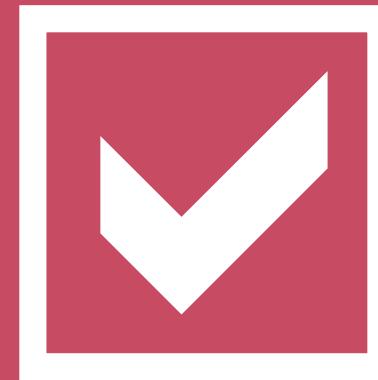


GOAL TWO

Reliable Choices for Everyone



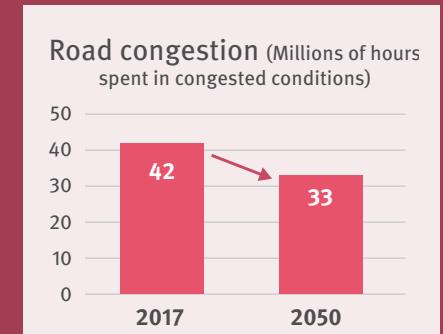
THE PROBLEM TODAY

“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 coordinated 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 coordinating 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.

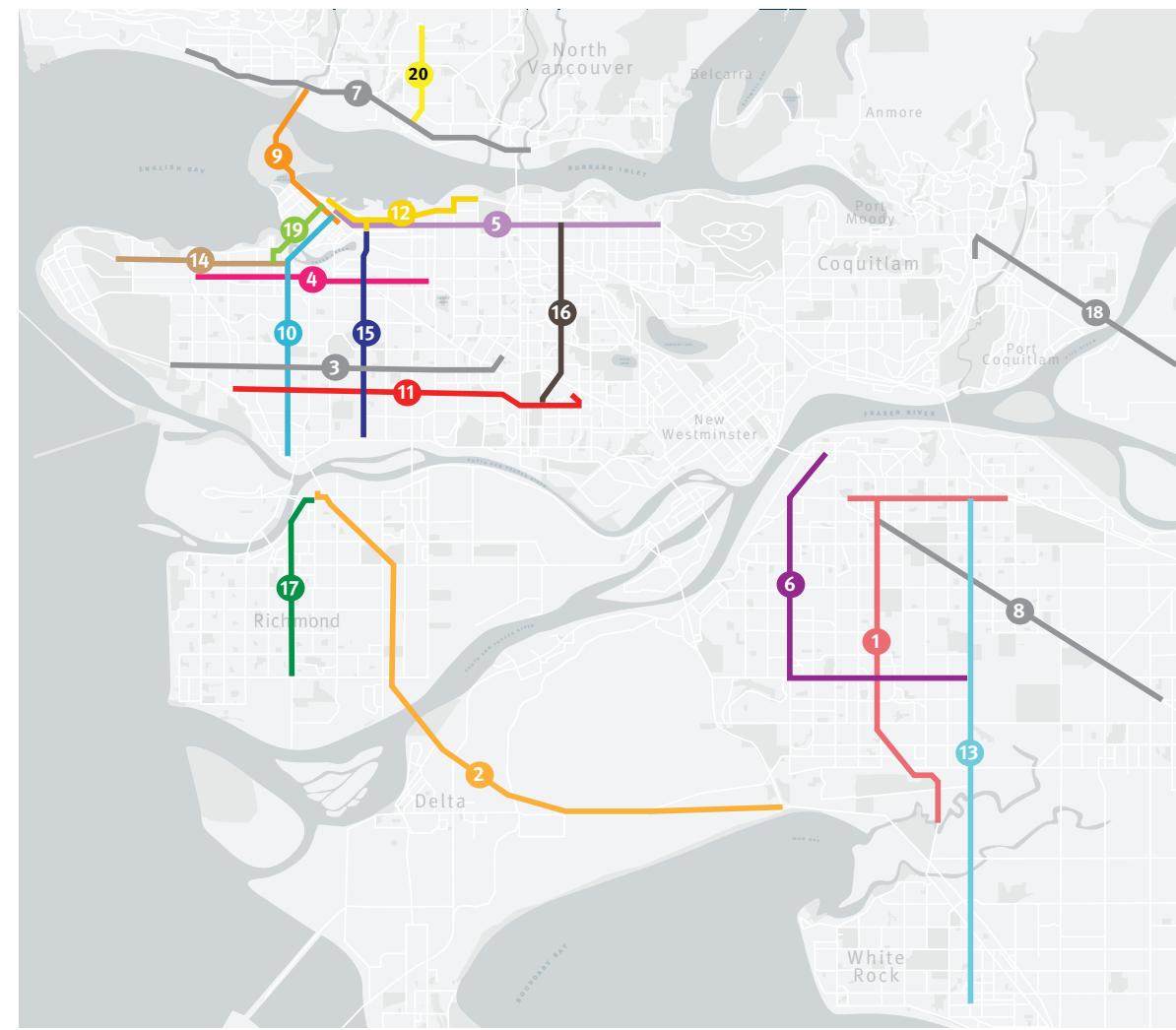
Map 14: Top 20 Bus Corridors Contributing to Passenger Delay

