

INTEGRATED NORTH SHORE TRANSPORTATION PLANNING PROJECT (INSTPP)

Findings and Recommendations of the Staff Working Group
(SWG) to Improve Access and Mobility for the North Shore



Prepared by: the INSTPP Staff Working Group

AUGUST 2018

August 15, 2018

LETTER FROM THE CHAIR

The Steering Committee is pleased to receive this Final Report of the Integrated North Shore Transportation Planning Project (INSTPP) from the Staff Working Group, outlining their findings and recommendations for improving mobility and access for the North Shore.

This report summarizes a large body of work produced in a relatively short timeframe. The work was conducted with a level of inter-agency collaboration that is unprecedented and has been described as second to none. These efforts represent the first time that key public transportation agencies on the North Shore, including seven governments, have been able to collectively establish a comprehensive understanding of the transportation challenges that North Shore communities face, and produce a unified and actionable approach for moving forward as a region.

When it comes to addressing the North Shore's transportation woes, INSTPP acknowledges that politically expedient choices are not necessarily congruous with good decisions that result in positive impacts and good value for taxpayers. The recommendations produced by the Staff Working Group enable evidence-based decision-making and have been informed by the analysis of real traffic data and the application of modern, urban transportation planning best practices.

The Staff Working Group's Final Report makes clear that there is no silver bullet when it comes to resolving the North Shore's transportation challenges. The way forward for the region must be through the work of INSTPP.

The North Shore is served by three municipalities, two First Nations, the Government of BC, the Government of Canada, and TransLink. It cannot be overstated that these entities must continue to cooperate to enact a rational and agreed-upon regional approach so the mobility of people and goods on the North Shore can improve. The absence of a coordinated multi-agency approach can paralyze important cross-jurisdictional initiatives and further restrains the region's ability to mobilize resources from senior levels of government. It is therefore critical for the transportation future of the North Shore that next steps continue to build off the work of INSTPP. This includes collaborative implementation of the recommendations produced, as well as the establishment of a long-term structure for ongoing cooperative transportation planning and decision-making.

The Steering Committee thanks Context Research Ltd, Brian Mills and Associates, the members of the Staff Working Group, and everyone else who has contributed to INSTPP through workshops, meetings, and by speaking with their elected officials. We look forward to continuing to work with our governmental and community partners as we move forward on this critical issue.

In your service,



Bowinn Ma, INSTPP Chair, On behalf of the INSTPP Steering Committee
MLA North Vancouver – Lonsdale

INSTPP Steering Committee:



Darrell Mussatto
Mayor of North Vancouver City



Michael Smith
Mayor West Vancouver District



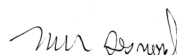
Dustin Rivers
Squamish Nation



Jonathan Wilkinson
MP North Vancouver



Richard Walton
Mayor North Vancouver District



Kevin Desmond
CEO of TransLink



Gerald Schlesiger
Tsleil-Waututh Nation

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INSTPP Steering Committee:

- Bowinn Ma, Chair and MLA North Vancouver-Lonsdale (acting on behalf of MoTI)
- Kevin Desmond, CEO, TransLink
- Darrell Mussatto, Mayor, City of North Vancouver
- Khelsilem (Dustin) Rivers, Councillor, Squamish First Nation
- Gerald Schlesiger, Manager, Planning, Tsleil-Waututh First Nation
- Michael Smith, Mayor, District of West Vancouver
- Richard Walton, Mayor, District of North Vancouver
- Jonathan Wilkinson, MP, North Vancouver

INSTPP Staff Working Group

City of North Vancouver

- Michael Epp
- Dragana Mitic
- Doug Pope
- Liliana Vargas

District of North Vancouver

- Steve Carney
- Gavin Joyce
- Tom Lancaster
- Ingrid Weisenbach

District of West Vancouver

- Raymond Fung
- Jim Bailey
- John Calimente
- Vanessa Garrett

Province of British Columbia

- Thomas Chhun
- Ed Storm

Squamish First Nation

- Kathleen Callow*

TransLink

- Geoff Cross
- Maria Su
- Matt Craig

Vancouver Fraser Port Authority

- Dennis Bickel
- Jack Peng

INSTPP Consultants

- John Forsdick, Project Lead, Context Research Ltd.
- Brian Mills, Project Manager, Brian Mills and Associates

The Consultants also acknowledge the assistance of TransLink's Maria Su, Director, Research and Analytics, for her contributions to the planning process and this report; Ali Darwiche, Senior Planner, for the modelling and the evaluation of options; and, Lisa Josephson, Senior Planner, Systems Plans, for research, logistics and reporting.

*Participated in latter part of INSTPP project

EXECUTIVE SUMMARY

Metro Vancouver is a highly desirable place to live, work and play. It houses year-round regional tourism and recreational destinations and is the gateway to Whistler and other communities along the Sea to Sky corridor. It is also home to Vancouver Fraser Port Authority's North Shore Trade Area, and BC Ferries' Horseshoe Bay terminal in West Vancouver that connects the mainland to Vancouver Island, the Sunshine Coast and Bowen Island.

Like many parts of the Metro Vancouver region, the North Shore is predominantly comprised of low-density single-family homes, with many services and neighbourhoods accessible mostly by automobile. While this has begun to change in recent years with higher-density areas such as the Lonsdale corridor having less reliance on the auto, it remains the most frequent travel mode for most trips.

Dependency on auto travel for most North Shore trips, by people travelling to and through the North Shore each day for employment and to access destinations, is leading to more vehicle traffic. This results in congestion and delays on roads and bridges that are heavily used. Congestion has reached such critical levels that the Mobility Pricing Independent Commission identified that travel to, from and around the North Shore is one of the major traffic hotspots in Metro Vancouver.

The impact of road congestion is felt regularly by people travelling by transit and by auto. Long queues near the North Shore bridgeheads happen daily, and our analysis shows that travel across the Second Narrows Bridge during rush hours often takes three to four times as long as at other times of the day. A five-minute, seven-kilometre trip on the Upper Levels Highway from Lonsdale Interchange to just south of the bridge can take 15 or more minutes during rush hours. Incidents on the bridges and highway further increase delays. Employers have expressed their frustration and challenges with attracting and keeping employees who either must commute from other parts of the region on congested roads and bridges or make a long transit journey.

The Integrated North Shore Transportation Planning Project (INSTPP), implemented in January 2018, brought all levels of government on the North Shore together to identify joint actions to address congestion issues. Over a five-month period, INSTPP partners worked together to confirm the main sources of transportation challenges and to identify actions to improve access and mobility on the North Shore and across Burrard Inlet. Informed by transportation data and analytics, this work revealed that the major causes of the transportation challenges are as follows:

- Land use is mostly auto-oriented.
- The road network has gaps that reduce choice and increase congestion.
- Transit and alternative modes are not currently competitive with auto for many trips.
- Road demand exceeds capacity at times and at key pinch points along the road network.
- Measures are lacking to manage road use.

There is not one single cause of traffic congestion on the North Shore, and there is not one solution to address congestion problems. A coordinated plan is required that includes actions in five main areas:

1. Reducing reliance on Highway 1 for local trips by creating more east-west travel options.
2. Improving transit service and infrastructure for transit, cycling, and walking to make them viable alternatives to the auto for more trips.
3. Addressing congestion at key pinch-points, particularly North Shore bridgeheads.
4. Placing a high priority on integrating land use and transportation, including focusing future development within town centres and along the Frequent Transit Network.
5. Implementing programs to encourage behavioural change that reduces reliance on automobiles.

In evaluating options to improve North Shore access and mobility, bridge capacity expansion across Burrard Inlet was a key consideration. Our analysis determined that widening either of the existing bridges is not possible due to structural limitations. Neither bridge is scheduled for replacement in the near term, and a third bridge crossing is not included in any transportation plans.

Bridge replacement may be considered in the future. Our initial analysis shows that a new, wider bridge would ease congestion in the first few years of operation, but would lead to even more congestion, slower travel times and more traffic on streets as more people choose to drive their cars. Additional benefits may be possible by combining bridge replacement with complementary transit and road network improvements, along with measures to influence peak-period travel demand. Future planning to replace either of the existing bridges will require more in-depth analysis to evaluate the benefits and impacts of bridge expansion. Analysis will need to be done within the context of prevailing social and technological trends, a coordinated approach to improving overall people-moving options, and potential socio-economic impacts.

Our review confirmed that there is good alignment between the North Shore municipalities' land use plans and TransLink's investment plans to focus both jobs and housing in designated places – in walkable town centres and along designated Frequent Transit Network corridors. Coordinating land use and transportation will continue to be a priority to enable more people to walk, cycle and use transit for many of their daily needs.

Current plans and projects will improve access and mobility on the North Shore. Improvements to the Lower Lynn are expected to reduce travel time by 50% for drivers travelling from Brooksbank Avenue to Mt Seymour Parkway and by 38% for drivers travelling eastbound on Highway 1 to Mt Seymour Parkway. TransLink's new Marine-Main B-Line is estimated to provide travel time savings of about 30 minutes when traveling from Park Royal to Phibbs Exchange. Increasing the frequency of SeaBus operations to every 10 minutes during the peak hours, starting in 2019, will increase two-way passenger capacity by 1,500 people per hour and reduce average wait times by about one-third. Other investments from the Mayors' Council 10-Year Vision and municipal transportation projects will also improve the performance of the North Shore transit system and road network.

Additional investments and supportive decisions are needed to provide more and better choices for people to access jobs, services and recreation destinations without adding to congestion and delays. Near-term priorities, in addition to those noted above, include working with TransLink to advance other B-Line rapid transit services identified for the North Shore, and determining the conditions for rapid transit to connect downtown Vancouver with Lonsdale City Centre. Municipal partners have noted a preference for ‘rail’ rapid transit for this connection. Completing the Lower Level Road to provide more east-west travel options, continued improvements to Highway 1, improving the cycling and pedestrian networks, and working with employers and communities to encourage more sustainable travel patterns are also recommended priorities.

INSTPP has enabled partners to agree on cross-jurisdictional priorities for near-term action, and it has set the stage for considering longer-term options to improve access and mobility. Some of the key near-term actions are highlighted below¹:

1. Continue the collaborative forums in which North Shore municipalities, First Nations, TransLink, and the provincial and federal governments work together to implement identified projects and continue planning to address issues of access and mobility on the North Shore.
2. Launch the Marine-Main B-Line rapid transit service in 2019 and determine how to advance two other planned B-Line services to connect Lynn Valley Centre via the Lonsdale corridor to Downtown Vancouver and, secondly, Metrotown to Capilano University. This should be done in conjunction with transit priority improvements (e.g., dedicated lanes on the approach to the bridges, queue jumping) on road corridors, as feasible, to deliver fast, frequent and reliable transit service.
3. Evaluate the conditions for rapid transit between the North Shore and Burrard Peninsula, connecting Lonsdale City Centre with Vancouver’s metropolitan core and the regional rapid transit network. Municipal partners have stated a preference for ‘rail’ rapid transit, although the best technology will be determined through joint planning with TransLink.
4. Implement a new express bus service across the Second Narrows Bridge connecting the regional rapid transit network with the North Shore to provide faster and broader access to the rest of the region.
5. Complete a technical review to determine transit priority measures around the bridgeheads of the Lions Gate and Second Narrows Bridges, and on connecting arterial roads, to free transit passengers from congestion and to ensure that travel by transit service is quick and reliable.
6. Implement 10-minute frequency rush hour SeaBus service and other commitments in the Mayors’ Council Ten-Year Vision, including investments in Frequent Transit Network service levels and capacity.
7. Continue with coordinated, cross-jurisdictional land use and transportation planning that promotes access and mobility without increasing demand for driving, including aligning land use with regional plans to create conditions that support increased transit use, and investments in higher-capacity rapid transit.

¹ The table represents a short list of SWG recommendations, and the reader should refer to the detailed set of recommendations contained in Section 4 of the main report.

8. Complete and improve the pedestrian and cycling networks to make walking and cycling the preferred modes within town centres and along the Frequent Transit Network and to connect paths into one complete network across the North Shore.
9. Complete the Lower Level Road connecting Marine Drive to the west and West 1st Street to the east. Additionally, evaluate the potential to connect further east by providing a new major east-west road connection (Barrow-Spicer corridor) across the North Shore.
10. Complete the Lower Lynn Improvement project on the Upper Levels Highway to improve travel time reliability; and review long-term plans for the interchange (beyond the current phases of the project), including additional infrastructure improvements when warranted and feasible.
11. Work with the Province to investigate if current roadway design and infrastructure can be improved to increase safety, and to consider options to expedite incident clearing on the North Shore bridges and highway.
12. Develop a proactive and coordinated North Shore-wide program that works with schools, businesses and employers to encourage sustainable travel behaviour; at the same time, actively participate in on-going regional discussions on mobility pricing as a possible tool to manage congestion.
13. Implement new inter-regional bus service between the Squamish Lillooet Regional District and Metro Vancouver, connecting with the TransLink system and offering an alternative to automobile travel.

