Moving the Economy

A REGIONAL GOODS MOVEMENT STRATEGY
FOR METRO VANCOUVER

STRATEGIES & ACTIONS - JUNE 2017

TRANSLINK

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FOREWORD

The last century saw an unprecedented level of urbanization; such that more than half of all people in the world now live in urban areas. These people all need food, clothing, shelter, and access to the array of goods and services that help to support a high standard of living. These items have to be sourced, created, transported, and distributed to their final destinations, meaning that goods movement is an essential component of any urban region — no matter how large or small, or where in the world it is located.

As essential as it may be to the life of modern societies, figuring out how to accommodate the movement of goods and services within and through urban areas in a way that balances social, economic, and environmental objectives is an increasing challenge. For example, heavy commercial vehicles (HCVs) are an essential tool for moving goods, but they contribute to noise, vibrations, emissions, and safety concerns that impact the livability of the neighbourhoods they pass through. Commercial traffic and the general public are also typically competing for the same scarce transportation infrastructure, resulting in congestion, delays, and conflicts.

This competition for scarce road space is amplified in rapidly growing regions such as ours, which is expected to welcome one million people and add 600,000 jobs over the next 30 years. This means an additional 3 million personal trips every day. With a constrained

geographical area in which to grow, real estate costs for housing, businesses, and industry have continued to increase, causing more people to live further away from their workplaces, and businesses, such as warehousing and trucking, to move further east and away from the customers they service. Until we price road use more effectively, most of these 3 million more trips will be made by automobile and many of them will be long trips.

Alongside the challenges common to every urban region, Metro Vancouver plays an additional critical role as Canada's Pacific Gateway — providing the network of roads, waterways, rail facilities, and air and sea ports that connect British Columbia and Canada to Asia and the world. As such, in addition to moving goods and services around the region to support residents and businesses, the transportation system in Metro Vancouver also needs to support a growing volume of trips passing through our region to markets beyond its borders.

In addition to growth in Gateway-oriented commercial vehicle traffic, we are expecting a continued increase in local trips driven by local economic growth, consumer demand growth, a dramatic growth in e-commerce and associated deliveries, and transport dependent manufacturing methods that rely on just-in-time delivery.

New developments, such as the advent of vehicle automation are contributing to greater uncertainty about future transportation trends. Most scenarios suggest that, absent major policy interventions, automation could lead to a significant increase in urban traffic as the personal time-cost of driving decreases dramatically. In the end, substantially more cars and HCVs travelling more on a road network that does not look much different from today is a recipe for gridlock.

We need to figure out how to meet the anticipated growth in goods movement while protecting the region's livability and ensuring that the goods and services which support our economy can continue to move efficiently and reliably.

Having spent the past few years growing the region's knowledge base and understanding of goods movement issues, it is now time for more coordinated action. It is time to lay out exactly what needs to be done in a coherent and agreed-upon framework so that all partners are rowing in the same direction.

To that end, TransLink facilitated the development of this Regional Goods Movement Strategy in collaboration with a wide range of partners from across Metro Vancouver. It draws together actions for governments and agencies at all levels, the private sector, and other organizations.

This Strategy is the first of its kind in Metro Vancouver and we are excited by its potential. Experience shows that regions with a proactive and coordinated approach to goods movement championed by elected officials, community organizations, and industry are better positioned to fully realize their economic, social, and environmental objectives.

Ultimately, the challenge that this Strategy attempts to address is how to deliver goods and services more efficiently to more people and businesses within a shared and increasingly limited space in a cleaner, quieter, safer, and more cost effective way. It is an ambitious agenda, but one that together we can advance.

INTRODUCTION

Metro Vancouver must balance its role as both a large metropolitan region, as well as a major multi-modal international trading hub.

The movement of goods is complex, entailing the interaction and coordination of many modes —road, rail, marine, air, and pipeline — and of numerous public agencies, private firms, and shippers and receivers. For individual businesses, communities, and governments to all achieve their objectives as best as possible, it is important to coordinate and consider how the entire system works together.

Goods move through and within the region for a variety of reasons, including:

- Local deliveries: transport of products to businesses and homes for use and consumption within the region; for example, a shipment of produce to a local grocery store, a package delivery to a residence, or delivery of construction material and equipment to a construction site;
- Processing and production: movement of materials and components to and from manufacturing facilities, which produce finished consumer goods or which create "intermediate" goods for further manufacturing; for example, a window glass production facility, or a timber processing plant;
- Imports and exports: shipping of commodities and goods to and from the global marketplace; for example, export of grain from Saskatchewan, import of textiles from Asia, or imports of industrial machinery and components for resource projects in Western Canada.

For a more thorough overview of the state of goods movement in Metro Vancouver, please refer to *Moving the Economy: A Regional Goods Movement Strategy for Metro Vancouver – Context & Background* and *Appendix 1: Scope and Relationship to Other Plans*.

Given its broader national importance, the development of this region as one of North America's primary trade gateways is led by the federal and provincial governments, Port of Vancouver, the Vancouver Airport Authority, and other Pacific Gateway industry stakeholders. Meanwhile, the success of the urban region — which is also important to the success and competitiveness of the Pacific Gateway — is led by the local and regional governments in Metro Vancouver, TransLink, and the provincial government.

In light of these multiple and overlapping roles, the scope of this Regional Goods Movement Strategy is three-fold:

1. Articulate and advance priorities to improve intra-regional goods movement;
2. Coordinate with provincial and national partners to improve Pacific Gateway-oriented goods movement, focusing especially on areas of intersection with the regional transportation system;
3. Protect the environment and the health, safety and livability of our communities.

We need to ensure that goods movement objectives are considered together with other transportation and land use objectives in an integrated regional policy framework guided by *Metro 2040: Shaping Our Future*, *the Regional Transportation Strategy*, and municipal Official Community Plans.

Strategy Development: A Regional Collaboration

TransLink's mandate is to provide a regional transportation system to move people and goods. In the years since TransLink was created in 1999, much attention has been given to passenger travel. However, inadequate attention has often been given to goods movement. Challenges relating to jurisdiction and authority notwithstanding, this inaction has been at least partly due to a lack of data, information, and public-sector understanding about goods movement in our region.

To fill this information gap, TransLink, Metro Vancouver, the BC Ministry of Transportation and Infrastructure (MoTI) and Transport Canada have partnered on a number of studies including the *Metro Vancouver Dangerous Goods and Truck Classification Survey, Streamlining Opportunities for the Permitting, Enforcement, and Regulation of Regional Truck Movements, the Metro Vancouver Industrial Lands Inventory, Smart Corridor Strategy, and in collaboration with other stakeholders through the Gateway Transportation Collaboration Forum (GTCF), the Fraser River Trade Area and Roberts Bank Trade Area studies*.

Regional research has also been completed to better understand the role, benefits, and challenges of expanded short sea shipping and new inland terminals. In 2016, Metro Vancouver initiated a broader analysis of different approaches to supporting growth in Gateway trade.

In addition, the Applied Freight Research Initiative (AFRI), a joint initiative of Transport Canada, MoTI and TransLink, was recently established as a vehicle for ongoing collaborative research on goods movement.

While our understanding will forever be imperfect, it is now time to move beyond studies. It is time for action. It is time to lay out exactly what needs to be done in a coherent and agreed-upon framework – the development of this Strategy is the first step in launching an era of more proactive regional leadership on goods movement.

With that end in mind, and recognizing the critical importance of collaboration, multiple agencies came together to prepare this Strategy through several processes over the past 2 years:

- Consultants provided technical inputs via a series of studies including a major background report on the state of goods movement in Metro Vancouver
- The Regional Transportation Advisory Committee, which is comprised of representatives from each municipality and agency partner, provided guidance at key milestones
- Individual and group meetings and workshop sessions were held with representatives from municipalities, senior governments, partner agencies, and community, business and goods movement industry partners, including:

  - 23 Local Governments
  - Metro Vancouver
  - BC MoTI
  - Transport Canada
  - Port of Vancouver
  - Vancouver Airport Authority
  - Insurance Corporation of BC (ICBC)
  - Greater Vancouver Gateway Council (GVGC)
  - BC Trucking Association (BCTA)
  - Vancouver Board of Trade
  - Surrey Board of Trade
  - Vancouver Transportation Club
  - Western Transportation Advisory Council (WESTAC)

TransLink staff consolidated all of this input and guidance into two documents: *Moving the Economy: A Regional Goods Movement Strategy for Metro Vancouver – Strategies & Actions,* which is the document you are currently reading; and an accompanying document – *Moving the Economy: A Regional Goods Movement Strategy for Metro Vancouver – Context & Background* The Strategy provides an agreed-upon framework for public and private sector partners to collaborate on priority actions.

The Challenges We Still Face

Even with the steps we have taken to improve goods movement in the region, significant challenges remain in meeting and balancing the needs of both goods movers and the communities in which they operate.

Thanks to a consistent regional Vision, ongoing coordination, and ambitious investment, we have achieved a transportation system that supports the local economy, connects the region to Canada and the world, and is frequently held up as a North American model of integrated multi-modal planning.

We still have work to do, however, to advance the region's goals (as set out in both Metro 2040 and the Regional Transportation Strategy) of enabling a sustainable economy, protecting the environment and climate, and developing healthy, safe, livable, and complete communities.

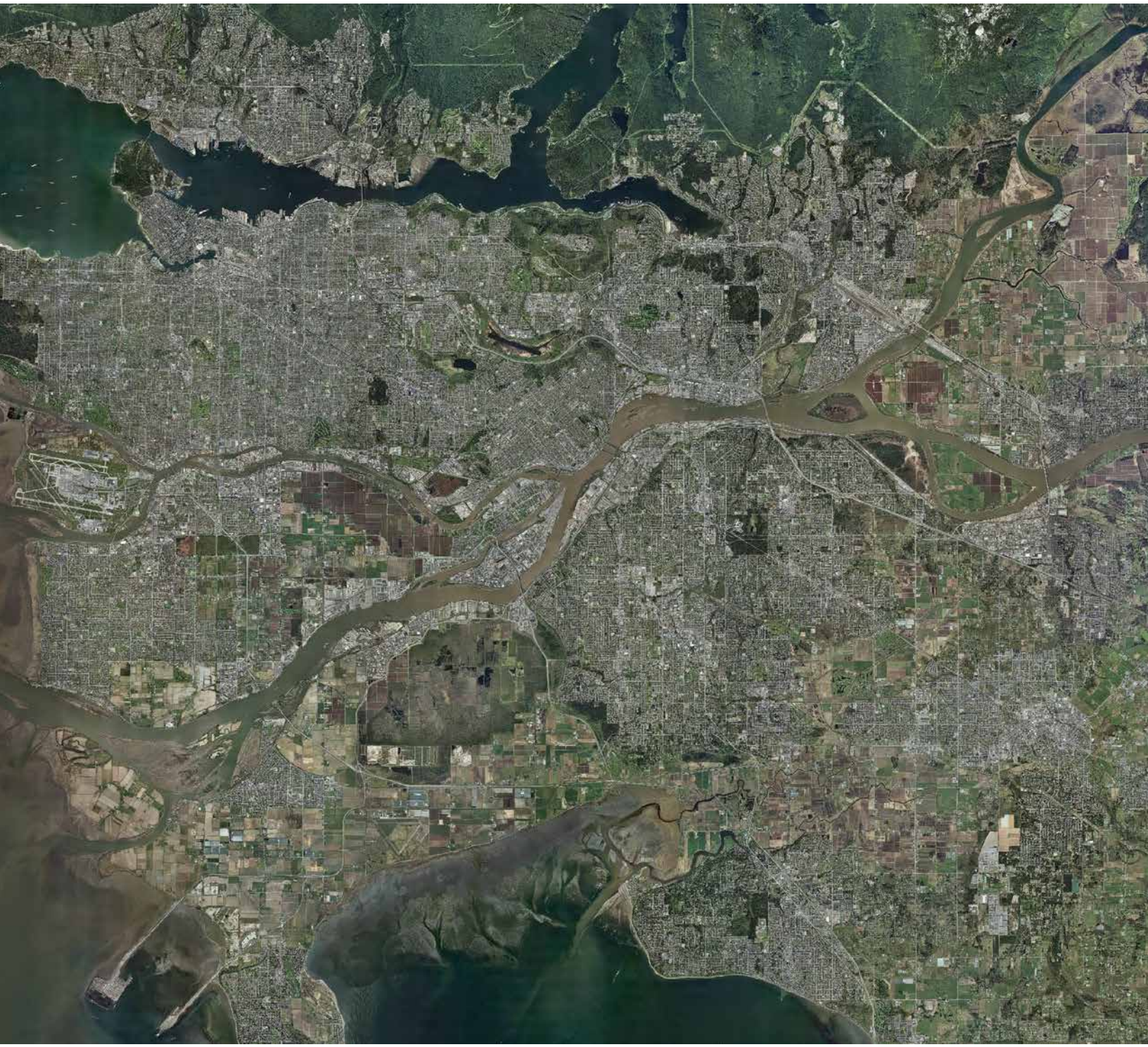
To do so, we need to continue to carefully manage urban growth and the transportation system as we add another 1 million people over the next 30 years. We also need thriving businesses that can provide the jobs, and the goods and the services that we need to live a good life. Those businesses, in turn, need to be well-served by efficient and reliable goods movement to thrive.

There are four key goods movement challenges that constrain the private sector from achieving its full potential. These challenges have mostly to do with delays and uncertainty, which serve to increase operating costs. In turn, these increased costs are passed on to customers, businesses, and residents alike. In our region, key causes of delay and uncertainty for goods movers include:

1. a lack of incentives and options for passenger car drivers to reduce their vehicle use leading to roadway congestion and reduced travel time reliability;
2. lack of coordination and consistency in regulations between jurisdictions;
3. limited availability of accessible industrial land; and
4. lack of public awareness of the value and positive contribution to our economy of goods movement.

In our region, as in almost every urban region, we must also grapple with several key challenges relating to the impacts of commercial vehicles on the communities in which they operate, including:

5. competition for scarce road space and curb-side parking space;
6. aging road infrastructure, which was built when design standards were based on smaller vehicle configurations;
7. safety and perceptions of safety;
8. vibrations and noise, especially adjacent to residential areas; and
9. emissions of visible smoke, smog-forming contaminants, and greenhouse gases.



VISION AND GOALS

Vision

As a region, we maintain our economic competitiveness and global position as a great place to live and do business because we deliver goods and services efficiently and reliably in a way that supports our prosperity and protects the environment, health, safety, and livability of our communities.