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



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. Coordinate 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.

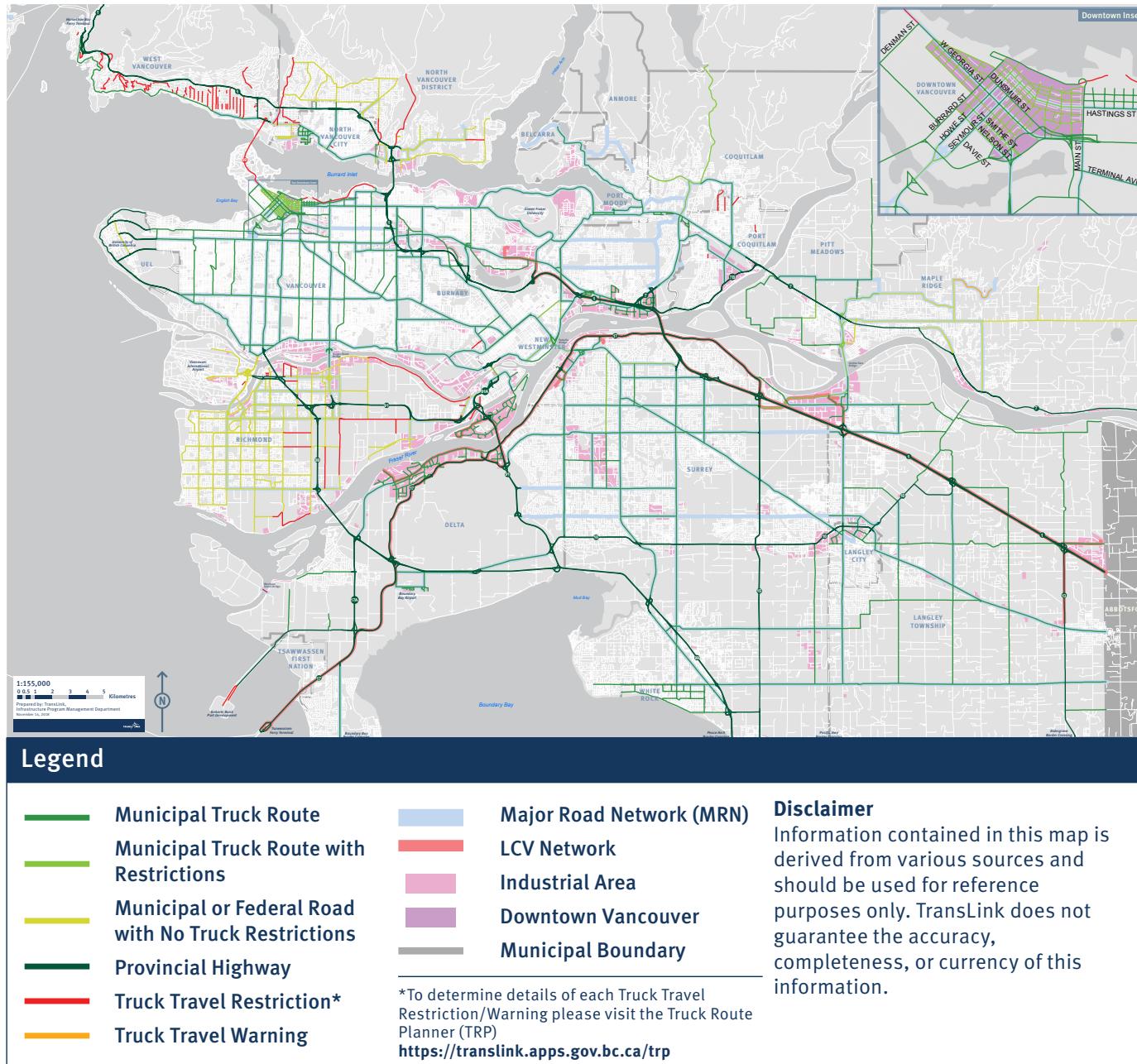
The region is also facing a critical shortage of industrial land. Managing the growing demand and limited supply of industrial lands will require balancing different industrial and commercial needs (e.g., warehousing, distribution, transportation access) and coordinating efforts to protect and intensify 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. Coordinate 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