These actions, along with the recommendations in Section 4.0, set the stage for more detailed planning and budgeting to implement initiatives over the next two years. Potential projects to support the advancement of the recommendations are included in a separate technical report.

INSTPP key project and program recommendations are illustrated in Figure 1. The following sections provide background on INSTPP, as well as information on the transportation challenges and options, and detailed recommendations.

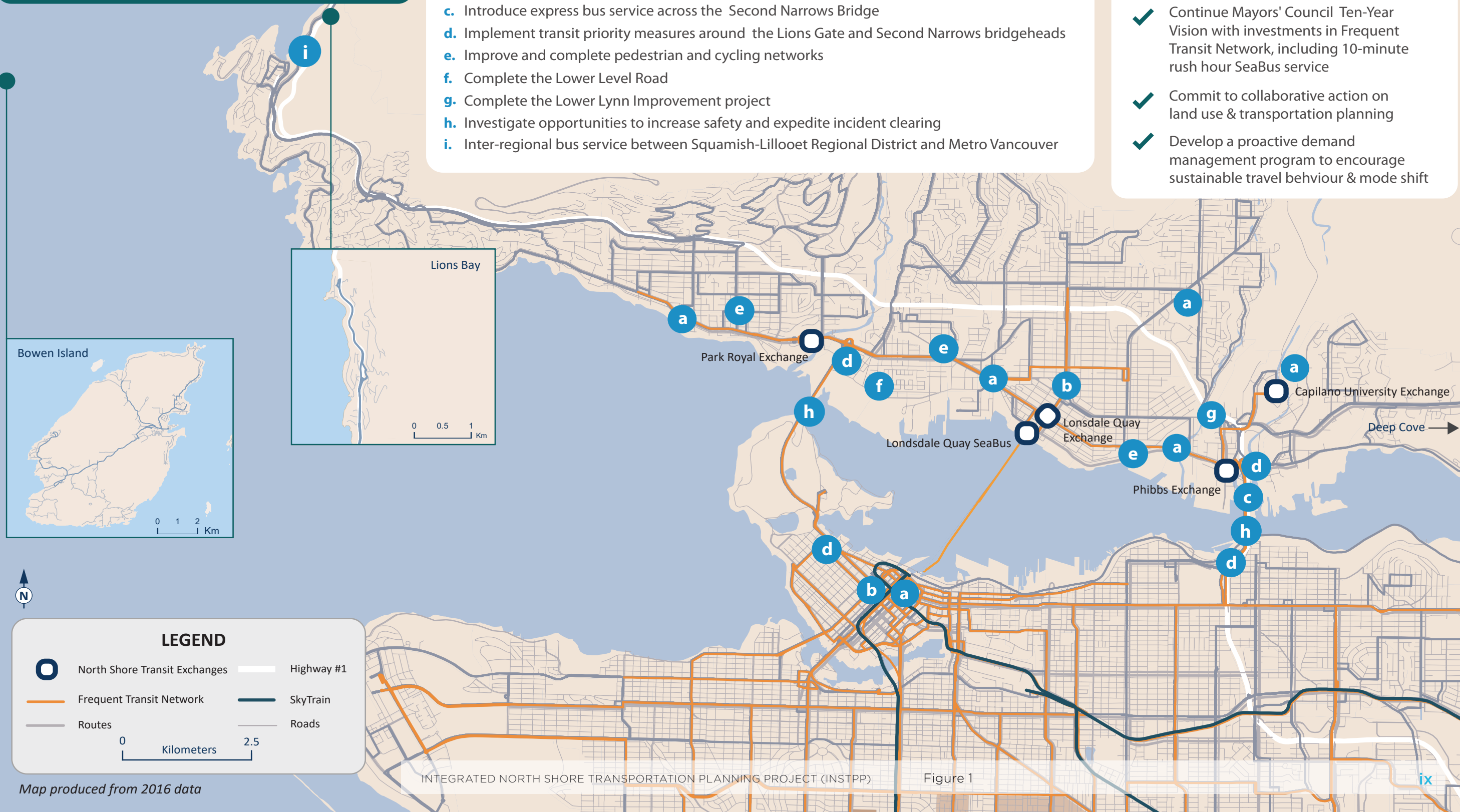
INSTPP Key Project & Program Recommendations

Recommended Project Actions

- a. Launch Marine-Main B-Line and future B-Line services
- b. Evaluate rapid transit between Lonsdale Regional City Centre and downtown Vancouver
- c. Introduce express bus service across the Second Narrows Bridge
- d. Implement transit priority measures around the Lions Gate and Second Narrows bridgeheads
- e. Improve and complete pedestrian and cycling networks
- f. Complete the Lower Level Road
- g. Complete the Lower Lynn Improvement project
- h. Investigate opportunities to increase safety and expedite incident clearing
- i. Inter-regional bus service between Squamish-Lillooet Regional District and Metro Vancouver

Recommended Program Actions

- ✓ Establish collaborative forum to implement INSTPP recommendations
- ✓ Continue Mayors' Council Ten-Year Vision with investments in Frequent Transit Network, including 10-minute rush hour SeaBus service
- ✓ Commit to collaborative action on land use & transportation planning
- ✓ Develop a proactive demand management program to encourage sustainable travel behaviour & mode shift



The issue of transportation and road congestion on the North Shore continues to grow, impacting residents, commuters, businesses, and services. Multiple agencies have planning responsibilities for the transportation network, including all levels of government on the North Shore, TransLink and Vancouver Fraser Port Authority. With all agencies currently undertaking projects and planning processes, agency and community leaders on the North Shore recognized the importance of establishing an integrated and comprehensive approach to transportation solutions to address concerns about access and mobility.

In January 2018, the Government of Canada, the Squamish and Tsleil-Waututh First Nations, the Government of BC, the three North Shore municipalities and TransLink came together to address the issue of transportation and road congestion on the North Shore. Terms of Reference (Appendix A - updated April 2018)* were established for a cross-jurisdictional and collaborative forum to provide an integrated transportation approach that is environmentally progressive, values safety, improves the movement of people and goods, and respects First Nations' interests. The Integrated North Shore Transportation Planning Project (INSTPP) was initiated with a mandate to:

1. Complete a comprehensive assessment of current and future transportation needs on the North Shore and determine gaps in meeting the existing and long-term needs.
2. Identify collaborative opportunities for short-term transportation improvements on the North Shore.
3. Develop a collective, long-term transportation framework for the North Shore between multiple transportation agencies.
4. Enable a multi-level, multi-agency forum for the sharing of transportation and planning information, and transportation-related problem identification and problem solving.

Throughout this work, INSTPP takes into consideration:

- All modes of goods and people movement including, but not limited to rail: truck, personal vehicles, public transit, cycling, walking and water taxis (SeaBus).
- Local community development plans on the North Shore and, if necessary identifies where changes may be required to meet shared transportation objectives.

A Steering Committee was established in February 2018, to provide strategic oversight for INSTPP. This included Mayors of each North Shore municipality, representatives of the federal and provincial governments, TransLink, and the Squamish and Tsleil-Waututh First Nations.

A Staff Working Group (SWG) was also established to implement the work program to achieve the project mandate. The SWG included representatives from North Shore municipalities, the Government of BC, Squamish First Nation, TransLink and Vancouver Fraser Port Authority. The work program for INSTPP aligned with the key deliverables for the project as shown in Figure 2.

* The scope of work in the updated Terms of Reference was expanded significantly to include additional planning, research, and workshops with the Steering Committee, Staff Working Group, North Shore Congress and meetings with City Councils.

Keys steps in the INSTPP work program

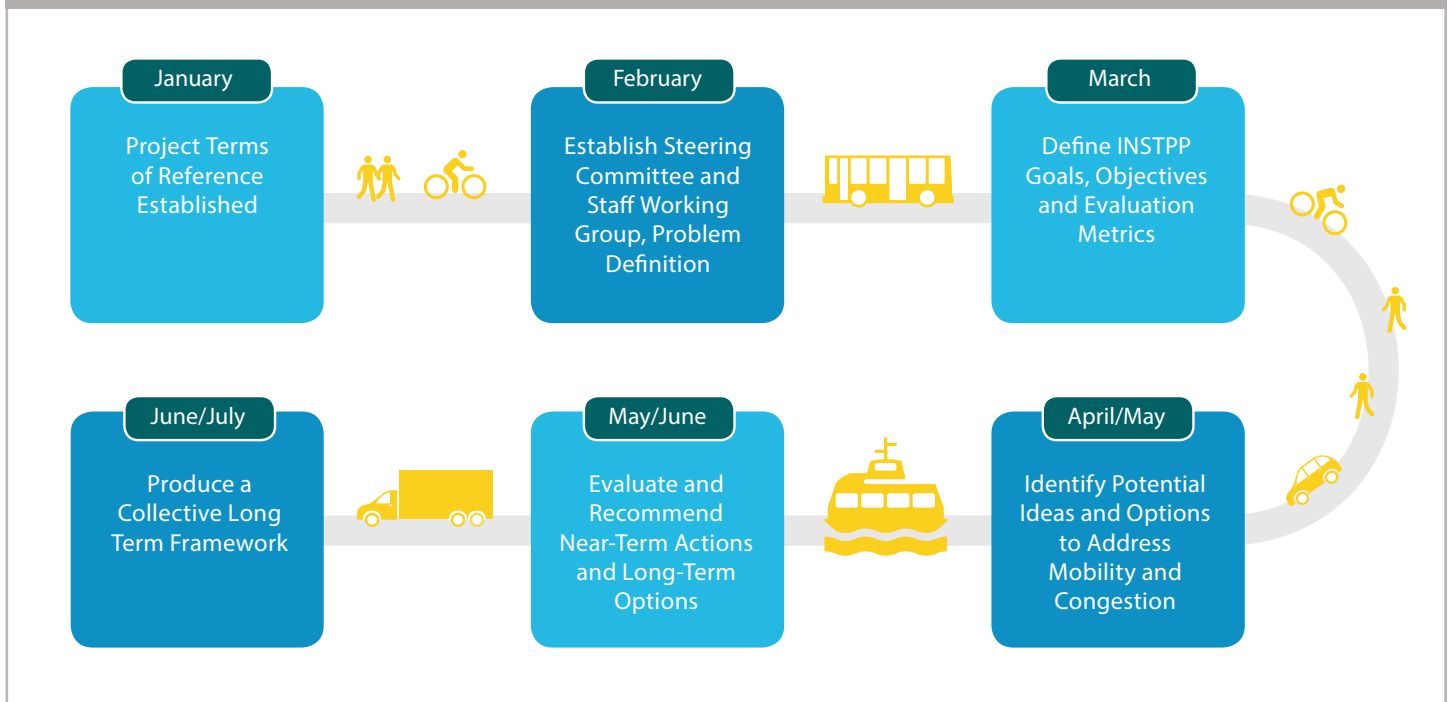


Figure 2

The work program was implemented over five months and included eight SWG workshops and five Steering Committee meetings. Two stakeholder workshops were also held with additional representation from partner agencies and the business and non-profit sectors to review and confirm transportation challenges and options to improve mobility. Finally, four City Council presentations and a workshop with the North Shore Congress of elected officials occurred in June 2018, to present the INSTPP process and high-level recommendations.

The SWG has worked collaboratively to understand the transportation challenges and issues facing the North Shore. Research and analysis has been conducted using data sources that include the regional trip diary, census and Google maps, traffic counts, anonymous Compass data, anonymous cell phone signal data, and more. The analysis included using tools such as the Regional Transportation Model (RTM) to estimate future travel growth and patterns as well as demand for specific corridors or modes. This enabled INSTPP to test common assumptions, confirm the factors causing congestion and test options that can help improve access and mobility.

This report summarizes the INSTPP process and the SWG recommendations to improve access and mobility on the North Shore. While the recommendations are not binding, they represent the best options currently available and they set the stage for ongoing collaboration and planning among all the INSTPP partners. Supporting documentation, including initial research, project-specific details and the results of multiple work sessions, is included in separate technical documents available through TransLink and partner agencies.

Metro Vancouver is a highly desirable place to live, work and play. The North Shore is nestled between Indian Arm to the east, Burrard Inlet to the south, Howe Sound to the west and the mountains to the north. It includes three municipalities – District of West Vancouver, City of North Vancouver, and District of North Vancouver – Bowen Island, Lions Bay, and two First Nations: Squamish First Nation and the Tsleil-Waututh First Nation.

The North Shore, including Bowen Island and Lions Bay, is home to roughly 196,000 residents. The number of people employed on the North Shore is approximately 89,500.² It houses year-round regional tourism and recreational destinations and is the gateway to Whistler and other communities along the Sea to Sky corridor. It is also home to Vancouver Fraser Port Authority's North Shore Trade Area, and BC Ferries' Horseshoe Bay terminal in West Vancouver that connects the mainland to Vancouver Island, the Sunshine Coast and Bowen Island. Its strategic location makes the North Shore an attractive place both for people to live and work, and for those travelling from across the region to access recreation destinations. The attractiveness of the North Shore has led to rapidly increasing land prices, and a growing demand for adequate housing options for many people who have been priced out of the single-family housing market.