The actions in this Strategy set out to achieve two overarching goals: tthe first is aimed at improving the efficiency of goods movement in the region, while the second is aimed at mitigating the negative impacts of goods movement on the communities through which goods move.

Goal 1:

More efficient and reliable goods movement

- Increase travel time reliability on the Regional Truck Route Network (Target TBD).
- Reduce the share of kilometers that commercial vehicles drive in congested conditions (Target TBD).

Goal 2:

Cleaner, safer, and quieter goods movement

- Reduce casualty collisions involving commercial vehicles (Target TBD).
- Reduce goods movement related noise and vibrations experienced by residents (Target TBD).
- Reduce Criteria Air Contaminant (CAC) and Greenhouse Gas (GHG) emissions from commercial vehicles (Target TBD).

The *Implementation and Monitoring* section outlines a proposed framework to develop effective performance measures against which to establish a baseline, to gage the effectiveness of the actions in this Strategy, and to set targets that drive continuous improvement.

Goal 1: More efficient and reliable goods movement

Traffic congestion wreaks havoc on travel times and travel time reliability, and has been identified as a top regional transportation issue in Metro Vancouver.

Congestion occurs when the number of road users (demand) exceeds road capacity (supply) at which point the efficiency of that part of the road network is compromised resulting in delays and unreliable travel times. There are two types of congestion: recurrent, which is typified by the daily buildup of traffic during the commuter peak periods, and non-recurrent, or variable congestion, which is caused by crashes, construction, or other irregular and unanticipated events.

While goods movers can plan around recurrent congestion, it is extremely challenging to compensate for non-recurrent congestion, resulting in missed or late deliveries. Improving travel time reliability, or in other words, reducing non-recurrent congestion, is therefore a key objective under Goal 1, followed closely by reducing the share of kilometers that commercial vehicles drive in congested conditions, or in other

words, reducing recurrent congestion. It is important to note that these objectives can sometimes be in tension, requiring trade-offs between reducing travel times and improving their reliability.

Goal 2: Cleaner, safer, and quieter goods movement

Most people appreciate that goods need to be delivered to their local stores to keep the shelves well stocked with the things that they want and need. Most people also agree that heavy trucks and residential areas don't mix well. HCVs contribute to emissions, noise, and vibrations, while vying for road space and parking space in busy neighbourhoods and town centres where people live and work. As the region continues to grow denser there will be increased interaction between residents and commercial vehicles and these tensions will only continue to increase. Promoting cleaner, quieter, and safer goods movement is critical to supporting the region's vision for compact and complete communities.

Traffic emissions are a local air quality and health concern — especially for residents who live in close proximity to a major arterial roadway. They are also a major issue for climate change — with one-third of the region's greenhouse gas emissions coming from on-road vehicles, including 5% from HCVs. As vehicle emissions and fuel efficiency standards become more stringent, once commonly held perceptions of trucks billowing black smoke and leaving behind a thick stench of diesel fumes in their wake are becoming increasingly dated. Indeed, today's diesel-powered trucks are cleaner and quieter than ever before and emissions will continue to drop as the fleet is renewed. To accelerate this progress, this Strategy recommends continued actions to reduce aggregate emissions from the on-road goods movement sector.

Safety and perceptions of safety will also remain a key issue despite rapid developments in passive and active driver assistance systems and automated vehicles. Many people find sharing road space with HCVs — whether in a car, on a bicycle, or on foot — to be quite stressful. To address these issue over the near to medium term when a substantial share of the vehicle fleet will still be operated by human drivers, this Strategy recommends actions to improve driver training, public education, and enforcement.

Traffic noise is frequently a dominant concern voiced by the public with respect to goods movement in their communities. Transportation noise and vibrations can be disruptive, interfere with daily activities, reduce property values, and adversely impact health and overall quality of life. Accordingly, this Strategy advances actions to reduce the noise and vibrations that residents of this region experience from both HCVs and trains.

The two overarching goals of this Strategy are to ensure that residents, workers, and visitors enjoy a safe, clean, healthy, and quiet urban environment, while ensuring that goods movers within the region can operate efficiently and reliably and with the support of the communities they serve and through which they move.

Making it happen isn't possible based on the actions of any single partner in either the private or public sector - responsibility for the actions contained in this document is spread across many players. Accordingly, strong and collaborative partnerships will be key to the success of this Strategy.

STRATEGIES AND ACTIONS

There are three key levers that the partners in this Regional Goods Movement Strategy can deploy to achieve the overarching goals of getting people and goods where they need to go as reliably, safely, efficiently, quietly, and cleanly as possible. As a region, we can:

1. **Invest strategically to maintain and expand the transportation system;**
2. **Manage the transportation system to be more efficient and user-focused;**
3. **Partner to make it happen.**

The specific strategies and actions listed in the following section are not the domain of any one agency or sector. They instead are an effort to identify what needs to happen to achieve the aforementioned goals, acknowledging that coordination among various stakeholders is critical for success. The Implementation and Monitoring section proposes lead and supporting roles for these stakeholders for a short-list of priority implementation actions.

The relative priority of the actions set out here may shift over time as broader economic and technological forces shape and influence our transportation landscape. For example, the state and the nature of our economy – both globally and locally – will have a major influence on commercial vehicle traffic volumes and composition. The eventual widespread adoption of Advanced Driver Assistance Systems (ADAS) and prospect of fully automated vehicles have the potential to make personal vehicle use accessible to a much broader segment of the population, thus substantially increasing traffic volumes – unless we respond with strengthened regional growth management, road use charging, and parking management. Automation of cargo-delivery vehicles of all shapes and sizes, including aerial drones, has the potential to dramatically remake the goods movement industry.

For the most part, the actions advanced in this Regional Goods Movement Strategy (RGMS) are flexible and resilient and will still be relevant in many different possible futures.

1.0 Invest Strategically to Maintain and Grow the Transportation System

Investments are needed in the region's transportation network to ensure that we can accommodate the projected growth in both intra-regional and Gateway-oriented goods movement.

Roads play a central role in the region's transportation system — carrying people, and goods by foot, bicycle, bus, car, and HCVs, including cargo vans, straight trucks, and tractor semi-trailers. The road network is also the most mature part of our transportation system, having benefited from a decade of consistent investment from all levels of government. Recent and upcoming major capacity expansions along important goods movement corridors include the widening of Highway 1, Highway 10, and Highway 15, the construction of the South Fraser Perimeter Road, and the construction of the new Golden Ears Bridge, Port Mann Bridge, Pattullo Bridge, and the George Massey Tunnel replacement.

Over the past two years, the Gateway Transportation Collaboration Forum (GTCF), a joint effort of the federal government and Provincial Ministry of Transportation, TransLink, Port of Vancouver, and the Greater Vancouver Gateway Council, has been assessing the Gateway's infrastructure needs and transportation issues within the region. While these Gateway projects are beyond the scope of this Strategy, which focuses on regional, urban freight transportation, it is important to coordinate with Gateway partners to maximize the local benefits and minimize the negative impacts of any future Gateway investments.

As our region grows over the next 30 years, the annual number of personal trips is forecast to increase from 2 billion to 3 billion – an increase of 50%. Absent any major public policy intervention, widespread adoption of automated vehicles in the coming 10-30 years could lead to a significant increase in driving by making personal vehicle use more accessible to a broader segment of the population. However, by maintaining the region's commitment to managing growth as set out in Metro 2040, and by aggressively pursuing a more comprehensive approach to road use charging and transit expansion as set out in the Regional Transportation Strategy – the total growth in personal driving (measured by Vehicle Kilometres Travelled – VKT) can be kept to a minimum. As a result, targeted investments in new road capacity should be sufficient to meet demand – focused especially on serving newly developing areas.

HCVs represent around 5% of both the current and future forecast VKT; while increasing HCV volumes will not have a significant impact on overall vehicle volumes, they will have an impact on road capacity needs along a few key corridors in the region where their travel is concentrated.

Where bottlenecks and travel-time reliability problems are anticipated to persist along these corridors, even after the implementation of comprehensive road use charging, investments and further interventions, including increasing road capacity, may be warranted. Road investments are also needed to maintain assets in a state of good repair, to improve safety for all road users, and to increase local connectivity.

Furthermore, in locations where the road and rail network meet, additional attention is required. Managing delays, safety, and connectivity impacts at rail crossings benefits rail, HCVs, and other road users alike.

Experience in every urban region in the world has shown that expansion of the road system alone cannot solve our transportation and congestion problems. New road connections and capacity will, at first, reduce congestion and shorten travel times for people and goods. However, reducing the cost of driving in this way stimulates, or "induces" demand, and very soon there are more cars on the road, ensnaring commercial goods and commuters in the resulting congestion.

To ensure that major new road capacity investments actually improve travel times and enhance travel time reliability for goods movement, and are not gobbled up by encouraging more personal automobile travel, the partners to this Strategy commit to making major transportation investment decisions in tandem with commitments to implement comprehensive mobility pricing.

Meanwhile, to provide people with viable alternatives to personal automobile travel, new investments in walking, cycling, and transit are needed, including major increases in bus service across the region and rapid transit in Surrey and the Broadway corridor.

1.1. Maintain roads and bridges in a state of good repair.

Regional goods movement relies heavily on the regional road network. However, as in other Canadian urban areas, that infrastructure is aging. There is a corresponding, and growing need to invest in the rehabilitation of the regional road network, in order to keep it in a state of good repair.

The benefits of well-maintained roads and bridges are many: ensuring safe and efficient operations for all users, including goods movement; reducing vehicle operating costs; reducing roadway noise — especially on truck routes; and maintaining the original investment in the infrastructure in recognition of the fact that deferred maintenance and rehabilitation is costlier in the long term. In addition, bridges and other structures, such as dikes, require special attention to ensure seismic preparedness and resilience to the effects of climate change.

While maintaining assets that already exist is sound management practice that should ideally occur as a matter of course, this has not typically been the case in North America. Governments have often prioritized 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 seeing critical road infrastructure fall into poor or marginal condition. In this region, we commit to avoiding that downward spiral of deferred maintenance.

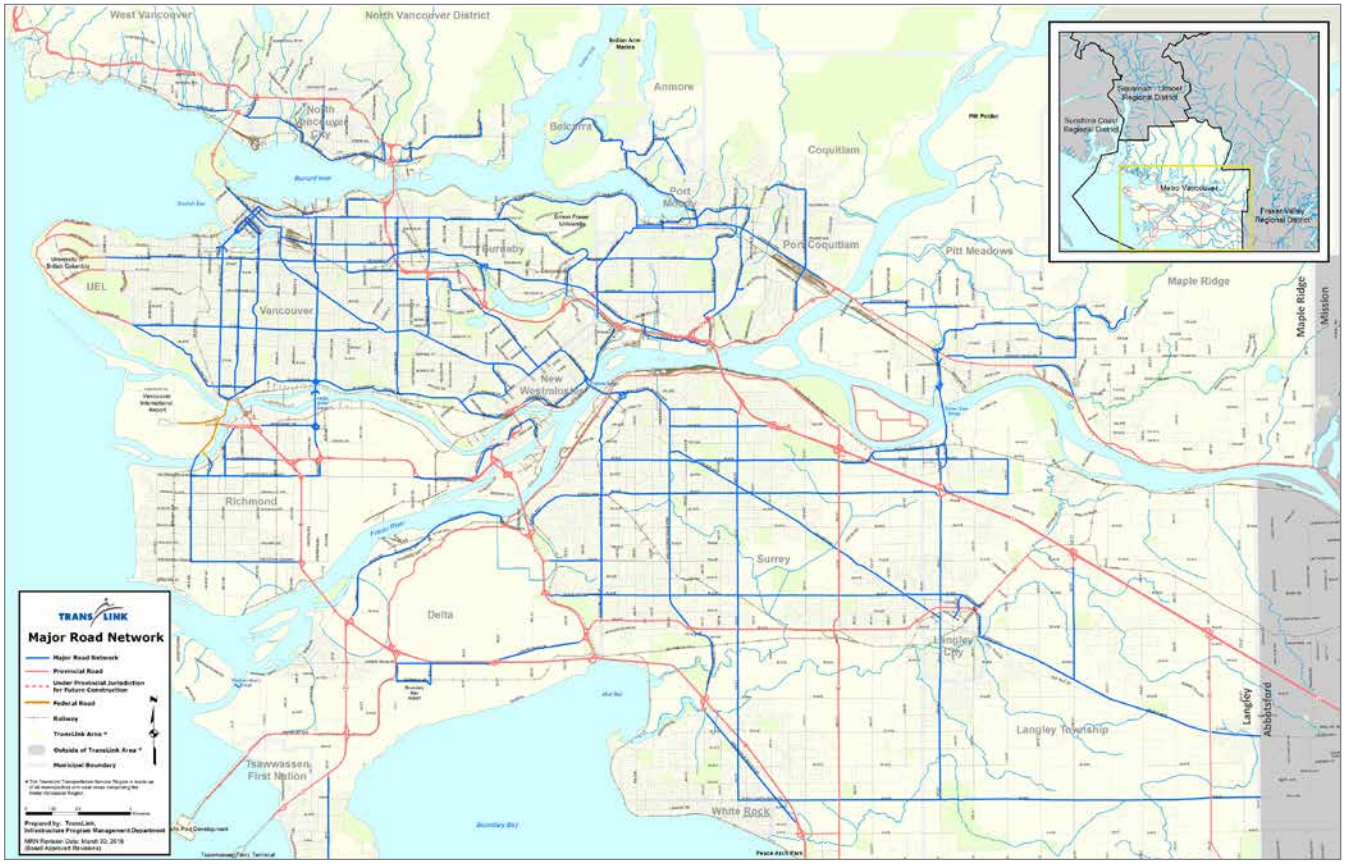


Figure 1: The Major Road Network, Provincial Highways, and Municipal Road Networks today

1.1.1. Monitor the condition of pavement and structures on the Major Road Network on an annual basis in order to inform maintenance priorities.

1.1.2. Ensure the timely, adequate and ongoing availability of funds to operate, maintain, and rehabilitate the regional road network to keep it in a state of good repair.

1.1.3. Provide priority funding to operate, maintain, and rehabilitate bridges and structures to improve safety and resilience in the face of climate change and seismic impacts, proactively planning for future bridge rehabilitation and/or replacement.

1.2. Make strategic investments in the road network.

As discussed at the beginning of this section, while the need for wide-spread road capacity increases is not anticipated, targeted investments are still required to improve goods movement, road safety and local access in newly developing areas where road network connectivity is poor, and to address bottlenecks and travel time reliability on key high-volume goods movement corridors that will not otherwise be alleviated by comprehensive road use charging.