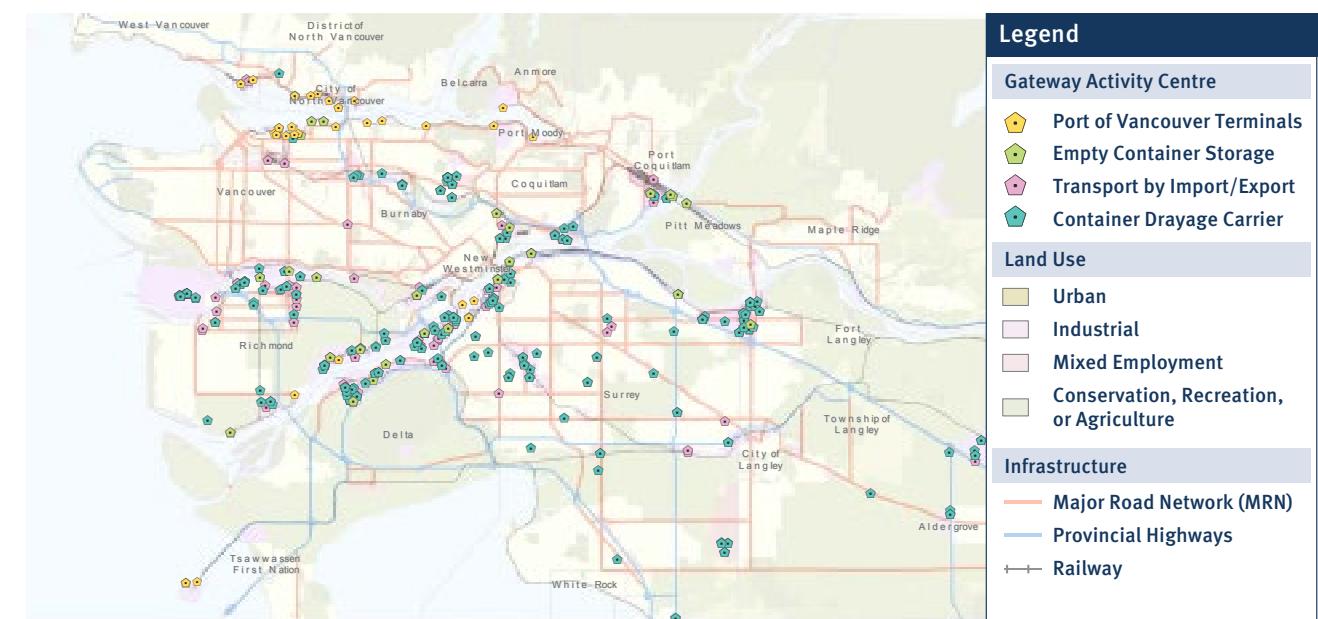


Source: Metro Vancouver, "Metro 2050 – Regional Growth Strategy – draft", June 2021, <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/DraftMetro2050.pdf>

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 coordinate 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



Coordinating Goods Movement in the Region

- 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.
- 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.
 - 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.
 - 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.
 - 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. 
 - 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.
 - Evaluate and assess viability of expanded short-sea shipping to reduce port-related container drayage traffic on the region's roads.
 - 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.

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 coordinate 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, coordinate, and respond quickly to emerging issues in real time.