It is projected that the Metro Vancouver region will grow by an additional million people by 2041.³ This growth will be accommodated by the 21 municipalities, one electoral area and First Nations communities that make up the region. The number of people living on the North Shore is expected to increase by nearly 61,000, an increase of 30% from the current population. Historically, the North Shore has only seen a fraction of regional growth, with its total population rising only 3.3% over 5 years (2011-2016); the average growth rate for municipalities in Metro Vancouver was 6.5% in that same time.⁴

The below-average growth rate on the North Shore is evident in the current land use pattern, which is predominantly low-density single-family homes, with many services and neighbourhoods accessible only by auto. It has also resulted in more jobs being created than growth in the working-age population, resulting in people travelling to the North Shore each day for work. Notably, those areas with transit-oriented land use, such as along the Lonsdale corridor, have a larger percentage of trips made by walking, transit and cycling, and are well positioned to take advantage of alternative transportation improvements.

Traffic congestion has become a key factor impacting how and when people travel. Because of the misalignment of jobs and affordable housing, unique geography, constrained road network and capacity limitations imposed by two bridges that provide access to the rest of the region, the North Shore is prone to transportation challenges. Road congestion has reached such critical levels that the Mobility Pricing Independent Commission identified one of the major traffic hotspots in Metro Vancouver as being "travel to, from and around the North Shore – in every direction."

² Source: Metro Vancouver population and employment projections

³ Source: <http://www.metrovancouver.org/services/regional-planning/Pages/default.aspx>

⁴ Source: <http://www.nsnews.com/news/statcan-data-shows-north-shore-population-slightly-up-1.9771546>

Traffic congestion impacts our quality of life, our health, safety, and the local economy. Building more road infrastructure is increasingly expensive and fails to address essential livability issues such as increased pollution and the safety of our communities. There is a growing recognition that for cities to develop sustainably, transportation infrastructure must be well integrated with land use and based on reliable and efficient transit that is competitive with single-occupancy vehicle use.

Recognizing the limits and inevitable consequences of expanding roadways, each of the North Shore municipalities adopted Official Community Plans to address delays for people and local goods by integrating land use and transportation. Approved plans on the North Shore contain policies for compact, complete and vibrant urban centres with a range of housing options, serviced by active transportation networks and well-connected by transit. These policies were supported by the North Shore Area Transit Plan (2013), which identified key frequent transit corridors including some that would eventually accommodate Rapid Transit, such as B-Line service, on corridors like Marine-Main, Lynn Valley, and Lonsdale, to connect town centres (Figure 3) to the regional network. In support of this policy, each municipality is working to accommodate the infrastructure required to ensure the success of Frequent Transit through capital planning, allocating and directing growth strategically, and designing lanes and signals to accommodate and prioritize transit.

The efficient movement of goods from the Port terminals is also an important factor in considering improvements to the transportation network. Road congestion can constrain goods movement leading to significant impacts to the regional, provincial and national economies. The movement of goods from the Port terminals on the North Shore is primarily by rail, and forecasted growth for the Port will rely on available rail capacity to minimize impacts to the road network and congestion.

Municipal plans and the Mayors' Council 10-Year Vision include improvements to transit, roads and land use to help improve access and mobility. However, these actions alone cannot solve automobile congestion. More action is needed, and the choices we make today will directly impact the livability of our communities and the economy for years to come.

North Shore Centres and Growth Areas

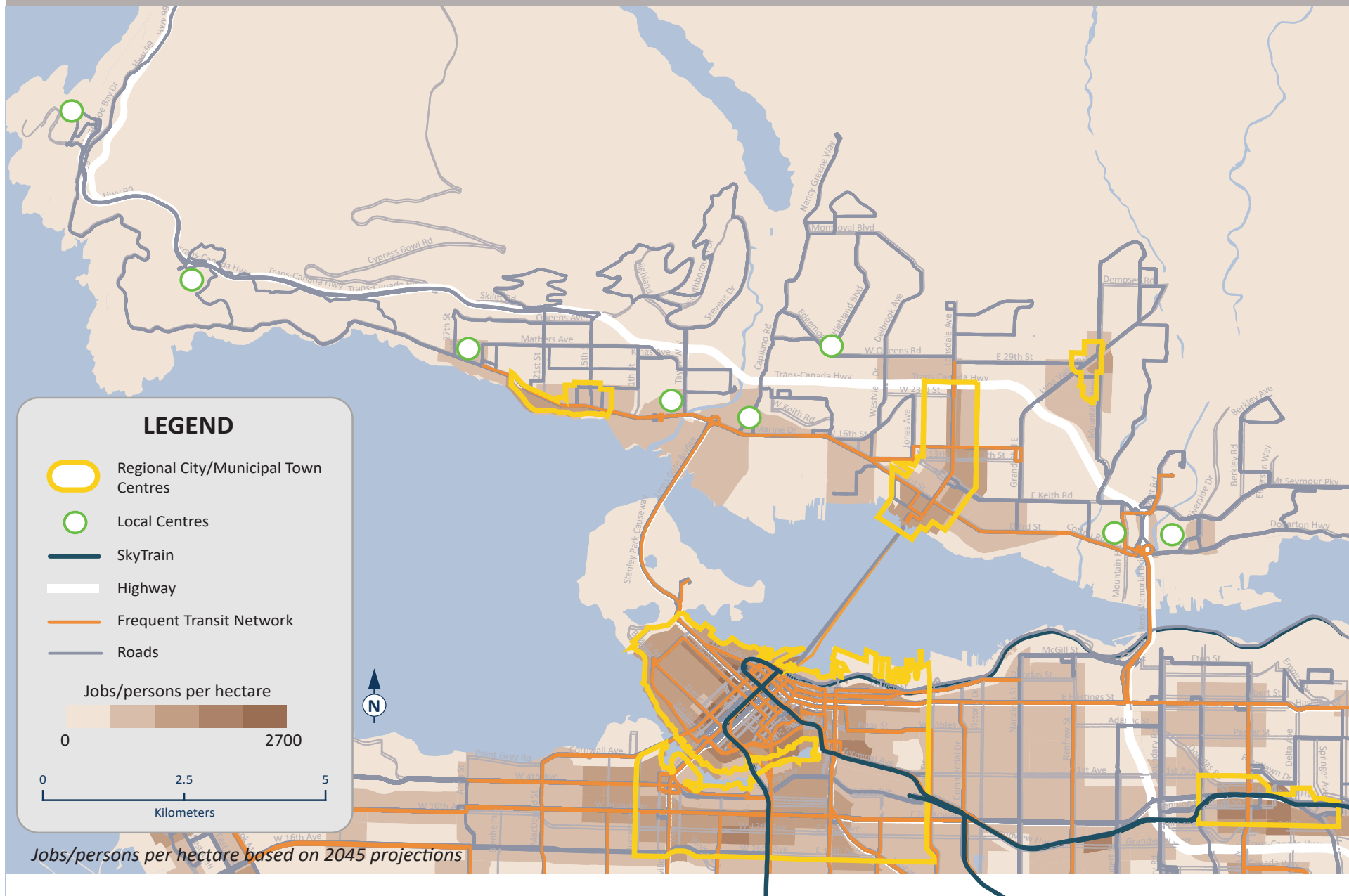


Figure 3

CHALLENGES AND OPPORTUNITIES FOR ACCESS AND MOBILITY

One of first SWG tasks was to identify the key challenges that need to be addressed to improve access and mobility on the North Shore. TransLink's research and analytics team examined relevant data and used the Regional Transportation Model (RTM) to compare different improvement sketch scenarios and estimate travel demand for specific corridors or modes.

Key challenges affecting transportation on the North Shore are highlighted in Figure 4 and are presented in more detail in the following discussion.

There are limited options to reduce congestion on the North Shore because of its location, topography, and reliance on two bridges and the SeaBus to connect to the rest of Metro Vancouver. With many people

travelling to, from and around the North Shore each day for personal and business activities, and many in single-occupancy vehicles, delays can only be alleviated by reducing reliance on the auto, and by improving access and mobility by transit, cycling and walking.

Our analysis of travel patterns found several key factors that, if adequately addressed, can help improve the experience for people travelling to, from and around the North Shore, and across Burrard Inlet. The following points highlight the key challenges to improving North Shore access and mobility.

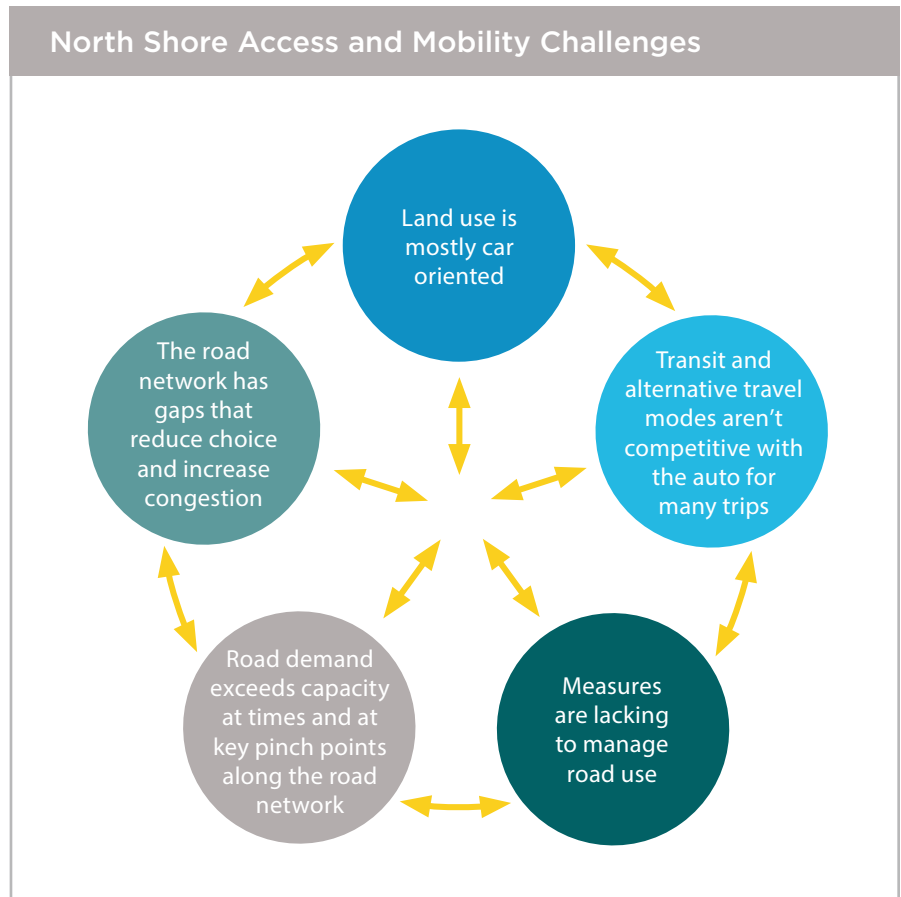


Figure 4

3.1 Land use is mostly car-oriented

The North Shore and most of Metro Vancouver has dispersed and low-density land use. As a result, the car is more convenient for most trips.