In order to ensure that these needed investments do not induce a significant increase in personal automobile travel, thus negating the benefits to

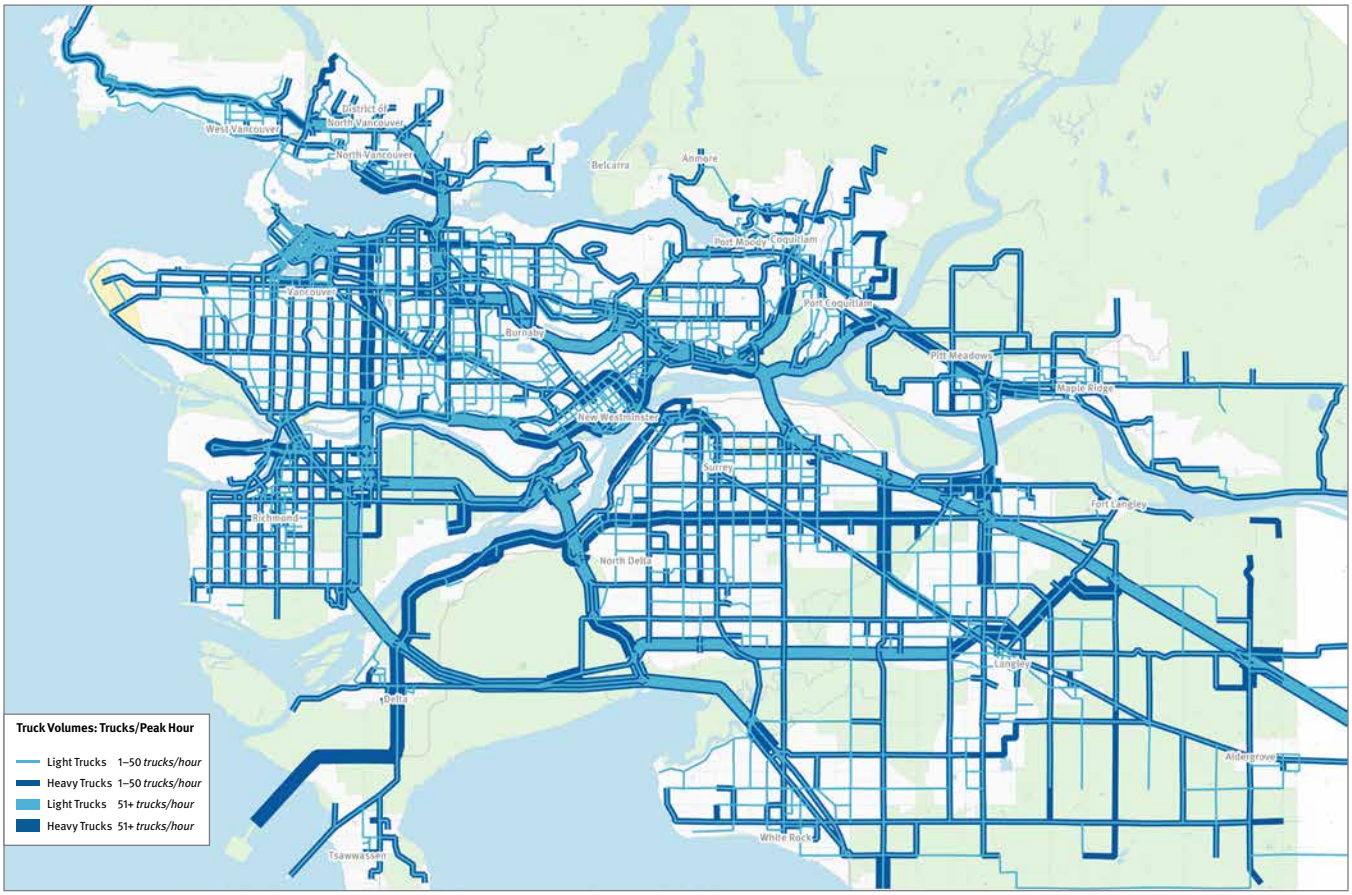


Figure 2: Truck Volumes on all Roads in Metro Vancouver (AFRI 2012)

goods movement, the partners to this Strategy commit to implementing comprehensive mobility pricing in tandem with any future major transportation investments.

1.2.1. Ensure that road investments achieve their stated objectives to support goods movement by making concurrent commitments to road network optimization, road use pricing measures, land-use measures, and disaster resilience and response.

1.2.2. Coordinate with Gateway partners on priority infrastructure investments to accommodate long-term growth in Gateway trade demand while ensuring compatibility with regional priorities and minimizing negative impacts to local communities and the environment.

1.2.3. Coordinate with the BC Ministry of Transportation and Infrastructure on the replacement of the George Massey Tunnel, a key component of the regional and provincial road network, with a new tolled bridge that includes dedicated transit priority lanes.

1.2.4. As outlined in the Mayors' Council Transportation Plan, and elsewhere, replace the Pattullo Bridge, a critical connection between Surrey and New Westminster, with a new, four-lane bridge funded primarily by user pricing. The replacement bridge will be designed in a manner so as to not foreclose the consideration of a potential future expansion to six lanes, subject to an all-party agreement and Mayors' Council approval.

1.2.5. Find and implement 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 traffic and HCV volumes on the viability and livability of the New Westminster Regional City Centre.

1.2.6. Establish performance guidelines for the Major Road Network to monitor performance, assess the effectiveness of investments, and guide future capital program and cost-sharing decisions.

1.2.7. Update the composition of the MRN to ensure that the network is best serving the goods movement needs of the region.

1.2.8. Where pricing and other management measures are not adequate to improve safety, local connectivity, and goods movement reliability on the MRN and designated truck routes, consider capital investment in projects identified by municipalities on major goods movement corridors.

1.2.9. Address travel time reliability, safety, and noise through whistle cessation at railway crossings. Improvements should address any outstanding discrepancies with the new federal road-rail crossing regulations. Example actions include:

- Installing or improving automatic warning devices, road signs, and lighting at the approaches to a level crossing;
- Synchronizing crossing signals with nearby road traffic signals;
- Adjusting nearby roadway alignments, grades, and intersections;
- Considering grade-separation where high-traffic rail lines cross a road that carries high goods movement volumes or high volumes of walking, cycling, or transit trips.

1.3. Shift personal driving trips to walking, cycling, and transit.

Transportation delays create high costs across global value chains. For example, the added expense of each extra day an unfinished product remains in transit has been compared to a tariff of 0.2 to 2.1 percent.

Every time we help someone take a trip by walking, cycling, or transit instead of driving, we not only save money, space, and energy — we also reduce congestion and improve travel-time reliability for regional goods-moving trips.

About 16% of all automobile trips in the region are less than 2km and an additional 6% of all automobile trips in the region are between 2 - 5km. These trips contribute significantly to roadway congestion — clogging up roads in and around our Urban Centres.

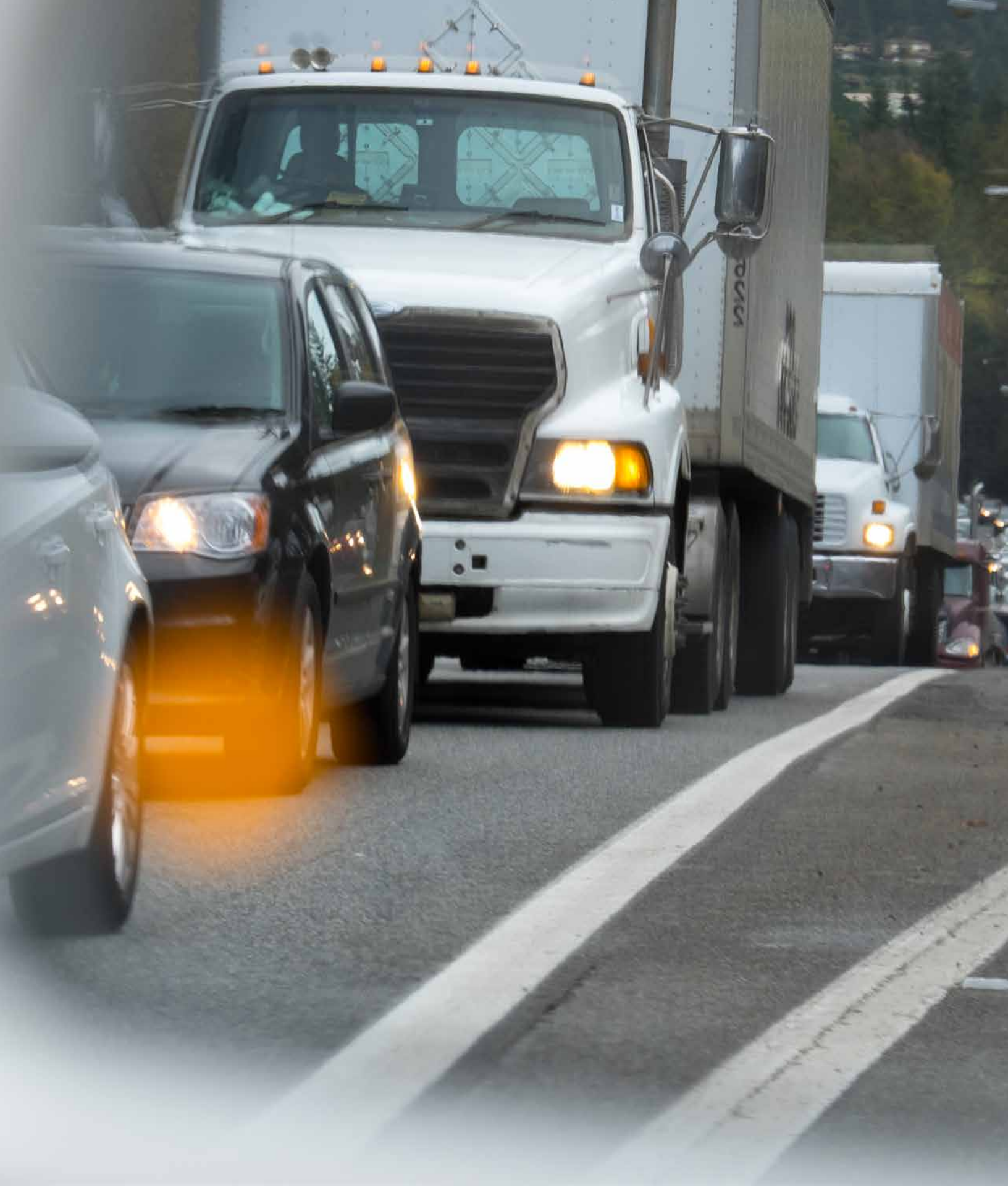
Many of these trips could be made by walking and cycling if safe and continuous networks existed. Parts of the region still have major gaps in the walkway network and most of the region still lacks the traffic-protected bikeways that are needed to support cycling by people of all ages and abilities.

We also need to invest in substantial improvements to the transit system so that it can be time-competitive for the 40% of all automobile trips that travel distances greater than 8km.

1.3.1. Make walkway, bikeway, and intersection safety improvements where major walking and bicycling routes cross rail corridors, and on all roads with high traffic volumes, high HCV volumes, complex road geometries, high accident levels, or other conditions that warrant increased attention to help meet active transportation needs. In addition, ensure that sidewalks are provided along all major arterials and collectors.

1.3.2. In order to minimize on-street conflicts between cyclists and HCVs, make significant and early investments to complete the bikeway network, as outlined in the Regional Cycling Strategy. The focus should be on Class 1 bikeways physically protected from motor vehicle traffic and suitable for all ages and abilities.

1.3.3. Make investments to maintain existing transit service and expand the transit system, including major increases in bus service across the region, new B-Line routes, transit-priority in congested areas, and rapid transit in Surrey and the Broadway corridor to entice people to switch from driving and to reduce congestion for those road users who have no alternative.



2.0 Manage the transportation system to be more efficient and user-focused

To ensure we get the most value from our investments in the transportation network, while reducing the adverse impacts, we need to better manage the system through ITS, traffic management, and demand management strategies.

Some goods, for some portions of their journey, can be shifted from HCVs to other modes. However, many goods cannot realistically be carried any other way. In these cases, transportation authorities can help improve goods movement efficiency with a host of cost-effective management strategies before turning to capital investment solutions. The strategies described in this section help create space for more innovation and efficiency from both the public and private sectors – allowing more to be accomplished with the same assets.

2.1. Make travel safer for all users.

The transportation system should be designed and managed with safety as a top priority so that both personal and commercial users can travel free of fear from harm. HCV drivers have an excellent safety record. Indeed, in British Columbia from 2007 to 2013 they were at fault in only 35% of casualty collisions (i.e. collisions that resulted in an injury or fatality), and over this period the collision rate for HCVs dropped by 19%. This suggests that, rather than focusing on commercial vehicle drivers, there is an opportunity to improve road safety by focusing on passenger car driver training, supporting road safety programs and awareness campaigns about sharing the road with HCVs, and stepping up enforcement targeting dangerous drivers.

Still, HCVs have an imposing presence on the road, and most people find sharing road space with them to be quite stressful.

Common safety concerns relate to their interaction with vulnerable road users, especially cyclists and pedestrians, children, the elderly, motorcycles, slow-moving farm equipment, road-side construction workers, and emergency responders.

2.1.1. Make awareness of how to safely operate around HCVs a key component of driver's license training courses and examinations for non-commercial drivers in British Columbia.

2.1.2. Make pedestrian and cyclist safety awareness a key component of driver's license training courses and examinations for commercial vehicle drivers in British Columbia.

2.1.3. Deliver public education campaigns targeting drivers, pedestrians, and cyclists to help raise awareness about how to safely operate around HCVs.

2.1.4. Increase resources to traffic enforcement focused on targeting dangerous automobile drivers, who are at fault in 65% of casualty collisions involving an HCV.

2.1.5. Work with industry and regulators to encourage uptake of Advanced Driver Assistance Systems (ADAS) such as pedestrian and cyclist collision avoidance systems for HCVs to help

minimize the chances of collisions with vulnerable road users, and monitor ongoing research about the benefits, costs, and overall effectiveness of equipment such as side guards to reduce the severity of collisions when they do occur.

2.1.6. Develop a best practices guide and recognition scheme for goods movement operators on improving road and operational safety.

2.1.7. Advance a more unified regional program of commercial vehicle safety inspections on the region's roads in partnership with the Commercial Vehicle Safety Enforcement (CVSE) branch.

