regional Transportation and Mobility Current Context Report

Prepared by Steer, on behalf of TransLink



[Download: Full Report](#)

This report provides an analysis of key trends in transportation, mobility, and growth impacting the region today.

For additional reports and information, visit translink.ca/RTS

On following page: SeaBus image courtesy of Roy Symons



TRANSPORT
2050