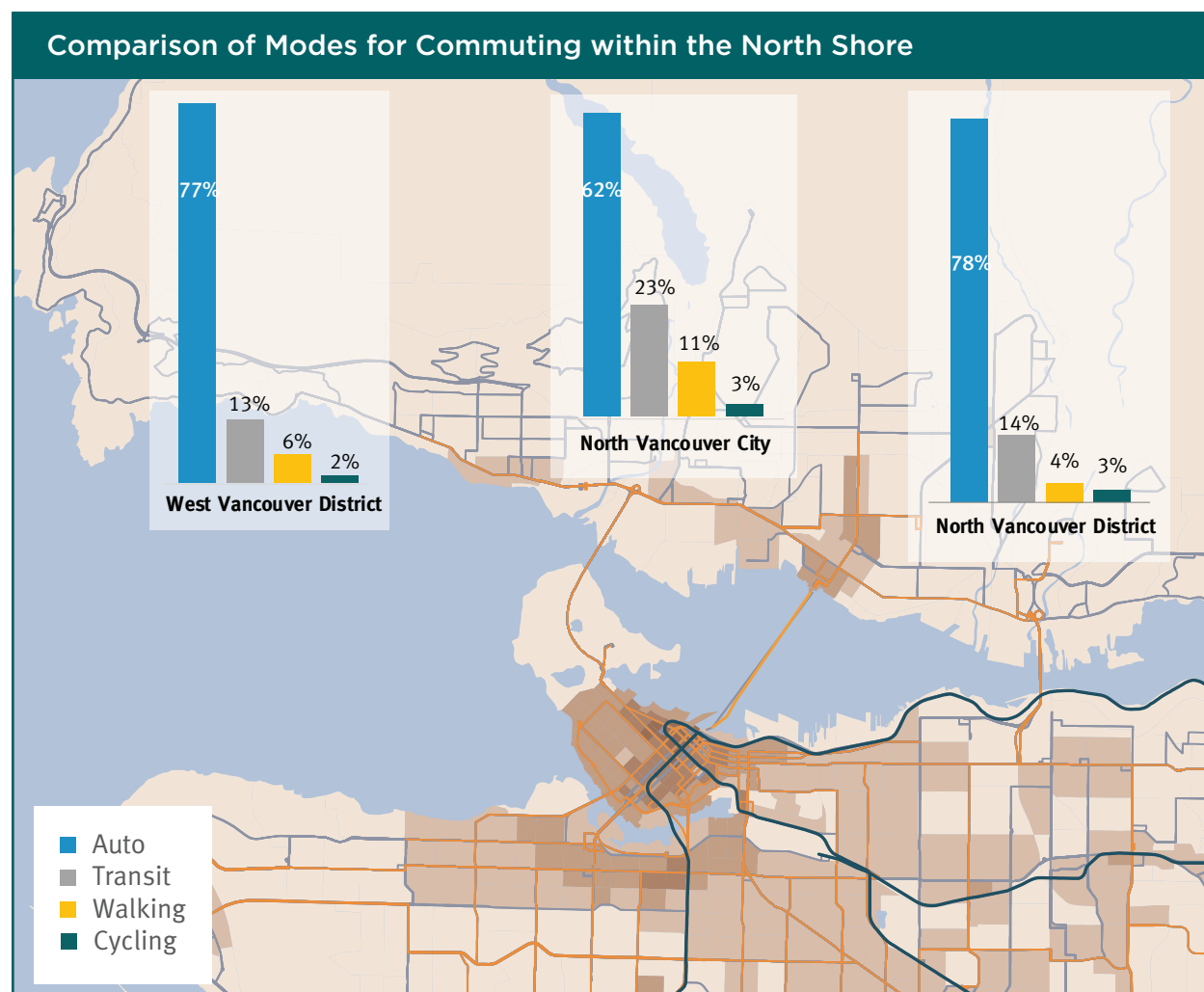


Figure 5 Source: Statistics Canada, Census 2016

Note: Graphs do not total 100%. The census includes category "Other" for trips by any other mode.

Figure 5 shows that the use of active modes (i.e., walking, cycling and transit) varies within different parts of the North Shore and highlights that transit-supportive land use is one of the key factors associated with higher transit use (e.g., Lonsdale corridor). Targeting future population and job growth in areas designated for higher density and along the Frequent Transit Network creates the conditions for increased use of transit for local and regional trips.

Approved municipal plans on the North Shore contain visions for compact, complete, and vibrant urban centres with a range of housing options, serviced by active transportation networks and well-connected by transit. This aims to make travel by walking, cycling and transit the preferred options for more trips.

3.2 The road network has gaps that reduce choice and increase congestion

The North Shore has limited options to accommodate east-west traffic on arterial roads due, in part, to topography but also because of an incomplete road network. Figure 6 shows the comparatively high number of local trips by North Shore residents and businesses that use the freeway, which adds to congestion.

Presently there are only two east-west route options: Highway 1 and Marine Drive. Marine Drive serves much of the crosstown demand and access to many local destinations, and it often becomes congested. Highway 1 is also often congested, and improvements are underway to increase capacity that will help serve future growth along the Sea to Sky corridor.

Improving the east-west road network would help improve North Shore access and mobility. This includes working with the Squamish First Nation, local governments and the Government of BC to complete the Lower Level Road to provide a third east-west route for crosstown and local traffic. This would connect West 1st Street to the Park Royal area and Marine Drive in the District of West Vancouver. It would help alleviate traffic congestion at the intersection of Taylor Way and Marine Drive by rerouting traffic not destined for the Lions Gate Bridge away from the busy intersection. It also has the added benefit of improving walking and cycling connections and potentially creating conditions favourable for transit services. Additional measures include improving the flow of traffic along Marine Drive and other arterials with improvements to signal coordination, parking management and transit priority.

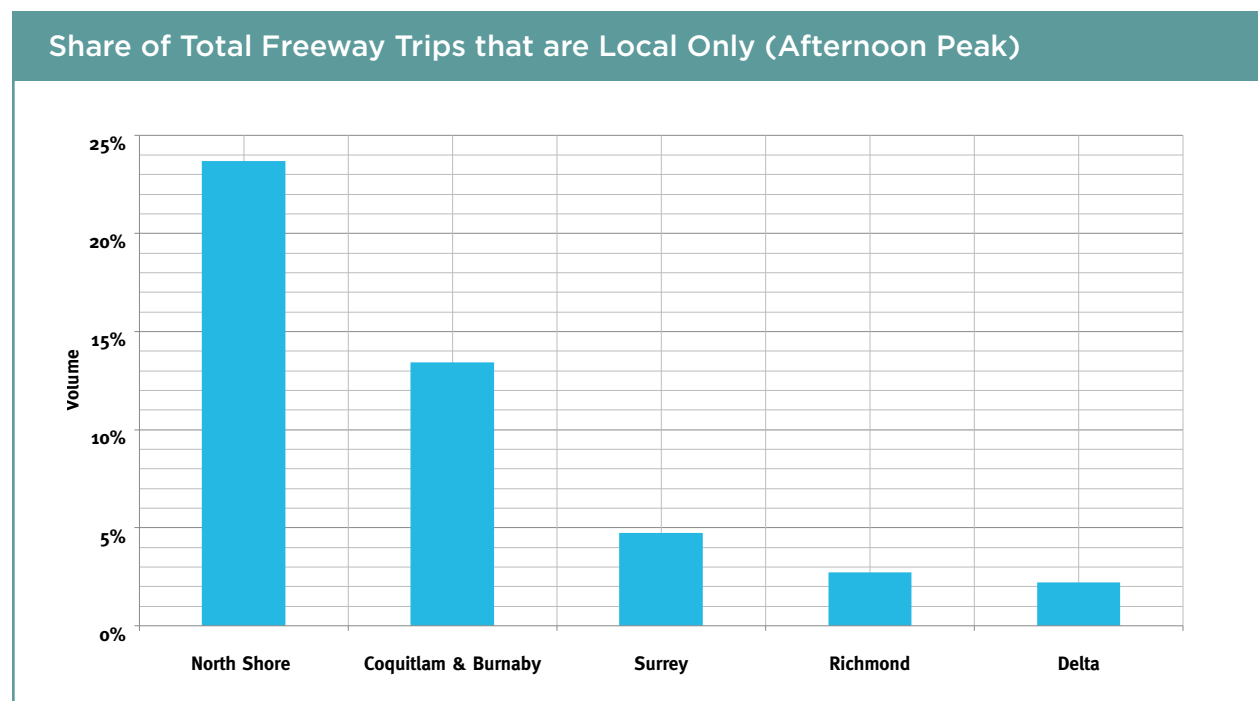


Figure 6 Source: TransLink Regional Transportation Model

3.3 Transit and alternative modes are not currently competitive with the auto for many trips

Transit is often not competitive with the auto for many trips given how dispersed the travel patterns are in the region. In particular, for trips along the Highway 1 corridor, the same distance can often be travelled by car in less than half the time it takes by transit. There are no current plans to replace either of the bridges and they can't be expanded due to structural limitations. Consequently, improving transit is required to make it a more viable option for more people travelling to and from the North Shore. This includes improving transit connections between major destinations, increasing the frequency of service, implementing B-Line service, improving transit travel time performance by giving transit priority on roadways and at bridgeheads, and aligning land use and transportation so that jobs and housing are close to transit.

Figures 7 and 8 show the destinations and origins of people travelling to and from the North Shore, respectively.

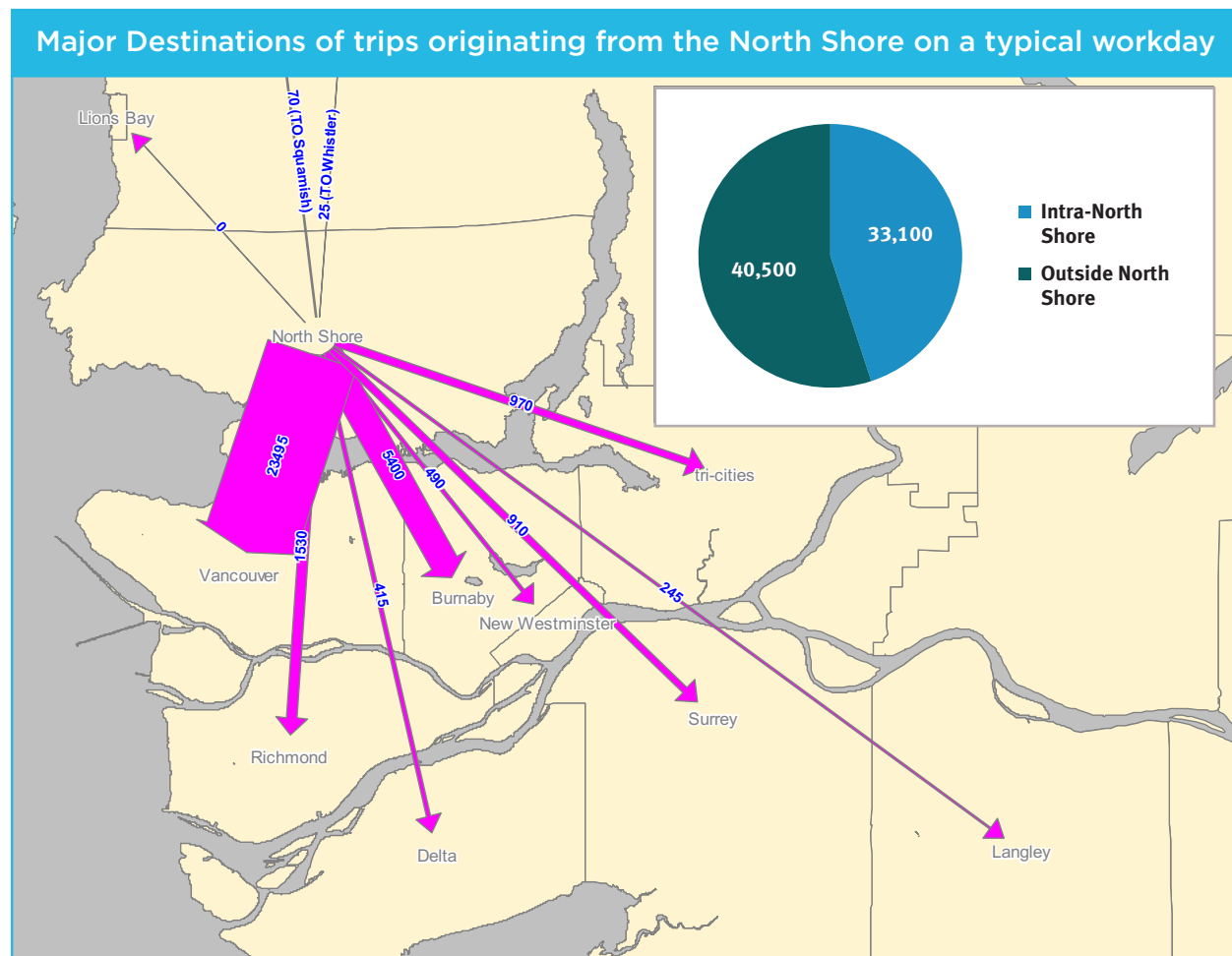


Figure 7 Source: Statistics Canada, Census 2016 – Note: trips <100 not included

While North Shore residents travel mainly to Vancouver and Burnaby (Figure 7), people travelling to the North Shore come from all over the region (Figure 8).