2.2. Make the transportation system easy to understand.

Easy-to-access information and a seamless, easy to understand and consistently defined wayfinding system (including directional signage, maps, and trip-planning tools) can help goods movers plan their trips efficiently and improve delivery and journey reliability.

Accessible information that HCV drivers and dispatchers need to plan itineraries, but cannot find easily elsewhere, could include truck routes, real-time traffic conditions, truck size, weight and parking regulations, key infrastructure and services to support goods movement, including the location of truck stops and truck parking facilities.

2.2.1. Collaborate to develop a consistent set of truck route definitions, restrictions, and signage in order to provide a uniform and coherent system of wayfinding across the region.

2.2.2. Provide integrated information materials online and in hard copy geared to HCV drivers on topics such as parking, loading and unloading regulations, operating restrictions, off-peak deliveries, size and weight regulations, and route clearances.

2.2.3. Improve reliability and recoverability through wider use of dynamic messaging signs that indicate estimated travel times and delays on major truck routes, especially leading up to major bridge crossings.

2.3. Designate, manage, and regularly update the Regional Truck Route Network (RTRN).

The current RTRN is a collection of truck routes and restrictions defined through municipal bylaw, with limited coordination across jurisdictional boundaries. Recognizing the regional nature of many truck movements, this action focuses on steps to create a more cohesive and unified regional network.

2.3.1. Increase the consistency by which truck routes are designated across the region through collaboratively developed design guidance for the RTRN. Examples include:

- hierarchy of routes;
- connectivity to major truck trip generators;
- directness;
- flexibility and redundancy;
- parking restrictions and other parking management solutions;
- dangerous goods routes, and
- mitigation of any negative community impacts.

2.3.2. Develop a clear, transparent and systematic process to approve changes or amendments to the RTRN.

2.3.3. To improve travel time reliability, explore opportunities to implement freight priority measures, both physical and through pricing, on key corridors and at key bottlenecks in the RTRN.

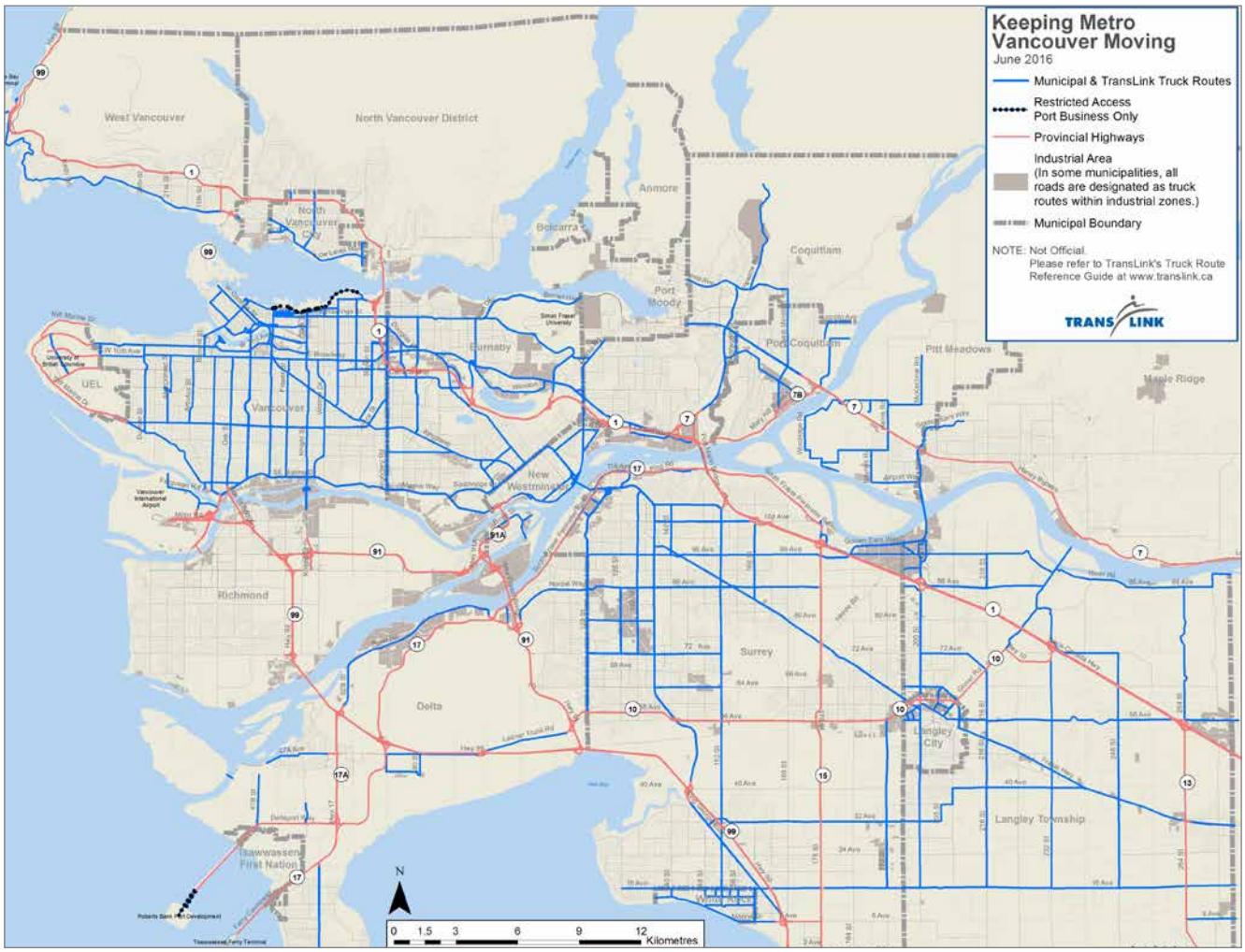


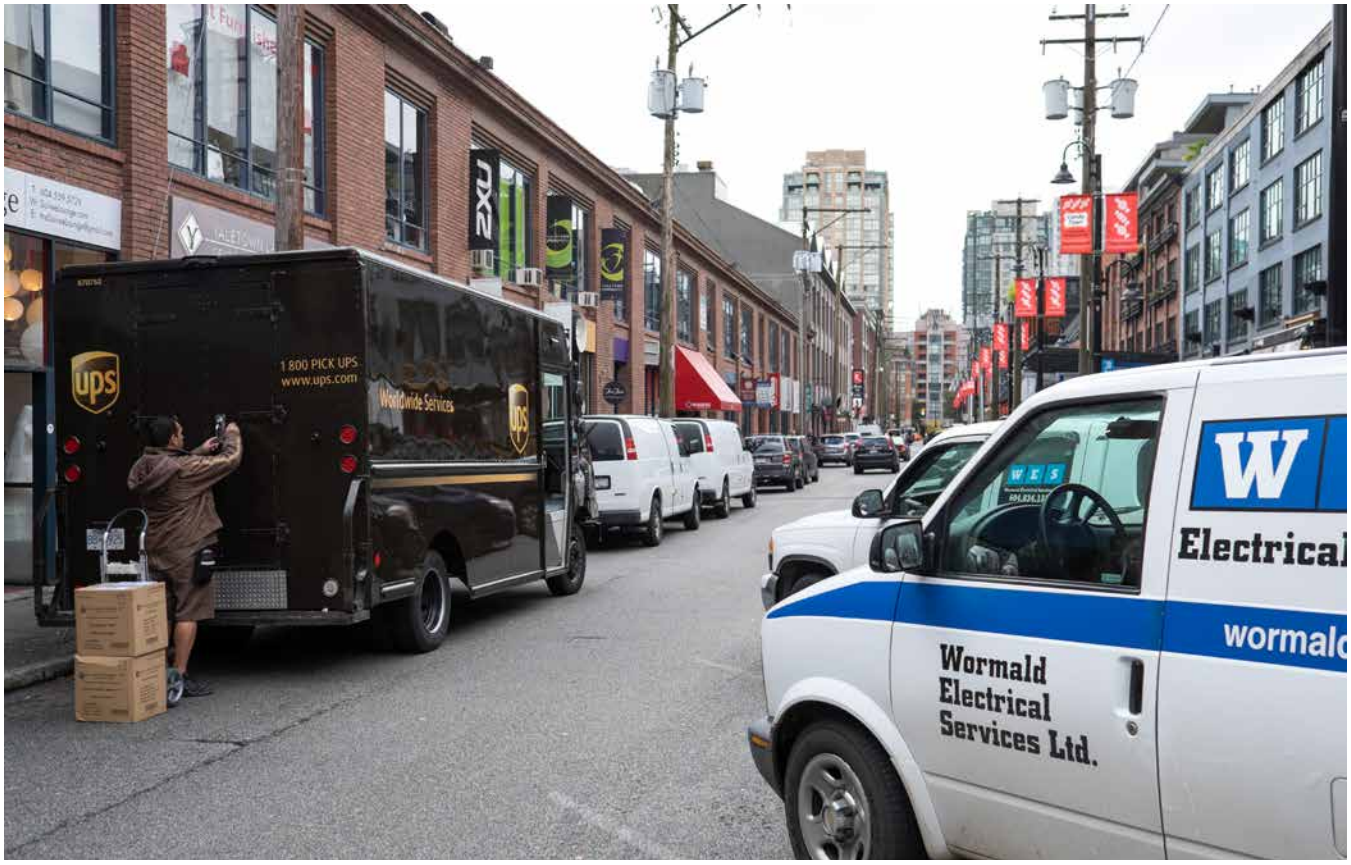
Figure 3: Regional Truck Route Network (RTRN)

2.3.4. Publish and widely communicate the RTRN in order to:

- Provide clarity to truck operators for route planning;
- Help inform land use planning and private sector locational decisions;
- Help inform asset management and road investment prioritization;
- Help prioritize and focus resources for on-road enforcement of passenger and commercial vehicles and incident management.

2.4. Implement system management solutions to improve travel time reliability.

The region's road network should provide more reliable travel times so that goods movers can plan and make their trips more efficiently and cost-competitively. The Regional Transportation Management Centre is well equipped to lead initiatives in this regard, including leveraging Intelligent Transportation System (ITS) and other traffic management solutions. TransLink's multi-modal Area Transportation Plan process provides



good opportunities to seek community and customer-side solutions such as support for off-peak deliveries and more active curbside management.

2.4.1. Work to reduce congestion and improve goods movement travel time reliability through basic system management measures as well as measures focused on the RTRN. Actions include:
- real-time monitoring of regional traffic data;
- adaptive signal control;
- dynamic messaging signs;
- rapid and coordinated incident response;
- coordinated roadwork permitting and scheduling.

2.4.2. Working with municipalities, develop sample standards and guidelines that will improve loading and unloading efficiency, and minimize conflicts with other street users in congested urban areas through the implementation of active curbside management solutions and improved building access. Implementation can be through urban road design, by-laws, andcontrols at the time of development and building permit application. Examples include:

- designate sufficient loading and unloading zones in commercial areas;
- increase enforcement and fines for illegal parking of automobiles in loading and unloading zones;

- increase enforcement and fines for illegal parking of commercial vehicles during loading *and unloading;*
- designate loading and unloading times that minimize congestion and conflict with other street users, considering off-peak hours where possible.

2.4.3. To reduce road congestion during peak periods and make better use of existing road capacity during off-peak hours, create a regulatory and policy environment that encourages businesses to implement more flexible freight delivery times in a way that does not negatively impact community livability. Examples include:

- adjust regulations and explore incentives to shippers to grow the demand for off-peak deliveries;
- develop model bylaws to facilitate off-peak shipping and receiving for consideration and adaptation by municipalities;
- where appropriate, amend municipal by-laws and regulations relating to noise and business hours of operation to enable loading and unloading during off-peak hours;
- recognizing that goods movers are service providers and respond to their customers' needs, identify and explore strategies and actions to increase demand for off-peak pick-up and delivery.

2.5. Harmonize truck permitting and regulations.

Commercial vehicle weights and dimensions regulations, permit policies, and enforcement vary across the 23 Metro Vancouver muncicpalities and the provincial highway system, creating confusion and administrative burdens for those applying for permits and those reviewing and approving the applications. Streamlining and harmonizing these regulations, policies, and processes will reduce red tape, improve permit approval turn-around times, and increase the certainty and consistency with which approvals are granted, creating a more competitive business environment in Metro Vancouver.

2.5.1. Work to harmonize vehicle weights and dimensions regulations across the region, allowing adequate flexibility and mobility for operators while managing potential community impacts.

2.5.2. Develop a centralized, regional permit system that integrates with the provincial permit system providing a single point of contact for trucking companies operating within Metro Vancouver to obtain all needed permits, including oversize-overweight (OS-OW) vehicle permits.

2.6. Balance intra-regional goods movement with community livability.

Residents and businesses want access to a variety of goods at the lowest price in their local stores as well as online. This means that not only are HCVs delivering imported goods to local stores, but the rapid growth in online shopping has resulted in significant growth in courier and express deliveries in commercial and residential areas. In terms of local-serving goods movement in Urban Centres and their surrounding neighbourhoods, smaller and lower-energy vehicles can be used for shorter trips and urban deliveries.

2.6.1. So that urban environments are designed to accommodate freight-carrying vehicles of appropriate sizes, which strike a balance between goods movement efficiency and local community needs and preferences, apply appropriate roadway design standards in different urban contexts. Examples of street design guidance, which are explored further in action 3.2.2, are:
- street geometries;
- level of traffic congestion;
- level of pedestrian and bicycle activity; and
- loading and unloading space availability.

2.6.2. Develop urban design guidelines for courier and express deliveries, allowing quick access to buildings' front doors (rather than through the back door loading docks), through such measures as dedicated on-street and off-street loading spaces. This will improve traffic circulation and accommodate growth in courier and express deliveries.

2.7. Support quieter, cleaner, and lower-carbon goods movement.

Climate change is occurring, is caused largely by human activities, and poses significant risks for — and in many cases is already affecting — a broad range of human and natural systems. The BC government has set targets to reduce greenhouse gas (GHG) emissions in the province by 33% by 2020 and by 80% by 2050 from 2007 levels. Metro Vancouver has adopted the same targets regionally. On-road vehicles are responsible for more than a third of the region's greenhouse gas emissions, including 5% from HCVs. Aside from carbon emissions — other air contaminants cause significant health risks, including respiratory and cardiovascular disease leading to impaired lung function, increased hospitalization for asthma, and higher mortality rates. Particulate matter, especially particulate matter less than 10 microns (called PM10), and nitrogen oxides (NOx) are of particular concern for their health impacts. On-road transportation is estimated to contribute approximately one-quarter of these pollutants in the Lower Fraser Valley air shed, with 5% attributed to HCVs.