This strategy envisions a real-time mobility management system that provides a platform for coordination 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:
- East-west connections on the North Shore.
 - East-west connections in North Surrey.
 - 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:
- 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.
 - Collecting urban mobility data with real-time sensors and GPS devices.
 - 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:

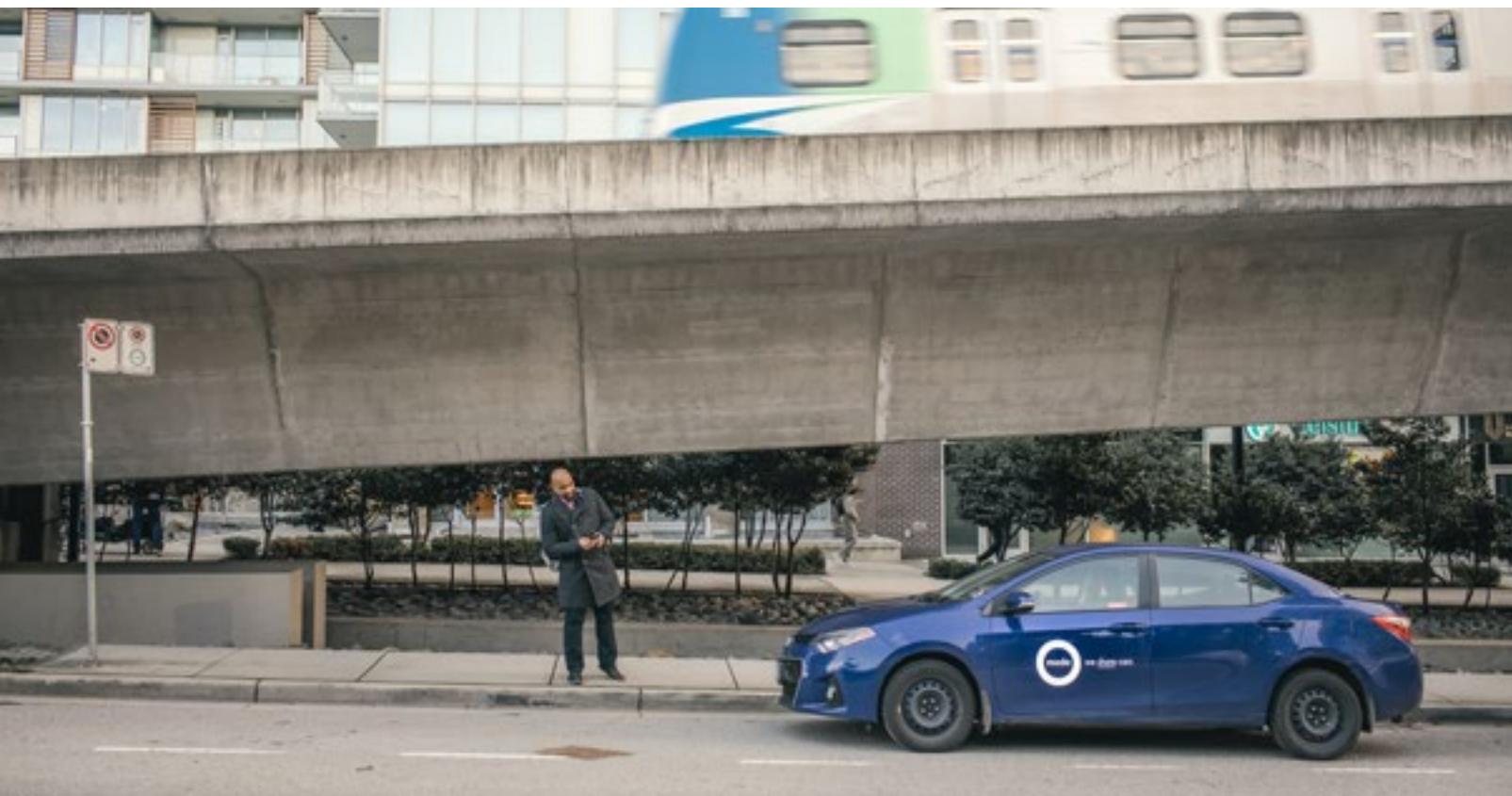
- a. Charging the right prices for on-street parking, i.e., the lowest prices that will leave one or two open spaces on each block, ensuring high levels of parking reliability and reducing congestion from vehicles cruising in search of a parking spot.
- b. Requiring permits to park personal and commercial 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. Coordinate 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. Coordinate 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.