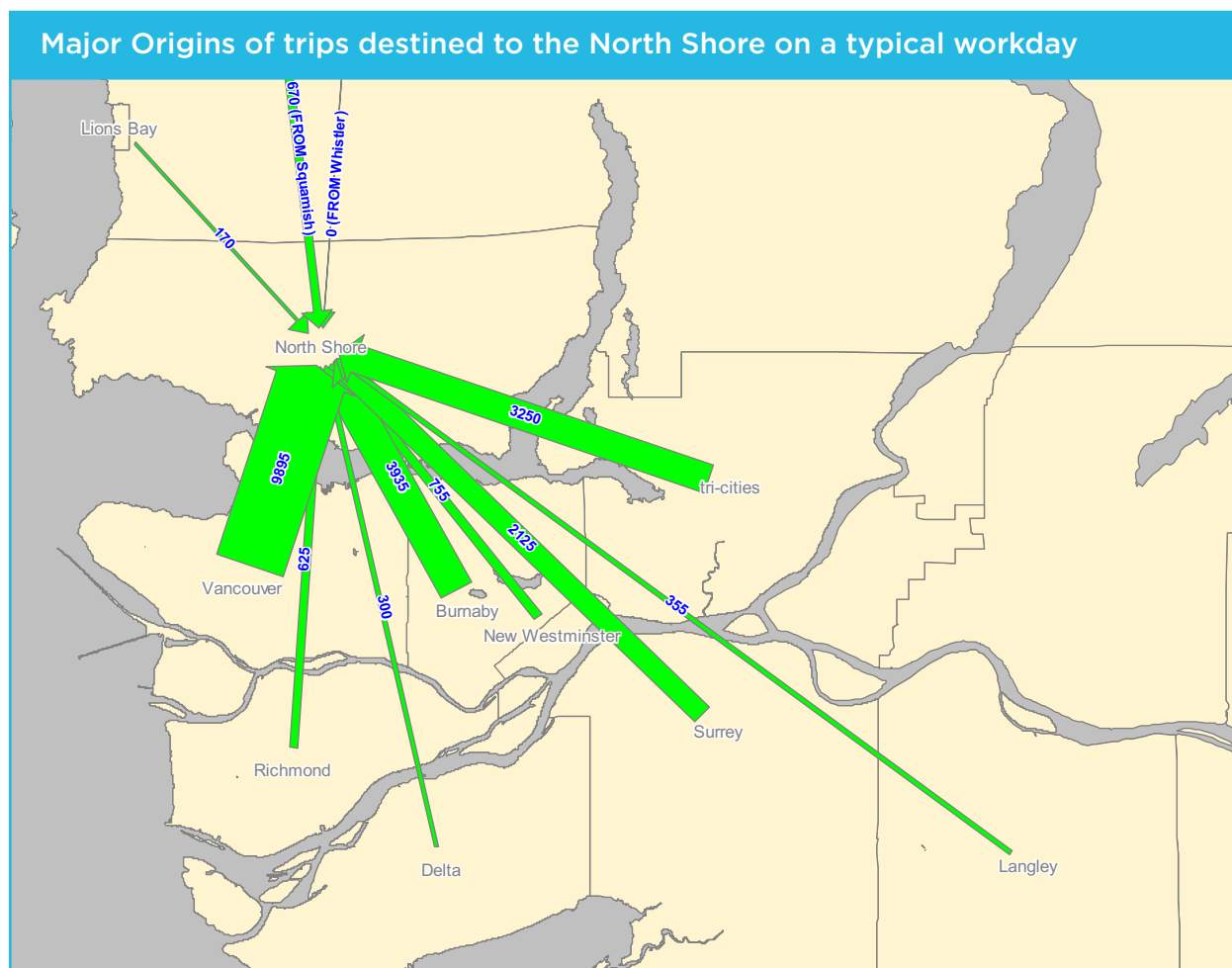


Figure 8 Source: Statistics Canada, Census 2016 - Note: trips <100 not included

Figure 9 is a high-level representation of the catchment area for people travelling across Burrard Inlet during the peak periods. The Second Narrows Bridge has the largest catchment of the three crossings, attracting trips from throughout the region along the Highway 1 corridor, whereas the Lions Gate Bridge and SeaBus serve more local trips between the central parts of the North Shore and northern parts of Vancouver. In terms of mode choice, North Shore residents are more likely to use transit to commute into Vancouver and Burnaby as compared to those commuting to or through the North Shore from the rest of the region, who are more likely to use a car.

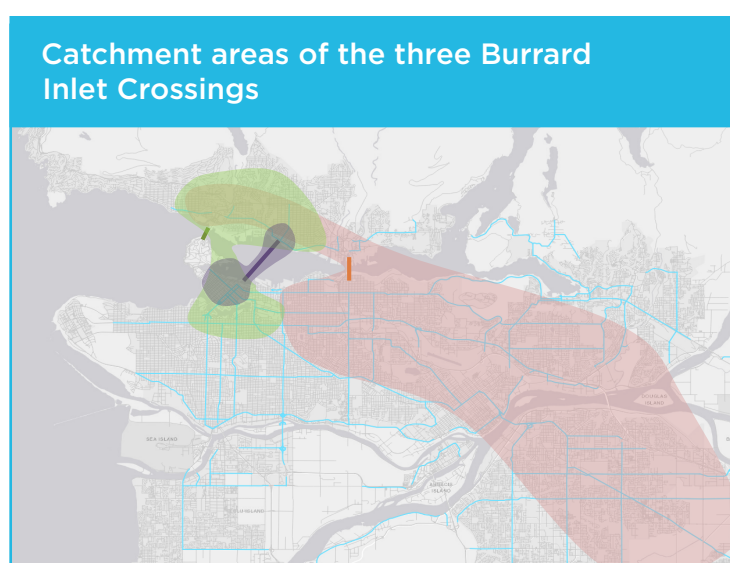


Figure 9 Source: Cellint Traffic Solutions & TransLink Compass

The large catchment and long distances travelled by people going to the North Shore make walking, cycling and transit less competitive to the auto. To change this, actions must be taken to:

1. Make transit more time competitive and reliable: a new express bus service across the Second Narrows Bridge to connect to SkyTrain in Burnaby would better connect the North Shore to the regional rapid transit network. Additional planned B-Lines for the North Shore will also improve mobility and connections to the regional transit network. Phase 3 of the Mayors' Council 10-Year Vision includes B-Line service from Lynn Valley Centre to Downtown Vancouver via 29th Street, Lonsdale Avenue and Marine Drive, and from Metrotown to Capilano University via Willingdon Avenue. Municipal partners expressed strong interest in accelerating the two additional B-Lines, although this would require funding commitments not currently in place.
2. Implement transit priority measures on roadways, where feasible, including bus lanes, queue jumpers and signal coordination to improve the speed and reliability of transit relative to automobile travel.
3. Introduce demand management programs that encourage increased use of other modes to reduce reliance on single-occupancy vehicles, especially during rush hours.

3.4 Road demand exceeds capacity at times and at key pinch points along the road network

More people are travelling to, from and around the North Shore for work each day. Figure 10 shows that the North Shore has added more than twice as many jobs than working-age residents since 2011. This has resulted in more workers from elsewhere in the region commuting to work on the North Shore. The actual number of workers may be higher given fluctuations in construction-related traffic.

The increasing number of people travelling through the North Shore (Figure 11) from Lions Bay, Squamish and other communities to get to work in other areas of Metro Vancouver, although comparatively small in number, further adds to the high traffic volumes and delays.

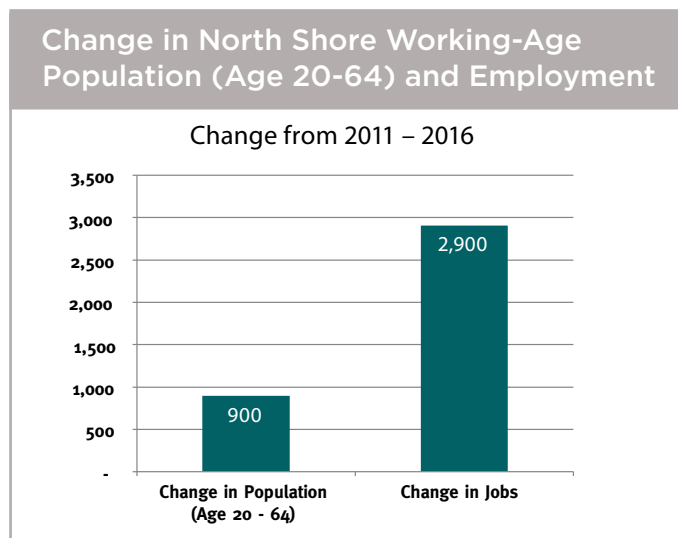


Figure 10 Source: Statistics Canada, Census 2011 & 2016

Generally, delays are more pronounced at bridgeheads (Figure 12), and in the afternoon rush hours. Travel reliability is further impacted by collisions and other incidents (e.g., road closures, weather, etc.). Improving transit access to and from the bridges, understanding and addressing the causes of incidents, improving incident clearing and providing alternatives to Highway 1 for east-west traffic on the North Shore will help reduce delays and improve mobility – particularly during rush hours.

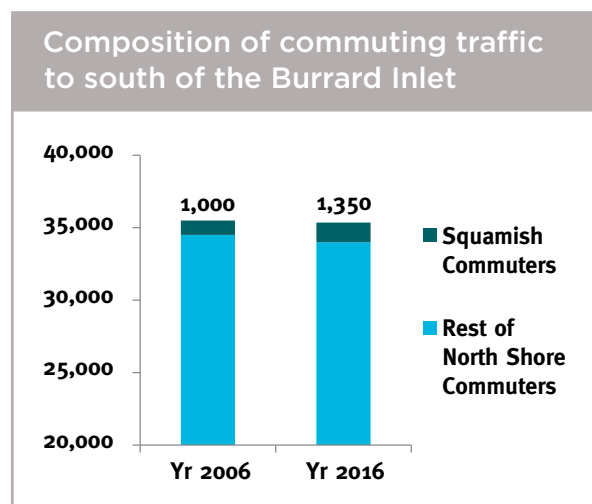


Figure 11 Source: Statistics Canada, Census 2006 & 2016

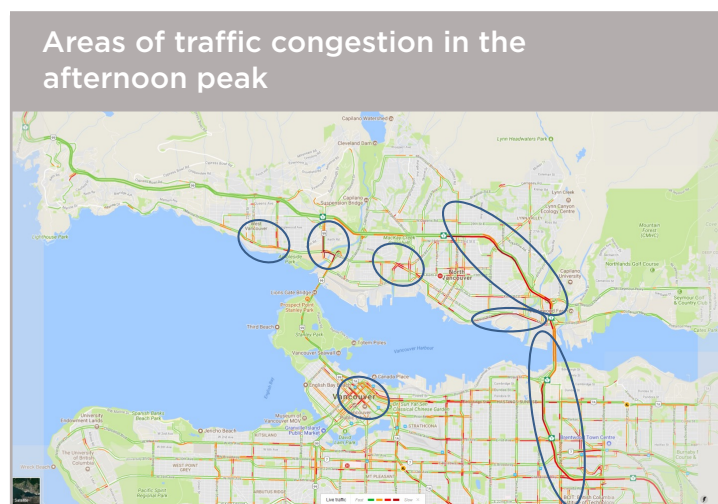


Figure 12 Source: Google Maps

3.5 Measures are lacking to manage road use

There are few measures in place to influence the mobility choices people make. Automobile access and road use are relatively undeterred and are leading factors contributing to congestion. Measures to influence demand could be very effective at encouraging people to make different travel decisions including encouraging trips outside of rush hours, and creating incentives to choose walking, cycling and transit for more trips.

Figure 13 shows the hourly profile of traffic volume on Second Narrows Bridge and corresponding travel time for an eastbound trip on the Upper Levels Highway into Vancouver. Typically, a five to 10 per cent drop in rush hour bridge traffic volumes could lead to a reduction in five to 10 minutes of travel time (Figure 13).

Variation in travel time and corresponding traffic volume on Second Narrows Bridge trip for a typical workday

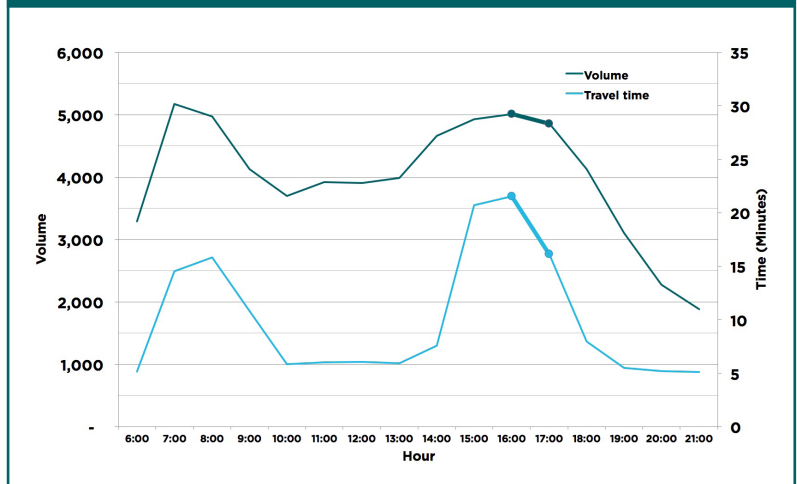


Figure 13 Source: BC MOTI and Google API

Fast, frequent and reliable transit service connecting the North Shore to the regional transit network and major regional destinations, along with demand management programs, can help accomplish reductions in traffic volumes and thereby reduce delays for people.

Demand management programs include a variety of actions, such as managing the parking supply, preferential parking treatment for car share and high-occupancy vehicles, dynamic messaging to provide motorists with advance information on commute times or incidents, forming carpools, offering incentives to encourage use of sustainable modes, and mobility pricing, among others. Such programs need to be planned and adopted across communities including schools, businesses, employers, and all levels of government.

In conclusion, many factors affect access and mobility on the North Shore. There is not one cause of congestion on the North Shore and there is also not one solution. No single project will meet all our stated objectives, and the best results will come from a coordinated approach consisting of:

- Reducing reliance on Highway 1 for local trips by creating more east-west travel options.
- Improving transit service, and infrastructure for transit, cycling and walking to make them viable alternatives to the auto for more trips.
- Addressing congestion at key pinch-points, particularly North Shore bridgeheads.
- Placing a high priority on integrating land use and transportation including focusing future development within town centres and along the Frequent Transit Network.
- Implementing programs to encourage behavioural change and reduce reliance on driving.