HCVs account for less than 5% of vehicle kilometres travelled (VKT) in the region, but contribute disproportionately more to the road transportation sector's emissions — about 20% of the sector's total GHG and smog-forming emissions. The good news is that substantial reductions in HCV emissions are already underway, thanks in large part to stringent U.S. and Canadian federal heavy duty engine emission and vehicle fuel efficiency standards (see Figure 4).

Beginning with model year (MY) 2007, medium and heavy duty commercial vehicles are equipped with advanced emission reduction technologies to comply with these stringent emission standards. Coupled with the use of Ultra Low Sulphur Diesel (ULSD), which became mandatory in 2006, particulate traps filter out 98% of harmful PM emissions relative to pre-MY 1991 engines. For model-year 2010, the next phase of emission reduction came into effect resulting in further reduction of hydrocarbon (HC) and nitrogen oxide (NOx) emissions, which are the main cause of ground level ozone, using a combination of selective catalytic reduction (SCR), exhaust gas

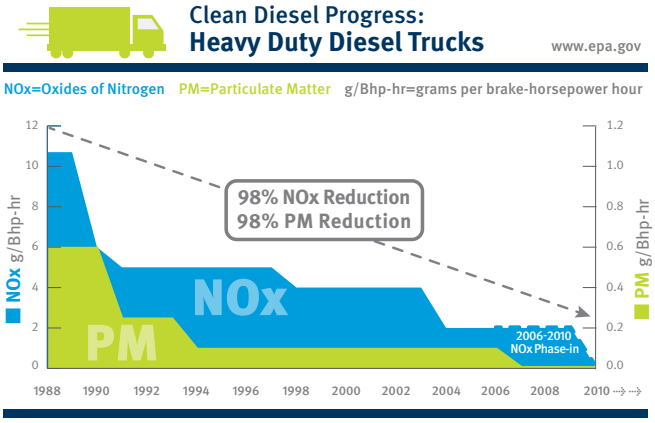


Figure 4: Heavy Duty Diesel Engine Emission Standards by Model Year

recirculation (EGR), diesel oxidation catalyst (DOC), and advanced diesel particulate filter (DPF) technologies.

According to the most recent data available from Statistics Canada, MY 2007 and newer HCVs (GVW ≥ 15 metric tonnes) accounted for 43% of BC's fleet in 2013, with an annual rate of change of 5.3%. Based on this rate of change, they account for approximately 64% of the fleet today, and will account for roughly 80% of the fleet by 2020. However, more can be done to achieve cleaner and lower-carbon goods movement.

Along with air pollution, noise pollution is another key concern for residents with respect to goods movement in their communities. Transportation noise and vibrations can be disruptive, interfere with daily activities, reduce property values, and adversely impact health and overall quality of life. Efforts to reduce noise and vibrations associated with HCVs will be especially important to facilitate off-peak deliveries in a way that minimizes negative impacts on surrounding communities.

2.7.1. Support Provincial efforts to update and align the Low Carbon Fuel Standard and Vehicle Emissions Standards Act with Canadian, American and California Standards for light, medium, and heavy-duty vehicles ensuring that we meet our regional and provincial emissions reductions targets while maintaining competitiveness in the goods movement sector.

2.7.2. Support Provincial efforts to expand emission testing for commercial vehicles through the Provincial Commercial Vehicle Inspection Program (CVIP).

2.7.3. Support Provincial efforts to expand Sustainable Fleet Management Programs (such as E3 and GreenFleets BC) and explore ways to accelerate uptake of low- and zero emission HCVs, vans, and cargo bicycles for last mile freight delivery applications in urban parts of the region. Examples include:

- implementing policies and programs to encourage faster uptake of modern, clean, and fuel efficient HCVs;
- designing urban bikeways and parking areas to accommodate cargo bicycle widths;
- providing support via TravelSmart to cycle logistics companies.

2.7.4. Explore the potential use of different pavement types and treatments for the Regional Truck Route Network that have been shown to reduce tire and pavement noise and have the same safety, durability, and cost characteristics as more conventional pavement materials and treatments commonly used today.

2.7.5. Ensure routine pavement maintenance of the Regional Truck Route Network to minimize uneven surfaces and potholes that create the loudest and most jarring noises from HCVs.

2.7.6. Prioritize whistle-cessation initiatives (including grade separation) at rail crossings that are in close proximity to residential areas.

2.8. Create a policy and regulatory environment that supports innovation.

With shipping and receiving destinations spread across the region, one of the challenges for goods movers is to minimize empty miles, or having to make repeated visits to complete a delivery, all of which add to traffic congestion, increase emissions, and reduce productivity.

For Gateway-oriented goods movement, transporting containers in the region as efficiently as possible is logistically challenging due to the complex relationship between shippers terminal operators, and logistics providers.

Multi-partner coordination, advanced logistics, and new business models enabled by mobile communications technology can better match supply and demand and facilitate more efficient load consolidation. These innovations can help operators schedule another pick-up closer to their last drop-off location to maximize load factors, minimize empty miles, and reduce the overall number of trips.

2.8.1. Ensure the appropriate legislative and regulatory framework is in place to enable the use of new technologies, vehicle configurations, and methods of cargo delivery.

2.8.2. Support municipalities and building managers of multi-tenant commercial buildings to develop delivery and service plans (the goods-movement equivalent of TravelSmart employee travel plans) that consider consolidation and collaborative delivery arrangements to reduce the number of trips required to service the same amount of activity at a commercial building.

2.9. Support the Port of Vancouver in optimizing container drayage.

Almost two-thirds of import containers arriving by sea at the Port of Vancouver are transferred directly to rail. The remaining one-third of these import containers are transferred to truck, most of which are drayed (transported a short distance) to a transload facility in the region where the contents is re-sorted, then distributed locally or transferred onto trains for transportation to destinations outside the region. Empty containers are typically returned by truck to marine container terminals, container storage yards, or to export facilities for stuffing elsewhere in the region. Currently, there are approximately 1,720 drayage trucks registered and licensed with the Port for access to marine container terminals.

Because of the location of the marine container terminals, intermodal terminals and transload facilities, drayage traffic, in conjunction with other commercial traffic, occurs on regional roads contributing to local congestion, noise, vibrations, and emissions adding to wear-and-tear on regional roads and road maintenance costs.

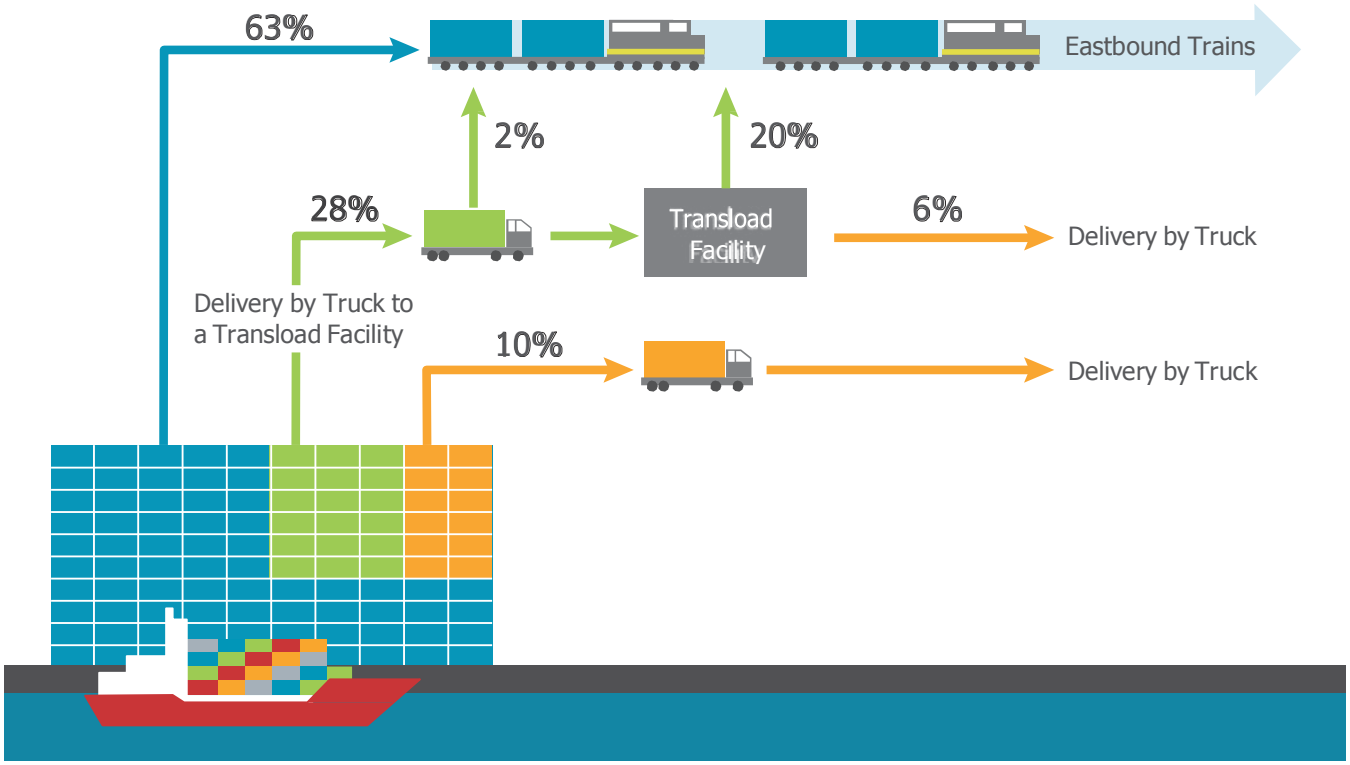


Figure 5: How Import Marine Containers Move in our Region

The actions outlined in this section and other initiatives underway would result in fewer trucks on local roads.

Optimization of drayage operations becomes even more important given the pending marine container terminal expansions that are expected to create an additional capacity of 3.6 million twenty-foot equivalent units (TEUs) per year over the next 20 years. This expansion is forecast to require an additional 5,500 acres of land, mainly to support parking, loading and unloading for the drayage truck fleet.

2.9.1. Direct Gateway-oriented truck trips to Provincial highways whenever possible.

2.9.2. Continue to support Port of Vancouver initiatives to increase efficiencies for terminal and drayage operations including the Port's "Smart Fleet Trucking Strategy" initiative. This initiative aims to use the Port's Truck Licensing System (TLS) and other mechanisms to contribute to improved trucking efficiency to, from, and through Vancouver's marine container terminals.

2.9.3. Work with local governments, industry, and the Agricultural Land Commission (ALC), as appropriate, to understand, forecast, plan for, and mitigate the impacts of the land demands (in particular on agricultural lands) for drayage truck parking and short-term (several hours) and overnight (up to 48 hours) parking for heavy commercial vehicles in general.

2.9.4. Work with the Port of Vancouver to study opportunities to optimize port-related container drayage within the region, using a triple-bottom line approach. Example strategies to evaluate and assess for viability include:

- more effective utilization of the existing multi-modal transportation network on a 24-hour basis;
- expanded short-sea shipping;
- moving more containers by rail directly from marine container terminals to inland transload facilities;
- enhanced co-location of import and export transload facilities.

2.10. Price the transportation system more effectively.

As described in Strategy 1.3, targeted investment in the region's road network is needed to improve safety, local connectivity, and to address key bottlenecks for goods movement. However, in most cases we ultimately can't build our way out of congestion. While new roads temporarily reduce congestion, and shorten travel times, reducing the "cost" of driving in this way typically induces demand.

Very soon, more people are making more trips and travelling farther — leading again to clogged-up roads. To tackle congestion and to make sure

that the significant new road capacity we already have added in this region to support more efficient goods movement is not undermined by increasing growth in private passenger car use, we need to better price use of the road network.

Mobility pricing has emerged in some urban areas as a tool to reduce congestion and to better manage available transportation capacity, while also ensuring transportation system users pay for the externalities they generate, such as delays to other users or infrastructure wear-and-tear. By pricing the transportation system so that users pay less to travel on less busy routes and during less busy times of the day, users whose trips are discretionary and who have the flexibility to change when or where they travel, can free-up capacity for those making non-discretionary trips, such as high-value and time-sensitive trips to pick-up or deliver goods.

To ensure pricing is fair and supports the economic competitiveness of the region, rates should be set so that the additional costs to commercial carriers are offset by the resulting travel time savings and increased productivity. It is also important to note that scheduling of most commercial vehicle trips is in response to customer demand rather than on the inclination of freight carriers. So for goods movers to respond to pricing signals and make use of off-peak road capacity, shippers and receivers also need to accept deliveries and pick-ups during off-peak times.

One of the goals of mobility pricing is to save goods movers in this region time thus helping them improve their productivity and our regional competitiveness.

A comprehensive approach to mobility pricing has long been supported by local governments in Metro Vancouver —having been a central plank of the region's transportation strategy in 1993 (Transport 2021). At that time, the strategy was to introduce more comprehensive mobility pricing only after significantly better alternatives to commuting in single occupancy vehicles were made available. Twenty years later, this region has made significant progress in encouraging walking, cycling, and transit. More investment is still needed to make these options viable for more people, particularly investments in our public transit system. However, the region's Mayors are now firmly committed to staging the introduction of comprehensive mobility pricing in tandem with the next tranche of investments in our transportation system.

2.10.1. Investigate and adopt a mobility pricing strategy that commits to making transport pricing decisions in an integrated fashion considering all modes of travel.

2.10.2. Coordinate with all road authorities in Metro Vancouver, including municipalities, TransLink, the Provincial Government, and the Federal Government to ensure a fair, efficient and coordinated approach to mobility pricing across the region.

2.10.3. Link pricing decisions to investment commitments and introduce changes in mobility pricing in tandem with the introduction of major transportation investments.

2.10.4. Within 5–8 years, explore a region-wide mobility pricing strategy that includes a coordinated pricing policy, and considers distance, time of day, and location to reduce road congestion and improve travel time reliability, especially for high-value, time-sensitive goods movement trips. Pricing for commercial vehicles should recognize that many of the trips are non-discretionary and less price elastic in terms of time of day pricing.

2.10.5. Reduce other driving related fees, such as motor fuel taxes, to offset the increased costs associated with mobility pricing.

2.10.6. Coordinate with private-sector goods movement stakeholders to ensure that pricing schemes meet their mobility needs and enhance the region's economic competitiveness.

2.10.7. Monitor and, where necessary, adjust pricing rates to maintain economic viability and competitiveness of all industry sectors in Metro Vancouver.

3.0 Partner to make it happen

Successfully implementing the Regional Goods Movement Strategy will require high levels of collaboration between partners- community, business, industry, and all levels of government.

Effective and efficient goods movement requires the coordination of many elements of municipal, regional, provincial, national, and transnational planning. In particular, where and how goods move largely depends on the location of pick-up and delivery locations. Land use planning plays an important role in determining where businesses and people locate, which then determines the amount and type of transportation required to service those businesses and people. Ultimately, the best transportation plan is a good land use plan.

Many of the strategies and actions in this section fall under direct municipal responsibility and jurisdiction, with coordinating and supporting roles by others.

3.1. Plan land use needs of business and industry.

Industrial and commercial land uses that have good connectivity to the transportation network and that support the ability to co-locate related uses reduce trip distances, improve load factors, and help manage commercial vehicle volumes on the region's roads. In addition to the system management solutions advanced in action 2.8, the region could achieve substantial reductions in commercial vehicle traffic through more efficient land use and co-location. One of the barriers to this solution, however, is a relative lack of vacant industrial land. Despite it being a high-priority regional land use objective, it remains a challenge for many businesses to find available industrial land that also has good access to suppliers, customers and transportation networks.

3.1.1. Protect the existing supply of accessible industrial land through measures such as:

- taxation rates;
- zoning industrial land for industrial uses;
- directing office and other non-industrial uses to Urban Centres and Frequent Transit Development areas, to reduce industrial land conversion pressures and reduce commuter traffic in industrial areas;
- commitments connected to senior government and regional infrastructure investments; and
- other policies that support industrial activities as specified in Metro 2040.

3.1.2. Identify policies and actions that support the protection of rail rights-of-way and access points to navigable waterways in order to preserve their potential for viable goods movement and industrial uses, as specified in Metro 2040.

3.1.3. Work with Gateway partners to 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.

Figure 6: Regional land use and major goods movement generators. This figure shows the land designations from Metro 2040 along with major trade facilities and terminals and major goods movement activity centres in Metro Vancouver. These businesses and facilities require good road, rail and marine connections to function. While many sites are concentrated at water's edge, other sites are dispersed throughout the region and not connected to the MRN or a Provincial Highway.

3.2. Integrate goods movement considerations into community planning and development.

We need to plan and develop our communities in ways that efficiently accommodate goods movement while minimizing negative community impacts. While total separation between heavy commercial vehicles and residential communities is ultimately not possible in any urban region, and especially in our region where some major Gateway facilities are located next to Urban Centres with no freeway access, it is nevertheless desirable to minimize these interactions for the benefit of residential communities and goods movers alike.

Metro 2040 includes a new land use designation called the Frequent Transit Development area, which is used to identify additional priority locations outside Urban Centres and on the Frequent Transit Network (FTN) in which to focus higher density development. Not all FTN corridors, which are shown in Figure 7, are created equal in terms of development potential. In many cases, they overlap with roads that also carry high volumes of heavy trucks.

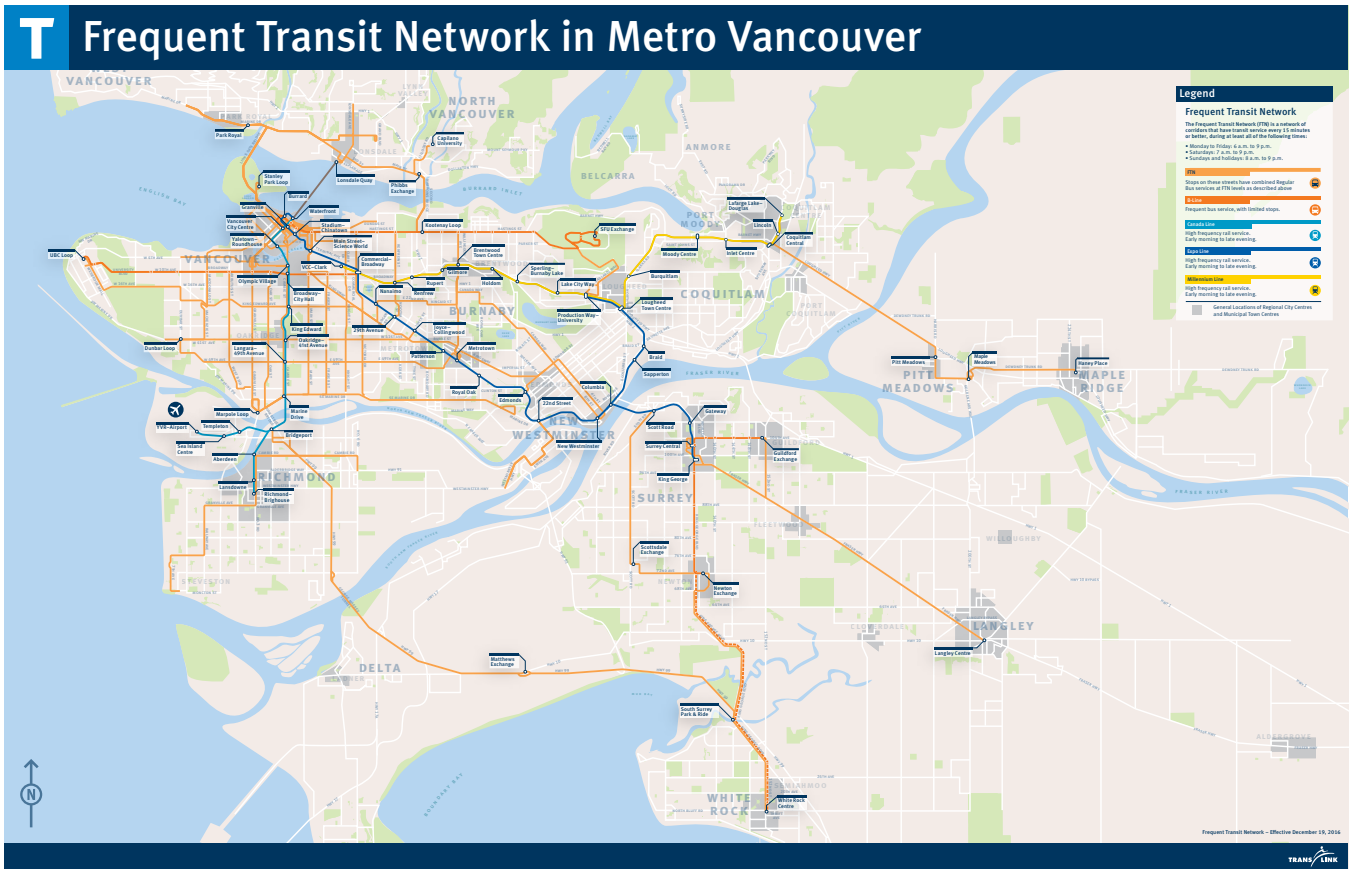


Figure 7: Frequent Transit Network (FTN)

These segments of the FTN are less desirable areas for medium- and higher-density developments. Accordingly, mitigation measures should be encouraged in any new development to reduce both the negative livability impacts on residents as well as the negative impacts on truck route travel time reliability.

Furthermore, new commercial and industrial developments should be located in close proximity and with good connections to existing high capacity goods movement corridors. New residential development, particularly high density development, is not well suited to be immediately adjacent to these corridors. Where this development does occur, additional noise and traffic access mitigation measures should be required (per the language in the current draft).

3.2.1. Work to minimize unnecessary conflict between a development's users and other road users by fully considering the development's impacts and needs, including:

- goods movement;
- loading/unloading; and
- servicing.

3.2.2. Prepare Freight-Supportive Community Design Guidelines (as a reference for municipalities), that include guidance on particularly challenging issues. Examples include:

- complete streets designs that provide safe and efficient networks for all users including goods movement;
- integrating loading/unloading spaces and site access with bicycle lanes, especially traffic-protected bicycle lanes;
- appropriate goods movement "design vehicles" to use as the template for determining road geometries in different urban contexts — recognizing that maximizing vehicle sizes for increased flexibility needs to be balanced against space efficiency and community livability objectives.

3.2.3. Where a municipality approves new medium or higher density development along higher-volume goods movement corridors, encourage the developer to incorporate noise, vibration, and traffic mitigation measures. Example measures include:

- using floorplans and building configurations to minimize noise intrusion, especially to the most noise-sensitive spaces (e.g. bedrooms);
- incorporating noise and vibration absorption and control features into windows, walls, doors, and roofs;
- using sound baffles or screens to cover building openings;
- minimizing driveways and vehicle access to the development from roads with higher volumes of trucks.

3.3. Ensure effective coordination through strong partnerships.

While we have made large strides in the past decade to better coordinate partners in the Asia-Pacific Gateway, regional goods movement interests have not historically been well represented or coordinated in Metro Vancouver. To successfully implement this Regional Goods Movement Strategy, we need higher levels of collaboration between all partners.

3.3.1. Better coordinate efforts among all levels of government by bringing goods movement-focused items to the Regional Transportation Advisory Committee (RTAC) for regular discussion, guidance, and collaboration.

3.3.2. Better coordinate between public and private sector organization in the regional goods movement sector by developing mechanisms to foster routine collaboration and engagement on key issues and initiatives. This mechanism could take the form of an Urban Freight Council, whose mandate would include:

- to assist and "champion" the implementation of the strategic directions and actions identified in this Strategy;
- to coordinate goods movement planning and initiatives across the member organizations;
- to discuss and agree on appropriate action by each member organization; and
- to exchange and advance knowledge and understanding of goods movement issues in the region amongst both public agency staff and private sector partners.

3.3.3. Raise awareness of the value and contribution of goods movement to the economy through coordinated partner outreach and public information campaigns.

3.3.4. Develop a Regional Prosperity Strategy and integrate it with other regional plans to provide a common framework for making goods movement investment, management, and land use decisions.

3.3.5. Encourage education, training, and professional development in advanced logistics to ensure a sufficient pool of skilled labour within the region to efficiently manage goods movement.

3.4. Collect and share data to monitor progress and support decision-making.

The complexity of goods movement requires good data to inform decision-making at both the operational and planning levels. Currently there is a lack of data and of coordination among existing datasets across multiple agencies and partners.

3.4.1 Create and maintain a central repository of goods movement data that includes data-sharing protocols between all partners.

3.4.2. Collaborate on applied research initiatives that support the priority actions identified by stakeholders for early implementation.

3.4.3. Develop a performance-monitoring regime and pursue a data-driven and outcome-based approach to assess and evaluate goods movement programs and project performance.

IMPLEMENTATION

Achieving the two overarching goals will require a collaborative approach and sustained effort on the part of various stakeholders with overlapping, yet distinct core areas of business, jurisdiction, and responsibility in the region. Successful implementation of the actions to get us there will take time and resources – partnering will be key to our success, as will setting early priorities with clearly defined roles.

The short-list of priority actions on the next page reflects stakeholder input gathered throughout the development of the Strategy. Given the complexity of goods movement, and areas of overlapping jurisdiction among partner organizations, it also became apparent that articulating lead and supporting roles, as well as opportunities for consultation, while respecting the core mandate of each partner (summarized in Appendix 2), will be critical to ensure the effective implementation of the actions, including those flagged as early implementation priorities.

New issues will emerge, priorities may need to be adjusted, and partner organizations' roles may have to be reshuffled. Other actions identified in the Strategy, but not included on the list of priorities, will be added as actions are implemented and come off the short-list. Indeed, new actions will inevitably need to be identified and prioritized in response to emerging issues, and may augment or perhaps even replace some of the short-listed actions.

It will be an ongoing, iterative process – beginning with the establishment of the Greater Vancouver Urban Freight Council (GVUFC). Having considered the implementation priorities, moving forward, the GVUFC will be tasked with championing their implementation, monitoring and assessing progress, and periodically reviewing and comparing the priorities against the region's evolving goods movement needs.

Implementation Priorities

Lead Roles, Partnerships, and Consultation

Implementation Priority	RGSM Action Section | Page	Lead Role:	In Partnership or Consultation with:
1 **Price the transportation system more effectively to reduce congestion and improve travel time reliability (mobility pricing).**	S. 2.10 | P. 28	• TransLink	• Government of BC • Local Governments • Metro Vancouver • ICBC • Industry Associations
2 **Develop a Regional Road Network Strategy (RNS).**			
a Establish performance guidelines for the region's road network, collect and share goods movement data, define RGMS targets, and develop a performance-monitoring regime to support effective decision-making.	S. 1.2.6 | P. 16 S. 3.4 | P. 36	• TransLink • Local Governments	• Government of BC • ICBC • Federal Government • Metro Vancouver • YVR • Port of Vancouver • Industry Associations
b Update the composition of the MRN to ensure that the network is best serving the goods movement needs of the region and make strategic investments in the updated MRN, including the replacement of the Pattullo Bridge (1.2.4) and identifying a long-term solution to connect Highway 1 and Highway 1A north of the Fraser River (1.2.5).	S. 1.2.7 | P. 16	• TransLink • Local Governments	• Government of BC • Port of Vancouver • YVR • Industry Associations
c Clearly designate, manage, and regularly update the Regional Truck Route Network (RTRN), with a focus on increasing the consistency by which truck routes are designated across the region (2.3.1), developing a clear, transparent and systematic process to approve changes or amendments to the RTRN (2.3.2), and publishing and widely communicating the RTRN (2.3.4).	S. 2.3 | P. 20	• TransLink • Local Governments	• Government of BC • Metro Vancouver • Port of Vancouver • YVR • Industry Associations
3 **Harmonize regulations and streamline processes to improve freight efficiency.**			
a Harmonize vehicle weights and dimensions regulations across the region	S. 2.5.1 | P. 23	• TransLink • Local Governments • Government of BC	• Port of Vancouver • Federal Government • Industry Associations
b Develop a centralized regional permit system that integrates with the provincial permit system providing a single point of contact to obtain all needed permits, including oversize-overweight (OS-OW) vehicle permits	S. 2.5.2 | P. 23	• TransLink • Local Governments • Government of BC	• Port of Vancouver • Federal Government • Industry Associations

Implementation Priorities

Lead Roles, Partnerships, and Consultation continued

Implementation Priority	RGSM Action Section | Page	Lead Role:	In Partnership or Consultation with:
4 Improve regional road network operations and management.			
a Make the transportation system easy to understand and navigate for commercial vehicle drivers by developing a consistent set of truck route definitions, restrictions, and signage (2.2.1) and providing integrated information materials online and in hard copy on topics such as parking, loading and unloading regulations, operating restrictions, off-peak deliveries, size and weight regulations, and route clearances (2.2.2).	S. 2.2 | P. 20	• TransLink • Local Governments • Government of BC	• Federal Government • Metro Vancouver • ICBC • YVR • Port of Vancouver • Industry Associations
b Use basic system management measures such as responding to road incidents in a timely and coordinated manner and scheduling road construction work at appropriate times of the day to reduce congestion and improve travel time reliability.	S. 2.4.1 | P. 22	• Government of BC • Local Governments • TransLink	• ICBC • Metro Vancouver • Port of Vancouver • Federal Government
c Improve the effectiveness and efficiency of loading zone operations by designating sufficient loading zones and increasing enforcement and fines for illegal parking in designated loading zones.	S. 2.4.2 | P. 22	• Local Governments	• TransLink • Government of BC • Metro Vancouver
5 Protect the existing supply of accessible industrial land.	S. 3.1.1 | P. 32	• Metro Vancouver • Local Governments	• TransLink • Government of BC • Federal Government • YVR • Port of Vancouver • Industry Associations
6 Raise awareness of the value and contribution of goods movement to the economy through coordinated partner outreach and public information campaigns.	S. 3.3.3 | P. 36	• Greater Vancouver Urban Freight Council (GVUFC) • Greater Vancouver Gateway Council (GVGC	• TransLink • Local Governments • Government of BC • Federal Government • Port of Vancouver • YVR • Industry Associations • Metro Vancouver • ICBC

Monitoring

Performance-based decisions require good data. A monitoring and evaluation program will be used to assess progress towards goals and guide the implementation process.