RECOMMENDATIONS FOR IMPROVING ACCESS AND MOBILITY

No single project will resolve access and mobility challenges on the North Shore. The best results come from a cross-jurisdictional and multi-pronged approach that coordinates transportation and land use planning to improve transportation options, increases the competitiveness of walking, cycling and public transit, and encourages behavioural change.

Our recommendations build on current commitments from all partners including actions contained in municipal plans, provincial improvements, and regional transit and transportation investments. The recommendations are also presented within a regional context that requires consideration of regional growth management, the Regional Transportation Strategy, mobility pricing, and emerging social and technological trends.

This section begins with a review of some frequently suggested ideas for transportation improvements, followed by recommendations for joint action to help improve access and mobility on the North Shore.

4.1 Screening of frequently suggested ideas

During the INSTPP process we considered several popular suggestions, some of which show promise to improve access and mobility while others do not address the stated transportation objectives. These are reviewed in the following section:

4.1.1 Frequently suggested ideas that do not meet the stated objectives

Add more lanes to our existing bridges

The feasibility of expanding either of the Second Narrows Bridge and the Lions Gate Bridge has been evaluated by the Government of BC. Neither bridge can be expanded due to structural limitations, and there are also no immediate plans for replacing either bridge. Any future plans for bridge replacement will need to address the transportation benefits, opportunities for dedicated bus lanes, and the impacts on adjacent communities.



Replace one of the existing bridges with a wider bridge

Building a new wider bridge to replace one of the existing bridges would help relieve congestion in the first few years of operation but would ultimately increase congestion because more people would use a car to travel to and from the North Shore. It would also require an expansion of the road network to connect to a wider bridge with more traffic lanes, resulting in potential impacts to the livability of nearby communities. Bridge replacement may be considered in the future, and the potential change in capacity will need to be evaluated along with additional transit and road network improvements, the best allocation of capacity to different modes and potential socio-economic impacts.



Adapt the CN Rail Bridge to include transit, walking and cycling

The CN Rail Bridge cannot be used for buses or bikes because part of the bridge raises and lowers to accommodate marine traffic; it is also most often in the raised position. Future planning to replace the CN Rail Bridge should address the potential for transit and multimodal transportation, in addition to rail transport requirements.



Source: Alex533/Shutterstock.com

Create a bus-only lane on the bridges

Dedicating a lane on one or both bridges would increase congestion more than it relieves it. Our analysis shows that delays are primarily due to bottlenecks at the bridgeheads rather than on the bridge decks. Improving transit priority and access at the bridgeheads, where feasible, will significantly improve transit reliability and travel time. Improving incident response and management



on the bridges will also help to reduce traffic delays. Any future plans to replace or widen either of the bridges should consider the opportunity for dedicated bus lanes.

Build gondolas between Phibbs Exchange, Capilano University and Maplewood

While gondolas can play a role for transportation in cities, especially where there are difficult physical barriers, our analysis shows that the costs of this technology would be high. The analysis also showed that a gondola would not create considerable travel time savings compared with using buses on the existing roads, and it would require an additional transfer for most customers. This idea could be reviewed again if the road reliability in the area deteriorates significantly.



Source: Shutterstock/Ingus Krukltis

4.1.2. Frequently suggested ideas that can help improve access and mobility

Two options that many stakeholders asked about were mobility pricing and providing rapid transit across Burrard Inlet to the North Shore. Both options are addressed in our recommendations and are highlighted because of the high level of interest.

Mobility pricing

The Mobility Pricing Independent Commission submitted its report on regional mobility pricing in May 2018. This study, along with our modelling and analysis, identified pricing as a highly effective tool to reduce congestion to/from and on the North Shore. We recommend the North Shore partners work collaboratively to participate actively in ongoing discussions about the future of mobility pricing for the Metro Vancouver region.



Provide rapid transit to and in the North Shore

Rapid transit is being implemented starting in 2019 with the new Marine-Main B-Line rapid bus service. Additional B-Lines services are planned for the North Shore in the Phase 3 Mayors' Council 10-Year Vision. Success of the B-Line services and associated ridership growth will lay the foundation for higher levels of rapid transit (possibly rail rapid transit).

Higher levels of rapid transit were examined for two main corridors:



1) Rapid transit crossing Burrard Inlet in the vicinity of Second Narrows to connect the North Shore with SkyTrain in east Vancouver:

Our analysis showed that ridership would be low on a rapid transit line connecting to the area south and east of the Second Narrows Bridge because of the dispersed development it would serve.

2) Rapid transit crossing Burrard Inlet in the vicinity of the SeaBus route to connect Lonsdale City Centre with SkyTrain in downtown Vancouver:

Our initial review indicated this connection would provide more transportation choice and attract more transit ridership. Some of the new transit ridership would come from a shift from automobile use, but most of the increase would be from new trip patterns. For example, a North Shore resident who shopped locally might shift their activity to downtown because of improved transit accessibility and vice versa. While rapid transit would offer more choice for people, it may have little impact on bridge congestion. Additional benefits could, however, result from combining rapid transit with incentives to change travel patterns – leading to increased use of transit by existing commuters, particularly people travelling to the North Shore by car for work each day. Municipal partners have stated a preference for ‘rail’ rapid transit. Additional study on the benefits and impacts of a rapid transit – including how to cross Burrard Inlet – will be considered in the Regional Transportation Strategy, which is now underway.

Run passenger ferries between more places

This idea was studied in 2004 and it was found that there were few places where ferries would be feasible. Ferry service works best when crossings serve water-facing land use and are not parallel to the shore or duplicated by a bridge. The study identified a number of key challenges, including high costs for fuel, development of suitable docking facilities, poor connections with existing transit service and lack of compatible land use along the waterfront.



Source: Shutterstock/Ceri Breeze

Municipal partners expressed interest in exploring the idea of expanding the use of passenger ferries to provide more options for crossing Burrard Inlet, particularly in the event of incidents that preclude the use of the bridges. It was noted that other coastal cities successfully utilize waterways for transportation. The INSTPP recommendation is to update the 2004 study to reassess the feasibility of additional passenger ferry service to get people to, from and across the North Shore.

4.2 Recommendations to Improve Access and Mobility

Recommendations for improving access and mobility are presented in the following discussion. These include ongoing collaboration by all INSTPP partners, and recommendations for joint action to improve travel time reliability and travel options.

The Action Plan, presented in Section 5, identifies priorities for the next 12 months to guide program implementation.



Key Area #1. Establish a framework for ongoing collaborative planning and decision-making.

1.1 The INSTPP Steering Committee should establish a governance structure to address congestion and improve access and mobility of people and system reliability that consists of:

A **North Shore Intergovernmental Steering Committee** with a formal connection to Councils and other decision authorities. The committee should also include elected representatives or their designates and representatives from each partner agency. The Steering Committee would work collaboratively on joint actions to improve access and mobility, engage adjacent local governments, stakeholders and the public for input, and report back to their representative elected bodies as needed.

Recommended partner agencies include but are not limited to:

- Province of British Columbia (Ministry of Transportation and Infrastructure)
- Government of Canada
- TransLink
- City of North Vancouver
- District of North Vancouver
- District of West Vancouver
- Squamish Nation
- Tsleil-Waututh Nation

A **North Shore Transportation Leadership Committee** consisting of senior staff leaders from each organization who have responsibility for decisions and commitments that affect transportation and who have a direct link with Steering Committee representatives. The Committee commits to shared decisions and actions that address congestion and improve access and mobility – including funding agreements, policy alignment and clear project leadership – and ensures collaboration among all supporting staff and committees.

More detailed terms of reference, including membership, mandate, meeting frequency and operating principles, will be required once the decision is made to proceed.

1.2 The INSTPP Steering Committee should commit to making decisions on planning and transportation matters that address the following key objectives:

1. Improving overall person travel time reliability.
2. Improving transit service reliability, efficiency and connections.
3. Enhancing coordination of land use and transportation planning and decision-making across jurisdictions.
4. Achieving shifts to sustainable travel modes that reduce peak vehicle-kilometres-travelled through programs and policies that encourage people to make more sustainable travel decisions.

2

Key Area #2. Jointly advance and implement near-term transportation improvements.

Partner agencies have already committed to a number of near-term transportation improvements that address the current transportation challenges on the North Shore.

2.1 The Ministry of Transportation and Infrastructure continue to improve personal travel time reliability on existing roads and bridges with actions to:

- Complete the Lower Lynn Improvement project on the Upper Levels Highway to improve travel time reliability; and review long term plans for the interchange (beyond the current phases of the project), including additional infrastructure improvements when warranted and feasible.
- Complete a technical review to determine transit priority measures around the bridgeheads of the Lions Gate and Second Narrows Bridges, and on connecting arterial roads, to free transit passengers from congestion and to ensure that travel by frequent transit service is quick and reliable.
- Investigate if current roadway design and infrastructure can be improved to increase safety, and to consider options to expedite incident clearing on the North Shore bridges and highways.
- Support a new inter-regional bus service between Squamish Lillooet Regional District and Metro Vancouver, connecting with the TransLink system and offering an alternative to car travel.
- Explore the potential to improve access to Highway 1 for cyclists.

2.2 The Intergovernmental Steering Committee commit to immediate and joint action on near-term projects and programs to improve walking, cycling, transit and local goods movement within the North Shore and across Burrard Inlet.

We recommend local governments partner and address funding necessary to:

- Implement transit priority measures, where feasible, including bus lanes, queue jumpers and signal coordination, and ensure these measures are in place before the launch of the Marine-Main B-Line in 2019.
- Develop and implement other improvements identified in local plans, as discussed and agreed to in SWG work sessions.

We recommend TransLink work with partner agencies and other stakeholders to:

- Implement a new, express bus service between Phibbs Exchange and the SkyTrain network, crossing the Second Narrows Bridge, beginning with a rush hour service to assess demand, working with local government partners to reprioritize timing and transit resources.

- Explore other new bus services focusing on advancing the North Shore Area Transit Plan (NSATP) long-term FTN concept.
- Improve or extend both directions of transit priority south of Burrard Inlet, working with City of Vancouver (e.g., Georgia St, Powell St and East Hastings St), and the City of Burnaby (e.g., Willingdon Ave).

2.3 The Intergovernmental Steering Committee work with businesses, the development community and others in the private sector and public institutions to achieve sustainable behaviour changes.

- The partners jointly fund additional resources to plan and launch more intensive outreach and education efforts, such as TravelSmart, focusing on:
 - A coordinated North Shore demand management strategy to influence and support decisions by institutions, businesses and individuals that will improve person access and mobility including incentives such as employer-provided fare subsidies, encouraging employees to walk, cycle and take transit, particularly where there are new services, journey to school programs, and incentives for off-peak travel, etc.
 - Implementing a public awareness program to encourage behavioural change by informing members of the public how they can make travel decisions that benefit them and do not add to congestion.



Key Area #3. Jointly advance and implement long-term transportation solutions to improve access and mobility.

3.1 The Intergovernmental Steering Committee coordinates the North Shore's participation with TransLink on the RTS update, including long-term solutions across the Burrard Inlet that prioritize people and local goods movement over the movement of vehicles, with a focus on:

- Evaluating the benefits and costs of, and conditions for rapid transit between the North Shore and Burrard Peninsula, connecting to the regional rapid transit network, and focusing on connecting Lonsdale City Centre with Vancouver's metropolitan core.
- Evaluating the rationale for and conditions under which there should be increased funding for TransLink cost-sharing programs (e.g., roads, cycling, walking to transit).
- Evaluating the conditions that would justify inter-regional rail service between Squamish and Metro Vancouver.

3.2 The Intergovernmental Steering Committee collaboratively develop and allocate resources, including partnerships, to implement and advance:

- Investments in frequent transit services and supporting infrastructure to improve reliability, speed and attractiveness.
- Improvements to and completion of the pedestrian and cycling networks to make walking and cycling the preferred modes within town centres and along the Frequent Transit Network and to connect paths into one complete network across the North Shore.
- Lower Level Road completion, connecting Marine Drive to the west and West 1st Street to the east. Additionally, evaluate the potential to connect further east by providing a new major east-west road connection across the North Shore (i.e., Barrow-Spicer corridor).
- Further investments to make roadway infrastructure more complete and resilient, including improved east-west connections, more efficient traffic operations such as coordinated signals, parking management and improving access for transit, cycling and walking.
- Developing a shared North Shore perspective and engagement in ongoing discussions and planning about regional mobility pricing as one means to achieving transportation objectives within the North Shore.
- Review the potential for adding park-and-ride capacity at suitable locations.
- Updating the 2004 study of passenger marine ferries as a means for providing more travel choices for people travelling to, from and across the North Shore. The study update should address the feasibility, benefits/costs, and opportunities for partnering to implement an expanded passenger ferry service.
- Develop and implement a plan to ensure appropriate transit operations facilities to deliver North Shore service.

4




Key Area #4. Coordinate land use and transportation.