Performance measures are used by both the public and private entities to monitor and evaluate the condition and efficacy of programs, products, services and infrastructure. In particular, freight performance measures (FPMs) focus on various components of the freight distribution system. Private sector freight entities (carriers, shippers etc) typically use standardized measures for monitoring and evaluation. However, due to the competitive and proprietary nature of business, most of the input and output data collected and used by the private sector to populate the measures are deemed confidential.

The public sector's role in developing, monitoring and evaluating transportation system performance is long-standing. However, public sector use of freight performance measures is a relatively new and emerging function. Most freight performance measures used by the public sector still include components of transportation and mobility – primarily because the public sector has quick access to vehicle and roadway monitoring data, and is most familiar with manipulating and analyzing such data. That said, more and more transportation planning and management agencies have begun expanding their FPM work into innovative measures that often require data support from industry.

The need to collect data to support developing performance measures is identified in RGMS 3.4, including creating and maintaining a central repository of goods movement data that includes data-sharing protocols between partners. These data would form the foundation of the FPMs. As FPMs are established and monitored, the RGMS could subsequently be updated at regular intervals based on the needs identified through performance monitoring.

Common FPM categories and examples of measures in each category are presented below. This is not intended to be an exhaustive list of possible FPMs, but rather a starting point for partner and stakeholder discussions about developing a performance-monitoring regime.

Carrier and Supply Chain FPMs

- On-time delivery measures (usually a percentage of total trips). Common shipper expectations are 95% to 98% on-time delivery performance by carriers.
- Cost-of-delay indices (time or production delay-based). These usually reflect an aggregate index of travel time delays to major shippers or manufacturing centres. Some agreed-upon baseline of minimal travel costs per route is developed, and deviations from these baselines form the "cost-of-delay".

- Cost of goods movement measures provide an economic development measure for both public and private sector entities, and can be useful for zoning and site selection. The most common measure for cost-of-goods movement is a comparative aggregate transportation cost by corridor or a cost-of-delay deviation from an average travel time (as a baseline).
- Modal access measures monitor modal accessibility to certain geographic locations and facilities. The assumption is that improved or expanded modal access can improve the attractiveness of business expansion and support certain public sector objectives such as reduced air emissions.

Public Sector FPMs

- "Average Travel Time" is a measure that determines the average travel time needed for a truck to transect a segment or corridor.
- "Average Travel Speed" is a slightly different measure and is often used for more granular or local assessments. For example, localized changes in travel speeds can be used to pinpoint specific truck bottlenecks. It should be noted that auto travel speeds are not a good surrogate for the unique operational requirements of large trucks.
- "Travel Time Reliability" is a suite of measures that calculate and monitor some condition of travel confidence, whereby segment or system users can generally assume the likelihood that certain travel times and/or speeds are stable and reproducible.
- "Travel Time Delays" (duration) relate to the deviation from ideal travel times and speeds, and provide multiple benefits to government agencies. In particular, delay time measures offer a measurement tool for testing new and innovative planning and construction programs (e.g. night-time work zones, turn-key projects, signal timing, etc.). Since travel time delays impact all system users, but are particularly expensive for commercial vehicles, this measure is typically high on FPM priority lists.

Safety, Community, and Environmental Sustainability FPMs

- In the context of the RGMS, examples could include measures of noise, vibration, and fuel efficiency, including the fuel efficiency of certain routes, and more common modal efficiency measures such as ton-kilometres per litre of fuel consumed to track and reduce GHG and criteria air contaminant emissions attributable to goods movement in the region.
- In developing these FPMs, it is important to keep in mind that they can become very subjective depending on each stakeholder's perspective and expectations.

While freight performance measures are as diverse as the stakeholders involved in transportation, these FPMs would likely have the greatest utility and impact in the region. The design and implementation of such FPMs requires the synthesis of existing and emerging data sources, but the FPM outputs from such an endeavour would help ensure that limited transportation funds are strategically and judiciously utilized.

Appendix 1: Scope and Relationship to Other Plans

Goods Movement planning in the Metro Vancouver must balance the roles of Metro Vancouver as both a large metropolitan region and a major multi-modal international port.

As Canada's third-largest urban area, the region is home to 2.3 million people and supports 1.3 million jobs across a diverse economy that must supply products to households and businesses alike. Metro Vancouver also has a critical provincial and national role as Canada's asia-Pacific Gateway and as an important border crossing to the United States. Our network of roads, marine ports, rail terminals, and airports connects British Columbia and Canada to the United States, asia and the world. This role as a trade portal is critical to the viability of our national and provincial economies.

The two roles are related:

- the Gateway is one of the largest economic sectors in the region, directly providing 82,000 jobs (6% of the workforce) and indirectly providing tens of thousands more jobs.
- and the success of the urban region — especially with respect to business costs, labour availability and travel-time reliability — is important to the success and competitiveness of the Gateway.

Given its broader national importance, the development of this region as one of North America's primary trade gateways is led by the federal and provincial governments, Port of Vancouver, the Vancouver Airport Authority, and other Gateway industry stakeholders.

TransLink and local governments in Metro Vancouver will continue to coordinate closely with Gateway partners to support them in achieving their objectives in a way that also meets the region's economic, social, and environmental objectives.

In light of these multiple roles, the scope of this Regional Goods Movement Strategy is three-fold:

1. articulate and advance priorities to improve regional-serving goods movement;
2. coordinate with provincial and national priorities to improve Gateway-oriented goods movement; and
3. all while protecting the environment and the health, safety and livability of our communities.

It is worth noting that, in practice, regional and Gateway- oriented goods movement cannot be so easily disentangled. For example, Gateway-oriented activity on our region's roads may often have some regional component, such as intermediate processing or repackaging.

The forward-thinking decision long ago to avoid building a dense network of urban expressways has generated many positive social, economic, and environmental benefits, including a more sustainable, compact and prosperous region and more livable communities. However, with major Gateway facilities located close to Urban Centres, a fast-growing local population, and space-intensive transload facilities located further inland away from the Urban Centres, our relative lack of urban freeways means that both regional and Gateway goods movement must rely on regional roads.

Relationship to Other Plans

No single body has the ultimate authority or responsibility for goods movement in Metro Vancouver. Rather, some aspect of goods movement is addressed in different municipal, regional, Provincial, Federal, and private sector plans.

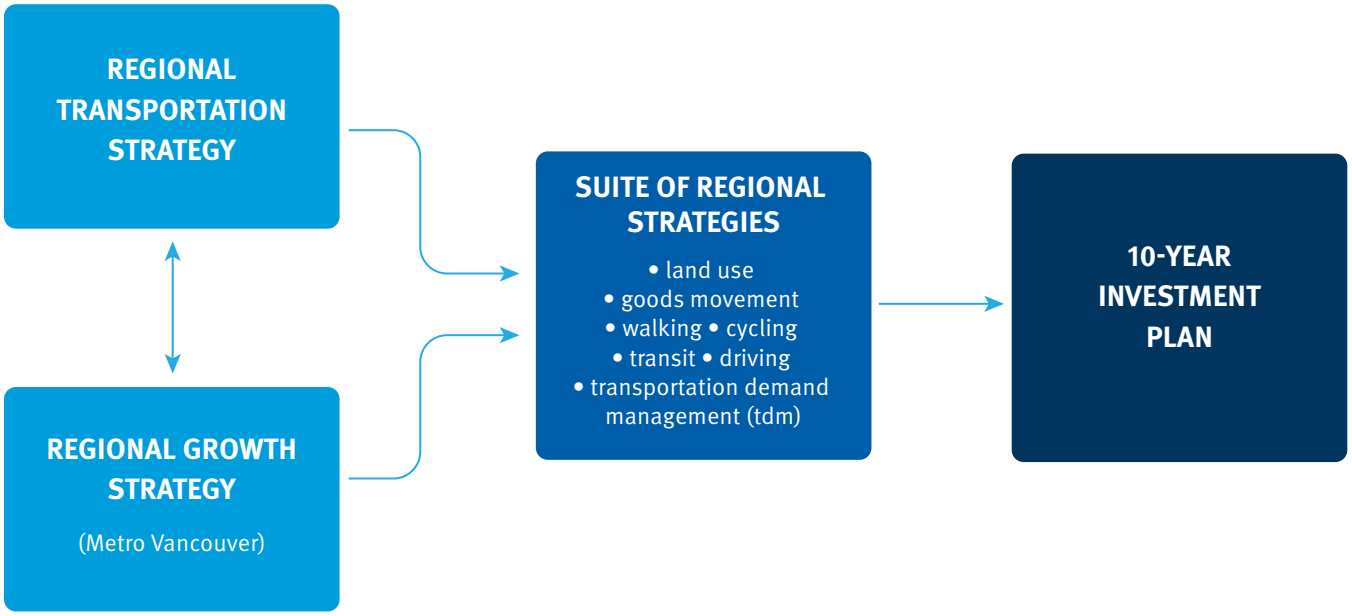


Figure 8: TransLink Planning Framework

Due to the overlapping authorities and responsibilities, this Strategy is not prescriptive, but instead aims to provide a unified regional framework from which all partners, including TransLink, can draw relevant strategies and actions for incorporation into their own plans and programs. As a starting point, the Regional Goods Movement Strategy was undertaken in the context of the following existing plans and strategies.

The Regional Transportation Strategy

The Regional Transportation Strategy (RTS) sets out long- term (30-year) goals, targets and directions for the regional transportation system and describes the key strategies and actions needed to achieve those goals. TransLink is required to update the RTS every five years. The current version consists of two components: a Strategic Framework (2013) and an *Implementation Blueprint* in the form of the *Mayors' Transportation & Transit Plan(2014)*. Both parts were adopted and endorsed by the TransLink Board and the Mayors' Council on Regional Transportation.

As Figure 8 shows, this Regional Goods Movement Strategy is one of several modal or thematic strategies

Vision

As a region, we maintain our global position as one of the best places in the world to live because we meet our transportation needs in a way that simultaneously enhances the health of our people and communities, economy, and environment.

Goals

Make transportation decisions that:

CHOICE

Provide sustainable transportation choices

Support a compact urban area

ECONOMY

Enable a sustainable economy

PEOPLE

Foster safe, healthy and complete communities

ENVIRONMENT

Protect the environment

Headline Targets

As a region, we can best achieve these goals by designing our communities and transportation in a way that:

- makes it possible to reduce the distances people drive by one-third.
- makes it possible to make half of all trips by walking, cycling and transit.

Strategy Areas

There are three key transportation levers the region can use to achieve our overarching goal of getting people and goods where they need to go as reliably, safely, efficiently and cleanly as possible. We can:

INVEST strategically to maintain and expand the transportation system.

MANAGE the transportation system to be more efficient and user focused.

PARTNER to make it happen.

Figure 9: Regional Transportation Strategy — Framework

nested below the RTS, and is intended to provide more focused strategies and actions on a particular subject. While the RTS provides high-level policy direction on goods movement, the RGMS fleshes out that direction with additional detail, and considers priorities, roles, and responsibilities.

The building blocks of the RTS are outlined in Figure 9. The RGMS builds from this framework, bringing a goods movement lens to the Vision, Goals, Targets, and Strategies.

The RTS targets articulated in Figure 8 are aimed at personal travel. With continued growth in international trade and in local commerce, goods movement in Metro Vancouver is forecast to increase significantly over the next 30 years. Whereas most people have multiple travel options, shippers and freight carriers are more limited in their choice of mode. The target to reduce personal driving (VKT) by one-third will help to ease congestion on the road network, enabling all road users — including high-value, time-sensitive freight trips — to move more efficiently throughout the region.

Several strategies and actions in the RTS directly inform the RGMS:

- Maintain needed infrastructure in a state of good repair. From the perspective of goods movement operators, a well-maintained road enhances safety and allows them to hold the line on vehicle operating and maintenance costs.
- Invest in the road network to improve safety, local access and goods movement. This speaks to connectivity and the directness of connections, as well as the need to ensure that Complete Streets schemes provide for the circulation of goods vehicles, appropriate loading spaces and site access, all in the context of providing a safe environment for all users.
- Expand walking, cycling and transit systems. These actions provide people with alternatives to driving, so as to ease congestion for all road users, including goods movement. These options also ensure that workers can get to jobs where goods-generating industries are located.
- Manage our transportation system more effectively. These actions include safety improvements, advanced technology and infrastructure management solutions, efficient and fair mobility pricing to manage congestion on the region's road network, and better parking management — all of which support more efficient and reliable goods movement.
- Partner to make it happen. These actions include processes to improve the coordination of transportation and land use as well as data collection and analysis — both critical areas for goods movement.

EXCERPT FROM THE REGIONAL TRANSPORTATION STRATEGY (2013)

Given the critical nature of goods movement to the local economy and to Metro Vancouver's function as Canada's Pacific Gateway, it is paramount to protect industrial land, support safety improvements for rail and trucks, help to streamline regulations, support pricing to reduce congestion on the road network and make room for high-value commercial trips, and work together to ensure that goods can move in a timely and reliable way, around and through Metro Vancouver.