4.1 The North Shore local governments commit to collaborative action on land use and transportation planning that promotes access and mobility without increasing demand for driving, aligning with regional plans and creating conditions that can support growth in transit use toward higher capacity transit investments, including:

- Aligning and coordinating transportation objectives and land use decisions across the entire North Shore, in a regional context, sufficient to support future large investments in transit.
- Developing mixed-use communities with new jobs and housing in approved, existing local areas and town centres and along defined Frequent Transit Network (FTN) corridors, over all other locations.
- Actions that make walking, cycling and transit more competitive, focusing within and between town centres, and protecting rights-of-way.
- Actions that facilitate reduced auto use and more efficient use of the transportation network.
- Committing to and implementing integrated design principles for centres that make walking, cycling and transit competitive and fully integrated.
- Prioritizing infrastructure investments that support the movement of people and local goods, in designated corridors.
- Finding mechanisms to advance transit service connecting to areas that have not yet reached full development.
- Using available policy tools to discourage development outside target areas.
- Developing a coordinated North Shore Workforce Housing Strategy, aligned with transit investment.
- Developing a coordinated plan to establish a complete network of protected and separated walking and cycling facilities for transport.
- Completing missing east-west links by optimizing operations for roads and cycling, and by revisiting potential new transit services.
- Committing to evidence-based decision making.

Actions to improve access and mobility need to start right away. The Action Plan, outlined in the following table, recommends priorities that should be initiated over the next 12 months to maintain INSTPP momentum. We also identified the lead group or agency to take on each task, as well as a proposed time frame.

The future of INSTPP requires a governance model to take responsibility for ongoing collaboration and implementing joint actions. Until the governance model is established, it is recommended that the Staff Working Group continue to provide interim leadership and support.

Recommendations:	Lead	Jul-Sep 2018	Oct-Dec 2018	Jan-Mar 2019	Apr-Jun 2019
INSTPP Management Roles (Post July 2018) <ul style="list-style-type: none"> Steering Committee (current) – continues until new governance is in place. Staff Working Group (SWG) – continues on an interim basis until the new governance is in place. A new Chair would be appointed to act as the staff lead and spokesperson for the SWG. North Shore Intergovernmental Steering Committee (NSISC) – replaces the Steering Committee in the new governance model. North Shore Transportation Leadership Committee (NSTLC) replaces the interim SWG once the governance structure is established. 					
That the INSTPP Steering Committee, with support from staff representatives from the SWG, present recommendations to each government for endorsement and action that includes: <ul style="list-style-type: none"> Moving forward with implementation of current commitments that provide cross-jurisdictional benefits. Developing and implementing a communication program to promote the results of the INSTPP process, including facts about the causes of, and options for improving, mobility. Advance recommendations to establish the permanent Governance model (below). 	Steering Committee				

Recommendations:	Lead	Jul-Sep 2018	Oct-Dec 2018	Jan-Mar 2019	Apr-Jun 2019
Establish a 'scorecard' for measuring and evaluating progress on INSTPP recommendations.	SWG (Interim role)				
Develop evaluation metrics to measure/ evaluate the performance of the North Shore multi-modal transportation system.	SWG (Interim role)				
Develop an initial progress report on INSTPP Year 1.	NSTLC				
Integrated North Shore Transportation Governance					
Partner agencies should: <ul style="list-style-type: none"> Establish a North Shore Intergovernmental Steering Committee (NSISC), comprised of elected representatives to provide strategic oversight to transportation planning and decision making. Establish a North Shore Transportation Leadership Committee (NSTLC) with responsibility for planning, engagement, decisions and commitments that affect transportation. 	Steering Committee				
Transit Improvements Options					
Launch the Marine-Main B-Line in 2019 and collaborate on transit priority measures for the Marine-Main corridor, including signal prioritization, queue jumping and dedicated bus lanes where feasible.	TransLink NSTLC for transit priority				
Collaboratively develop and approve transit priority, signal coordination and access to bridgeheads for all transit serving the North Shore.	NSTLC				
Support TransLink as it implements transit service and infrastructure improvements committed in the Phases 1 and 2 Investment Plans of the Mayors' Council 10-Year Vision (see Appendix B). Determine how to accelerate some Phase 3 projects by potentially partnering with others to fund additional B-Line service (e.g., Lynn Valley Centre to Downtown Vancouver, Metrotown to Capilano University).	TransLink NSTLC				

Recommendations:	Lead	Jul-Sep 2018	Oct-Dec 2018	Jan-Mar 2019	Apr-Jun 2019
Support TransLink as it completes the assessment of a new express bus service via Second Narrows to connect to SkyTrain in Burnaby. Also, explore the feasibility and benefits and buses on shoulder lanes for freeway segments.	TransLink				
Participate proactively in TransLink's update to the Regional Transportation Strategy (RTS) to: <ul style="list-style-type: none"> Evaluate rapid transit options for the North Shore, including the feasibility and technologies to extend rail rapid transit from downtown Vancouver across Burrard Inlet to the North Shore, connecting at Lonsdale Avenue. Evaluate options for expansion of transit service, including the Frequent Transit Network (FTN). 	NSTLC				
Support a new inter-regional bus service between Squamish-Lillooet Regional District and Metro Vancouver.	NSTLC/ Province				
Road Network Management					
Encourage partner agencies to implement supportive road network projects that are already designed, approved and/or funded; work collaboratively, where appropriate, to expedite implementation.	NSTLC				
Seek funding to complete the Lower Level Road connecting Marine Drive to the west and West 1st Street to the east, and evaluate the feasibility of the east-west Barrow-Spicer connection underneath the Second Narrows Bridge.	Province				
Work with the Province to investigate opportunities to increase safety and expedite incident clearing on North Shore bridges and highways.	NSTLC				
Investigate the potential benefit of dynamic message signs and advance travel information systems to provide motorists with advanced information on commute times or incidents to aid in route selection.	NSISC				

Recommendations:	Lead	Jul-Sep 2018	Oct-Dec 2018	Jan-Mar 2019	Apr-Jun 2019
Improve and complete the pedestrian and cycling networks to make walking and cycling the preferred modes within town centres and along the FTN, including consideration of a coordinated bike share program across the North Shore.	NSTLC				
Encourage the federal government to assess the status of the Second Narrows CN Rail bridge, including lifespan and options for a replacement to address North Shore transportation needs, including walking, cycling and transit.	NSISC				
Demand Management Programs					
Develop a coordinated and cross-jurisdictional program for parking management to reduce barriers to transit and traffic flow, particularly during peak travel periods.	NSTLC				
Develop a proactive and coordinated North Shore-wide program that works with schools, businesses and employers to encourage sustainable travel behaviour.	NSTLC				
Establish a North Shore cross-jurisdictional approach, and actively participate in ongoing regional discussions on mobility pricing as an option for managing demand and which has a significant impact on reducing congestion.	NSISC				

5.1 Keeping Track of our Progress

Measuring our progress against the stated objectives is a priority. To do so, we recommend annually evaluating both our near and long-term actions based on the following metrics:

- Travel time reliability across North Shore bridges during peak travel periods
- Total daily auto volume across Burrard Inlet
- Transit mode share of trips across Burrard Inlet during peak travel periods
- Transit ridership to, from and within the North Shore
- Number of affordable (to be defined) housing units in the North Shore
- Number of new residential and office units locating within and outside of North Shore town centres
- Number of new residential and office units locating within and outside of 400 metres of the Frequent Transit Network
- Ratio of new jobs and new housing units within the North Shore town centres and on the North Shore overall
- Traffic incident rate and severity

In the longer term (over a three- to five-year period), actions need to be evaluated within the broader regional transportation and land use policy objectives. Longer term evaluation metrics from census data, surveys and the Regional Trip Diary include:

- Number of people and jobs within and outside of North Shore town centres
- Number of affordable (to be defined) housing units in the North Shore
- Proportion of residents who live and work within the North Shore town centres
- Number of jobs North Shore residents can access within 30 minutes travel time by alternative modes (transit, cycling, walking)
- Proportion of employees who live and work on the North Shore
- Vehicle kilometres travelled per capita
- Proportion of residents who live and work along the Frequent Transit Network
- Mode share of trips by walking, cycling and transit

Evaluation metrics and monitoring methods will be confirmed and developed in more detail in the first year of implementation.

APPENDIX A – TERMS OF REFERENCE

(UPDATED APRIL 2018)*

PURPOSE

To enable greater cross-jurisdictional collaboration and provide an integrated transportation approach for the North Shore that is environmentally progressive, values safety, and improves the movement of people and goods, and respects First Nations' interests.

SCOPE

1. Complete a comprehensive assessment of the transportation needs of the North Shore and gaps in meeting the needs for both existing and long-term horizons;
2. Identify joint opportunities for short-term transportation improvements on the North Shore.
3. Develop a collective long-term transportation framework for the North Shore between multiple transportation agencies on the North Shore.
4. Enable a multi-level multi-agency forum for the sharing of transportation and planning information and transportation-related problem-identification and problem-solving.
5. In all work, take into account:
 - All modes of goods and people movement including, but not limited to: Rail, truck, personal vehicles, public transit, cycling, walking, water taxis (SeaBus).
 - Local community development plans on the North Shore and, if necessary, identify where changes may be required to meet joint transportation objectives.

PARTICIPANTS

Steering Committee¹

- Government of Canada
- Government of BC
- City of North Vancouver
- District of North Vancouver
- District of West Vancouver
- TransLink
- Squamish Nation
- Tsleil-Waututh Nation

Chair: Elected by Committee

Staff Working Group²

- BC Ministry of Transportation & Infrastructure
- City of North Vancouver
- District of North Vancouver
- District of West Vancouver
- TransLink

Chair: External consultant

* The scope of work in the updated Terms of Reference was expanded significantly to include additional planning, research, and workshops with the Steering Committee, Staff Working Group, North Shore Congress and meetings with City Councils.

¹ The Steering Committee will consist of one elected official or senior executive representing each participating agency. The Steering Committee will provide vision and direction for the Staff Working Group to pursue and develop proposals for.

² The Staff Working Group will be comprised of the North Shore Staff Transportation Committee and up to three senior staff representatives each from the BC Ministry of Transportation and Infrastructure and TransLink.

WORK PLAN

TransLink shall work with the external consultant to develop a more detailed work plan that focuses on the assessment of the transportation needs of the North Shore, working with the Steering Committee to shortlist options, and producing a final collective transportation framework by June 15, 2018. This work plan is subject to approval by the Steering Committee.

BUDGET & RESOURCES

TransLink shall provide overall coordination and logistical support. Each Staff Working Group participating agency is expected to contribute staff resources in the form of engineering and planning support as required. In addition, an estimated total budget of \$80,000 for external consulting support shall be funded as follows: 20% from each municipality and 40% from TransLink.

VOTING

Decisions will be made by consensus.

QUORUM

Steering Committee: Minimum five agencies represented.

DISCUSSION GUIDE

Introduction

The issue of transportation and road congestion on the North Shore continues to grow, impacting residents, commuters, businesses, students, services, and quality of life. Congestion has reached such critical levels that the TransLink Mobility Pricing Commission identified one of the major traffic hotspots in Metro Vancouver as being “travel to, from and around the North Shore – in every direction”.

It is recognized that even with the full implementation of the Mayors' Council's 10-year Vision as well as other transportation improvements by the municipal and provincial governments, the region will continue to grow and need further transportation investments and policies. The North Shore, because of its geography, topography, and existing transportation network, is particularly experiencing considerable transportation challenges including significant road congestion and a lack of competitive sustainable options for some demands. There are emerging political and staff level discussions around addressing the short-term and long-term transportation needs of the North Shore with urgency.

Given the desire of the new Provincial government to proactively work with local governments to identify a long-term transportation vision for the region and that in 2018 TransLink will start to contemplate the next round of transportation improvements for the region as part of the update to the 30-year Regional Transportation Strategy (RTS), it is timely that an early dialogue about the transportation needs of the North Shore takes place now in order to provide comprehensive and detailed input for the RTS process and, where possible, to facilitate early actions as on-going service improvements. This memo outlines an approach for an integrated, structured, and in-depth approach to properly understand the problems and identify potential solutions for further evaluation.

Background

Multiple transportation agencies have planning responsibilities for the multi-jurisdictional and multi-modal transportation network in the North Shore. The City of North Vancouver, the District of North Vancouver, the District of West Vancouver, TransLink, and the Ministry of Transportation and Infrastructure all have or are undertaking planning projects or processes for addressing transportation issues in the North Shore. The North Shore Staff Transportation Committee has developed a list of transportation priorities which include examination of multi-modal options to move more people across the Burrard Inlet as well as various road and transit improvements within the North Shore. Another example of initiatives that are already underway is the New Highway 1 Lynn Creek Connectivity Project being partnered on by the District of North Vancouver, Provincial and Federal governments. TransLink is also looking at various improvements of the transit network in the North Shore. It is important that all the parties work together to develop an integrated and comprehensive approach which provides both near-term and long-term transportation solutions for that part of the region.