Building off of this strategic direction, the Mayors' Transportation and Transit Plan called for a number of specific investments including:

- a new tolled four-lane Pattullo Bridge with modern lane- widths, geometries and seismic standards;
- Increased funding to maintain and upgrade the Major Road network (MRN);
- a strengthened commitment to manage congestion on the region's road network by introducing comprehensive mobility pricing within 5–8 years;
- new rapid transit lines in Surrey and the Broadway corridor in Vancouver, substantial investment in more bus service, walking and cycling, and enhanced TDM programs all of which will shift personal vehicle traffic off of the region's roads and reduce congestion — especially on some of the region's key truck corridors.

10-Year Vision – Phase One Plan

To meet the challenges of growth and congestion in a way that is affordable and fair, in 2014 the Mayors' Council on Regional Transportation developed the 10-Year Vision for Metro Vancouver Transit and Transportation ("10-Year Vision"). The 10-Year Vision draws on years of technical planning to identify the new transportation services the region will need over the coming decade. It outlines actions and policies to advance the goals identified in TransLink's long-term Regional Transportation Strategy (RTS) and to support the goals identified in Metro Vancouver's Regional Growth Strategy (RGS). The 10-Year Vision serves as the blueprint to guide the preparation of TransLink investment plans.

The 2017-2026 investment plan (the Phase One Plan), begins implementation of the 10-Year Vision. The Plan includes expanded operating and capital investment to increase transit services and to improve roads, cycling, and walking infrastructure across the entire region. In addition to committing funding for cost-effective investments to reduce roadway congestion by shifting personal driving trips to walking, cycling, and transit (RGMS 1.3), the Phase One Plan also includes investments to maintain our existing roads and bridges in a state of good repair (RGMS 1.1) and to expand and improve the MRN (RGMS 1.2), including the following key actions:

- Fund operations, maintenance, and rehabilitation (OMR) of the MRN. This includes a one-time expansion to the length of the MRN by 10%, and annual 1% increases to keep pace with network changes. Funding will be distributed to municipalities based on the number of lane-kilometres of MRN in their jurisdiction. New roads will be selected for MRN designation through a performance-based process.
- Provide $50 million in new regional funding from 2017 through 2019 for MRN infrastructure upgrades, such as projects that improve the safety, local and regional connectivity, and efficiency of the MRN. Projects will be selected through a performance-based process and cost-shared with municipalities at up to 50%.
- Provide $32.5 million in new regional funding from 2017 through 2019 for rehabilitation and seismic retrofit of MRN structures, such as bridges, retaining walls, and culverts. Projects will be selected through a performance-based process.

Metro 2040: Shaping our Future

Metro 2040: Shaping Our Future, is the current Regional Growth Strategy (RGS) for Metro Vancouver, approved by all 23 local governments in the region

and TransLink in 2011. It emphasizes the importance of coordinating land use and transportation, recognizing that the location of jobs, housing, facilities, and industrial land fundamentally determines where and how much people, goods and services need to travel.

The RGMS supports and is consistent with the five goals of Metro 2040.

- Create a compact urban area;
- Support a sustainable economy;
- Protect the environment and respond to climate change impacts;
- Develop complete communities; and
- Support sustainable transportation choices.

Note that Metro 2040 explicitly protects the supply and the appropriate use of industrial land. This action is intended to support key goods-generating activity centres by allowing them to predictably grow their businesses within the region in a way that can minimize transportation costs, by locating industrial areas close to rail, major roads and highways, or intermodal terminals — all while avoiding intrusion through residential areas wherever possible.

Pacific Gateway Plans

Through various plans, including the Asia Pacific Gateway Study and the Pacific Gateway Transportation Strategy 2012– 2020, the Province of BC and the Government of Canada set out a vision of BC being north america's gateway of choice for asia Pacific trade. The goals identified in this plan are to:

- Build on BC's existing world-class transportation network;
- Ensure an attractive climate for investment; and
- Enhance collaboration with partners and stakeholders. The RGMS is consistent with these goals.

B.C. on the Move: A Ten-Year Transportation Plan

The recently adopted 10-Year Provincial Transportation Plan (2014) includes 12 priorities:

1. Rehabilitating Highways, Bridges and Side Roads
2. Improving Highway Safety
3. Improving Highway Capacity and Reliability
4. Delivering a Provincial Trucking Strategy
5. Investing in Transit
6. Investing in Cycling
7. Investing in airports
8. Enabling Efficient Ports and Rail
9. Sustaining and Renewing Ferries
10. Building Partnerships with First nations
11. Improving accessibility
12. Protecting the Environment

Three Provincial priorities have particular relevance for goods movement in Metro Vancouver:

Priority #3: Improving Highway Capacity and Reliability — with a commitment to expand the capacity of the transportation network to improve safety, attract new investment and support economic growth.

Priority #4: Delivering a Provincial Trucking Strategy — including a commitment to upgrade and replace structures such as bridges and overpasses, so they can accommodate the increasingly heavy and large loads that industry needs to transport.

Priority #8: Enabling Efficient Ports and Rail — including a commitment to invest in infrastructure that enhances access to ports and increases port bulk, breakbulk, and container capacity and the efficiency of goods movement by rail.

Goods Movement in Municipal Plans

Most municipalities have Official Community Plans which include policy statements and/or regulations regarding the movement of trucks and goods in their communities.

Municipalities are responsible for local streets and roads investments, as well as vehicle permitting and regulations. Municipalities also share responsibility for the Major Road Network (MRN) with TransLink.

Appendix 2: Regional Goods Movement Stakeholders

Many different agencies and organizations play a key role in goods movement in the Region. Each actor has a different role, different responsibilities, and different authority over the rules, guidelines, and decision-making that influence goods movement

Organization		Purpose/Mandate	Roles & Responsibilities related to Goods Movement
LOCAL	Local Governments in Metro Vancouver (21 municipalities, 1 Treaty First Nation, 1 Electoral Area)	• Represent the interests and respond to the different needs and changing circumstances of their communities, residents and businesses	• Building and maintaining streets, sidewalks and public spaces • Transportation planning, traffic signals, and operations • Regulate traffic, use of streets (including on-street parking), and the size and weight of vehicles that are permitted to travel on municipal streets • Establish truck routes, truck definitions and administer truck permitting. Set by-laws to regulate hours of operation and delivery provisions, including noise by-laws and time of day travel restrictions on some routes or in specific areas/zones.
REGIONAL	TransLink: South Coast British Columbia Transportation Authority (SCBCTA)	• Transportation authority for Metro Vancouver region • Mandate to provide a regional transportation system that: » Moves people and goods; and » Supports the regional growth strategy and regional and provincial environmental and economic objectives	• Operates integrated regional transit system • Owns and operates 5 bridges • Together with municipalities, co-funds and co-manages the Major Road network (MRN), TDM programs, and regional cycling • Leads and facilitates regional goods movement research and planning
	Metro Vancouver: Greater Vancouver Regional District (GVRD)	• Delivers regional services, policy and political leadership on behalf of 23 local authorities	• Supports coordinated land use planning around common framework for regional growth management • Communicating value of improved regional transportation network, including efficient goods movement
PROVINCIAL	Government of British Columbia	• Authority over Provincial Highways, roads and other infrastructure • Authority to create local governments and their governing legislation	• Provincial transportation planning and policy • Administers a number of acts related to transportation including the Motor Vehicle Act and the Commercial Transport Act • Highway construction and maintenance • Commercial vehicle safety and enforcement • Port and airport development • Infrastructure grants • Major capital project management • Provincial emergency management

Regional Goods Movements Stakeholders

	Organization	Purpose/Mandate	Roles & Responsibilities related to Goods Movement
PROVINCIAL	Insurance Corporation of British Columbia (ICBC)	• Provides universal auto insurance, licensing and registration to British Columbia motorists	• Provides motor vehicle insurance, including coverage for commercial motor vehicles. • Promotes road safety through work with communities and stakeholder groups
FEDERAL	Government of Canada	• Promotes safe, secure, efficient and environmentally-responsible transportation in Canada	• Administers a number of Acts related to transportation, including requirements on new equipment pursuant to the Canada Motor Vehicle Safety Standards (CMVSS), engine emission standards, and rail safety standards. • Provides funding to help improve highway infrastructure systems including Asia Pacific Gateway initiatives • Works with its portfolio partners, other government departments and jurisdictions and industry to ensure that all parts of Canada's transportation system work well • 18 Port authorities fall under the federal portfolio across Canada
	Port of Vancouver	• Responsible for the stewardship of federal port lands in and around Vancouver	• Oversee transportation operations in collaboration with terminal operators, railroads and shippers to ensure efficient goods movement on port lands and waters
	Vancouver Airport Authority	• Oversees Vancouver International Airport's operations	• Develops and maintains airport infrastructure and oversees day-to-day operations at Vancouver International Airport • Plays active role in the development and growth of air cargo and the asia Pacific Gateway
NON-PROFIT INDUSTRY AND BUSINESS ASSOCIATIONS	Greater Vancouver Gateway Council	• Collaborate to establish a globally competitive Pacific Gateway in trade and travel between North America and the Asia Pacific economies	• Advocate for members' interests • Conduct and publish research studies • Provide Economic Impact Data
	BC Trucking Association (BCTA)	• Province-wide, non-partisan, non-profit motor carrier association formed to advance the interests of British Columbia motor carriers	• Promotes a prosperous, safe, efficient and responsible commercial road transportation industry • Conducts research • Advocates for member interests
	Boards of Trade and Chambers of Commerce	• Non-partisan, non-profit business associations formed to advance the interest of their members	• Conduct research • Advocate for member interests
	BC Marine Terminal Operators Association	• Advance members interests on handling of Canadian import and export cargoes	• Advocate for members' interests • Provide economic data • Collaborate to ensure sufficient capacity exists to handle current and projected cargo volumes

Regional Goods Movements Stakeholders

Organization		Purpose/Mandate	Roles & Responsibilities related to Goods Movement
PRIVATE SECTOR	Railways	• Deliver returns on investments by providing fast and reliable transportation for rail and intermodal customers	• Provide rail and intermodal service to customers consistent with federal Rail Transportation Acts • Coordinate with local governments on adjacent land use and road networks
	Shippers	• Deliver returns on investments by providing fast and reliable transportation for marine delivery customers	• Provide marine services to customers consistent with federal Marine Transportation Acts
	Goods Movers	• Deliver returns on investments by providing fast and reliable transportation for their customers.	• Provide road delivery services to customers consistent with federal, provincial and municipal regulations
	Business	• Deliver a return-on-investments for shareholders	• Consume and produce goods and services • Rely on the efficient movement of people and goods to ensure economic success and prosperity • Make locational, transportation and scheduling decisions to advance business objectives
	Residents	• Seek access to the goods, services and jobs needed to live a high quality life.	• Consumers of goods and services • Impacted by the effect of goods movement on the region's health, economy, and environment

GLOSSARY

Advanced Driver Assistance Systems (ADAS) are systems developed to automate, adapt, and enhance vehicle systems for safety and better driving. Examples include adaptive cruise control, truck platooning technology, blind spot monitoring, and collision warning and avoidance systems.

Breakbulk Cargo is cargo of non-uniform sizes, often transported on pallets, or in sacks, drums or bags. These cargos required labour-intensive loading and unloading processes. Examples include coffee beans, logs and pulp.

Bulk Cargo is cargo that is unbound as loaded. Individual components cannot be counted and cargo is loaded (moved) in a loose, unpackaged form. Examples include the trains that move coal, grain and petroleum products to ocean ports.

Class I Railway are rail companies that offer trans-continental services, with a gross revenue of at least $250 million in two consecutive calendar years.

Class II Railway are smaller rail companies that generally operate over shorter distances than Class 1 railways, with gross revenues of less than $250 million in two consecutive calendar years.

Class III Railway, also called short-line railways,typically provide local or switching services for transferring rail cars between railways or operate solely within a terminal facility or group of facilities.

Complete Streets are designed for all ages, abilities, and modes of travel. On Complete Streets, safe and comfortable access for pedestrians, bicycles, transit users and the mobility- impaired is not an afterthought, but an integral planning feature. (Complete Streets for Canada)

Containerized Cargo is moved in containers (“boxes”) that are used primarily for ocean freight shipment, and which can be loaded easily and directly onto truck trailers or rail flatcars. Once a container is loaded initially at its origin, its contents are not re-handled until it is unloaded at its final destination or at a transload facility. Commonly, these contents are items that are packaged individually and can be counted. Examples include finished products such as automobiles, clothing and appliances.

Drayage is the transportation of rail or ocean freight by truck to an intermediate or final destination; typically a short distance (e.g., from marine port to warehouse).

Goods are products, materials, or services. ‘Goods’ thus include physical products that we use or consume (e.g., food, gasoline, furniture, or clothing), 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 (for example, plumbing, carpet cleaning or computer repairs).

Goods Mover or Carrier is a business whose primary activity is the transportation of goods. A for-hire carrier is charged with moving goods from a shipper to a receiver in exchange for compensation . A private carrier transports only its own goods – transportation is not the primary area of activity, it is incidental to some other core area of business. An example of a private carrier is a window manufacturer that has its own fleet of trucks to transport its product (i.e., windows) from its plant to retail outlets.

Heavy Commercial Vehicles (HCVs) are "heavy trucks" or "trucks", including straight trucks (single unit) that have 3 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 (HCVs) and is used interchangeably with the term HCV throughout this document.

Infrastructure Provider owns, operates and/or maintains the roads, rails, ports, terminals or other infrastructure used by the operator to move the goods.

Intermodal Terminal is a location where links between different transportation modes and networks connect, and where goods can be exchanged between modes.

Light trucks are trucks with two axles, and a gross vehicle weight less than 15 metric tonnes.

Mobility Pricing refers to the decisions that our region needs to make on how to balance taxes and user fees when paying for different parts of the transportation system. One such type of user fee is road pricing: a tool used to manage demand and increase the efficiency and fairness of our transportation network, while raising funds for transportation infrastructure.

Prosperity Strategy considers economic, financial, health, social, and cultural factors in determining strategic directions such as supporting and enhancing quality of life through affordable housing strategies and encouraging business investment and re-investment in local communities.

Receiver provides a destination for goods. May also ship goods onward after processing them or adding value.

Shipper is the person or company that originates the shipment of goods.

Short-sea shipping encompasses the movement of cargo and passengers mainly by sea along a coast, without crossing an ocean

Transload is the transfer of goods from the vehicle/ container of one mode to another, en route between a shipper and a receiver