As noted earlier, there is heightened interest on the topic and a number of conversations are taking place between different agencies. It is proposed that a structured and coordinated approach to this collaboration be convened to maximize the value of the information and ideas that are being shared. It is not the intent of this process to advance solutions independently from existing planning and decision-making processes. Rather, it serves to act as a catalyst to drive collaboration that will result in transportation solutions for the North Shore while providing an additional multi-level forum for information-sharing and focused, joint problem-identification and solving amongst the various agencies.

Mission

The Integrated North Shore Transportation Planning Process aims to enable greater cross-jurisdictional collaboration to provide an integrated transportation approach for the North Shore that is environmentally progressive, values safety, and improves the movement of people and goods.

In particular, the Integrated North Shore Transportation Planning Process will:

- Complete a comprehensive assessment of the transportation needs in the North Shore and gaps in meeting the needs for both existing and long-term horizons;
- Provide for joint definition of objectives to be met by the transportation system;
- Enable all partner agencies to suggest and evaluate potential solutions in all transportation modes;
- Evaluate and produce a shortlist of short term and long terms options which could be further advanced by appropriate lead agencies as part of their planning and decision-making processes; and
- Produce a collective long-term transportation framework for the North Shore.

Proposed Structure and Roles

A two-tier structure is proposed to facilitate this dialogue, consisting of a Staff Working Group and a Steering Committee.

Steering Committee

The Steering Committee will consist of one elected official or senior executive representing each participating agency. The Steering Committee will provide vision and direction for the Staff Working Group to pursue and develop proposals for.

Proposals brought forward by the Staff Working Group will be presented to the Steering Committee, who will agree by consensus which recommendations will be pursued further. Consensus need only be reached between representatives from the governing bodies that are impacted by the proposal being discussed.

Each elected official will be responsible for returning to their respective governing bodies to advocate for commitment to advancing the proposal, especially where participation in the form of funding is required.

Although the recommendations and decisions arising from this process are non-binding, elected officials serving on the Steering Committee agree to participate in this process in good faith.

Steering Committee meetings shall be chaired by a member of the committee elected to do so at the first meeting.

Staff Working Group

The Staff Working Group will be comprised of the North Shore Staff Transportation Committee and up to three senior staff representatives each from the BC Ministry of Transportation and Infrastructure and TransLink. They will be tasked with the following mandate:

- Aim to improve the movement of people and goods on and off the North Shore as well as within the North Shore while taking into account local community development plans.
- Take into account transportation infrastructure for all modes including, but not limited to, single occupancy vehicles, high occupancy vehicles, public transit, cycling, walking, and more.
- Identify opportunities for transportation improvements throughout the North Shore both in the near-term and long-term.
- Provide proposals and recommendations to the Steering Committee based on data and modern day best practices that are free from political interpretation and influence.

Staff Working Group meetings will take place as often as agreed upon by consensus between Core Partner agencies or at the advice of the facilitator. All Core Partner agencies may participate in any Staff Working Group meeting, but a Staff Working Group meeting may take place even when not all Core Partner agencies are represented. The Staff Working Group will be facilitated by an external consultant, engaged specifically to ensure the Staff Working Group achieves its objectives.

Proposed Work Program

It is proposed that two workshops for the Staff Working Group and Steering Committee be convened as the major venue for this multi-agency dialogue, along with more frequent and in-depth meetings for the Staff Working Group as noted above. The two workshops will focus on discussions around the following topics, respectively:

1. Problem definition and what success should look like
2. Ideas generation and objectives development

The goal is to produce at the end of these discussions a short list of options which the Steering Committee would generally agree are reasonable candidates which should be explored more extensively and evaluated in the various programmatic planning processes that the agencies undertake. One specific outcome will be the assignment of a Lead Agency to each option (project) to carry on with subsequent planning work after this process is completed. For projects that are regional in nature, the evaluation and shortlisting of potential solutions as well as public consultation will be undertaken as part of TransLink's RTS or Area Planning processes. The short list of options would be assessed using a Multiple Account Evaluation approach which balances achievement of outcomes under appropriate user, economic, environment and social objectives.

Timing & Resources

It is proposed that the first workshop should take place early 2018. The second workshop should ideally occur roughly 8 to 10 weeks after the first one, to allow adequate time for the necessary planning work to take place. Compilation of the input and preparation of a final report(s) should be available in June 2018.

Each agency participating in the Staff Working Group as a Core Partner will contribute staff resources to support the work of the Integrated North Shore Transportation Planning Process. In addition, a budget of approximately \$80,000 shall be available for the engagement of external consulting resources as required.

Participating Agencies

The Integrated North Shore Transportation Planning Process will require the involvement of Core Partners and Special Partners. Core Partners are agencies that are required to participate in all aspects of this process in order for it to be successful while Special Partners are engaged on an as-needed basis.

	Steering Committee	Staff Working Group
Core Partners	<ul style="list-style-type: none"> • Government of Canada • Government of BC • City of North Vancouver • District of North Vancouver • District of West Vancouver • TransLink • Squamish Nation • Tsleil-Waututh Nation 	<ul style="list-style-type: none"> • BC Ministry of Transportation & Infrastructure • City of North Vancouver • District of North Vancouver • District of West Vancouver • TransLink
Special Partners <i>(list not exhaustive)</i>	<ul style="list-style-type: none"> • Transport Canada • Port of Vancouver • Various port businesses • Canadian National Railway • Metro Vancouver • Infrastructure Canada • Other municipalities and elected officials 	

MAJOR WORK COMPONENTS

There are four major components of work required, as described in the following paragraphs. Municipal staffing resources along with TransLink staffing resources and Ministry of Transportation Infrastructure staffing resources will be utilized as appropriate.

1. Overall process coordination

TransLink will guide and drive overall coordination, while external contracted services will be used to undertake the required tasks, including:

- i) Overall project management responsibilities including development of any cost-sharing arrangements, management of overall project schedule and scope to ensure alignment with agree-upon objectives, procurement for consulting resources, and supervision of consultants as required;
- ii) Consultation with key stakeholders to ensure the range of topics that need to be addressed as part of the dialogue are being captured by the process; and
- iii) Preparation for workshops and other supplementary meetings, including development of meeting agendas, compilation of meeting materials, coordinating with a professional workshop facilitator, documentation of meeting content, dissemination of information and reports, etc.

2. Transportation information, analytics and demand forecasting

External resources and Core Partner agency staff resources will be used to “define the problem” regarding traffic on the North Shore. This could include:

- i) Examining relevant data, applying transportation analytics, and applying the Regional Transportation Model (RTM) to objectively and comprehensively inform the problem definition aspects of the process;
- ii) Using data sources such as the trip diary, Google API, roadway traffic counts, Compass data, etc., to understand the characteristics of current travel demand; and
- iii) Using the RTM could provide estimates of overall future travel growth and patterns as well as demand for specific corridors or modes.

The key focus will be to establish an in-depth understanding of the travel demand of both trips made by residents of the North Shore as well as of other parts of the region into and out of the North Shore. This would capture information relating to origins/destinations, time of travel, duration of trips, mode choice, congestion experienced either on the road or transit network, safety concerns, etc. The differentiation of the travel market segments and identification of ‘pinch points’ in both the existing and future transportation network would shed much light on the kind of solutions that would meet the demand.

Given the lead time required to collect some of the data, TransLink has already commissioned a consultant assignment to obtain fall (September and October 2017) origin/destination data for trips using the Lions Gate and Second Narrows Bridges. Preliminary results should be available by the end of the year to provide important insights for the process.










3. Committee Meeting and Workshop facilitation

An external consultant shall facilitate the Working Committee meetings and multi-agency workshops in order for all agencies to focus on participating and to have the ability to provide input in a neutral setting. A detailed agenda for the workshops will be developed and vetted with lead agency staff beforehand and input provided in the workshops will be thoroughly documented and shared.

4. Transportation option scoping and high-level feasibility review

Engineering expertise will be engaged as needed to perform ‘fatal flaw’ screening of project ideas from a technical feasibility or a financial viability perspective. Considering past technical studies of various options may form part of this work. This will allow the process to focus only on potential options that are achievable.

APPENDIX B – PHASES ONE AND TWO OF THE MAYORS’ COUNCIL 10-YEAR VISION

Completing the 10-Year Vision for Metro Vancouver Transit & Transportation				
ENTIRE 10 YEAR VISION		APPROVED/UNDERWAY FUNDED		REMAINING INVESTMENTS UNFUNDED
		Phase One	Phase Two	Phase Three
 BUS SERVICE	<ul style="list-style-type: none">• 25% increase• 12 B-Lines• 10 new service areas	<ul style="list-style-type: none">• 10% increase• 5 new B-Lines• 5 new service areas	<ul style="list-style-type: none">• 8% increase• 2 new B-Lines• New service areas to be confirmed	<ul style="list-style-type: none">• 7% increase• 5 new B-Lines• Any remaining new service areas
 SEABUS SERVICE	<ul style="list-style-type: none">• 1 new SeaBus• 10-minute peak frequency; 15-minute all day	<ul style="list-style-type: none">• 1 new SeaBus• 10 minute peak frequency; 15-minute all day		
 HANDYDART SERVICE	<ul style="list-style-type: none">• 30% increase	<ul style="list-style-type: none">• 15% increase	<ul style="list-style-type: none">• 7% increase	<ul style="list-style-type: none">• 8% increase
 SKYTRAIN & WEST COAST EXPRESS (WCE)	<ul style="list-style-type: none">• 164 Expo/Millennium Line cars• 24 Canada Line cars• 10 WCE cars + locomotives• Upgrades of power and control systems, stations	<ul style="list-style-type: none">• 56 Expo/Millennium Line cars• 24 Canada Line cars• 2 new + 6 refurbished WCE locomotives• Upgrades to Expo/Millennium & Canada Line Stations and stations	<ul style="list-style-type: none">• 108 Expo/Millennium Line cars (including Broadway Extension)• Upgrades to Expo/Millennium Stations and systems	<ul style="list-style-type: none">• Upgrades to Expo/Millennium & Canada Line Stations• 10 WCE cars• Upgrades to Canada Line Stations and systems
 MAJOR PROJECTS	<ul style="list-style-type: none">• Millennium Line Broadway Extension• South of Fraser Rapid Transit (SOFRT)• Pattullo Bridge Replacement	<ul style="list-style-type: none">• Pre-construction of Broadway Extension• Pre-construction of Stage 1 of SOFRT (Surrey-Newton-Guildford LRT)• Design for Pattullo Bridge replacement	<ul style="list-style-type: none">• Construction of Broadway Extension• Construction of Stage 1 of SOFRT (Surrey-Newton-Guildford LRT)• Construction of Pattullo Bridge replacement (by the province)• Planning for Stage 2 of SOFRT (Surrey-Langley Line)	<ul style="list-style-type: none">• Construction of Stage 2 of SOFRT (Surrey-Langley Line)
 MAJOR ROADS NETWORK (MRN)	<ul style="list-style-type: none">• MRN upgrades: \$200M	<ul style="list-style-type: none">• \$50M (25% of Vision)	<ul style="list-style-type: none">• \$40M (20% of Vision)	<ul style="list-style-type: none">• \$110M (55% of Vision)
	<ul style="list-style-type: none">• MRN seismic: \$130M	<ul style="list-style-type: none">• \$32.5M (25% of Vision)	<ul style="list-style-type: none">• \$26M (20% of Vision)	<ul style="list-style-type: none">• \$71.5M (55% of Vision)
	<ul style="list-style-type: none">• MRN expansion: 1% annual increase + one-time 10% increase	<ul style="list-style-type: none">• MRN expansion: 1% annual increase + one-time 10% increase		
 WALKING & CYCLING	<ul style="list-style-type: none">• Regional Cycling: \$97M	<ul style="list-style-type: none">• \$30M (31% of Vision)	<ul style="list-style-type: none">• \$24M (25% of Vision)	<ul style="list-style-type: none">• \$43M (44% of Vision)
	<ul style="list-style-type: none">• TransLink-owned Cycling: \$34M	<ul style="list-style-type: none">• \$12M (35% of Vision)	<ul style="list-style-type: none">• \$9M (27% of Vision)	<ul style="list-style-type: none">• \$13M (38% of Vision)
	<ul style="list-style-type: none">• Walking Access to Transit: \$35M	<ul style="list-style-type: none">• \$12.5M (36% of Vision)	<ul style="list-style-type: none">• \$10M (29% of Vision)	<ul style="list-style-type: none">• \$12.5M (36% of Vision)
 TRANSIT EXCHANGES	<ul style="list-style-type: none">• 13 new or expanded transit exchanges	<ul style="list-style-type: none">• 4 updated transit exchanges		<ul style="list-style-type: none">• 9 upgraded transit exchanges
 MOBILITY INNOVATION	<ul style="list-style-type: none">• Integrated travel planning and payment• New technologies and services	<ul style="list-style-type: none">• Vanpool pilot• Innovation Lab to explore mobility concepts	<ul style="list-style-type: none">• Pilot, field test, and scale flexible, shared-use services	
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