

# AGENDA

## *COUNCIL WORKSHOP*

**Monday, February 4, 2019  
5:00 p.m.**

**Committee Room, Municipal Hall  
355 West Queens Road,  
North Vancouver, BC**

**Council Members:**

Mayor Mike Little  
Councillor Jordan Back  
Councillor Mathew Bond  
Councillor Megan Curren  
Councillor Betty Forbes  
Councillor Jim Hanson  
Councillor Lisa Muri



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**355 West Queens Road, North Vancouver**

### **AGENDA**

#### **1. ADOPTION OF THE AGENDA**

##### **1.1. February 4, 2019 Council Workshop Agenda**

*Recommendation:*

THAT the agenda for the February 4, 2019 Council Workshop is adopted as circulated, including the addition of any items listed in the agenda addendum.

#### **2. ADOPTION OF MINUTES**

#### **3. REPORTS FROM COUNCIL OR STAFF**

##### **3.1. INSTPP Priorities for the District of North Vancouver**

**p. 7-18**

File No. 16.8620.01/021.000

*Recommendation:*

THAT the District priorities as identified in the January 28, 2019 report of the Transportation Manager entitled INSTPP Priorities for the District of North Vancouver are endorsed;

AND THAT staff are directed to pursue these priorities for further study and/or implementation.

#### **4. PUBLIC INPUT**

(maximum of ten minutes total)

#### **5. ADJOURNMENT**

*Recommendation:*

THAT the February 4, 2019 Council Workshop is adjourned.

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## REPORTS

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**AGENDA INFORMATION**☐ Regular Meeting

Date: \_\_\_\_\_

☐ Other:

Date: \_\_\_\_\_



## The District of North Vancouver

### REPORT TO COUNCIL

January 28, 2019

File: 16.8620.01/021.000

**AUTHOR:** Steve Carney, PEng, PTOE, Transportation Manager**SUBJECT:** INSTPP Priorities for the District of North Vancouver**RECOMMENDATION:**

THAT Council endorse DNV priorities as identified, and direct DNV staff to pursue these priorities for further study and/or implementation.

**REASON FOR REPORT:**

The purpose of this Report to Council is to provide a high level review of INSTPP, its findings and recommendations, and to also request Council to endorse staff recommended DNV priorities and to direct staff to pursue these priorities for further study and/or implementation with the appropriate INSTPP partner agencies.

**SUMMARY:**

INSTPP has a mandate to develop a long-term multi-agency framework for the coordination of North Shore transportation planning. The INSTPP framework involves all levels of government on North Shore, and was established to identify joint actions to address congestion, with recommendations based on real data and current best practices.

**BACKGROUND:**

INSTPP was spearheaded by Bowinn Ma, MLA for North Vancouver-Lonsdale, in January 2018 to facilitate a collaborative approach to addressing the North Shore's transportation challenges. A Staff Working Group composed of transportation professionals from DNV, CNV, DWV, MoTI (Ministry of Transportation and Infrastructure), Vancouver Port Authority, and TransLink, and was tasked with identifying opportunities to reduce congestion. Oversight and policy direction was provided by a Steering Committee with representatives from all partner agencies.

**EXISTING POLICY:**

- Official Community Plan (2011)
- DNV Transportation Plan (2012)
- North Shore Area Transit Plan (2012)
- Regional Growth Strategy, Metro 2040 (2011)
- Regional Transportation Strategy (2013)

## ANALYSIS:

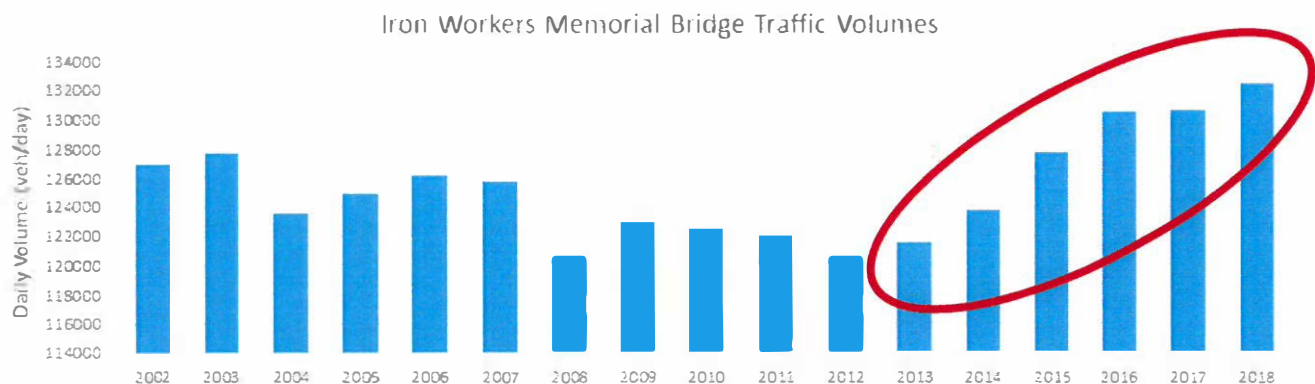
### Problem Identification

INSTPP determined that congestion on the North Shore is the result of a combination of key factors. These are 1) the North Shore land use is primarily car oriented, 2) Transit and alternative travel is not competitive with auto for most trips, 3) measures are lacking to manage road use, 4) road demand often exceeds capacity, and 5) the North Shore is characterized by an incomplete road network with many constraints, largely a result of mountainous terrain with bridge connections to the Lower Mainland.

### INSTPP Key Findings

As experienced by many North Shore commuters, Second Narrows Bridge traffic volumes have been going up. **Figure 1** shows traffic volumes over the Second Narrows Bridge from 2002 to 2018, and brings attention to the recent growth experienced since 2013 (circled in red). Note that volumes shown represent both westbound and eastbound directions.

Based on permanent count stations on the Second Narrows Bridge, growth in traffic volumes has been determined to be approximately 9% over the past five years (2013-2018). The bridge now carries over 132,000 vehicles/day during an average weekday. Daily traffic volumes during summer months have now reached over 140,000 vehicles/day. Of all Lower Mainland major bridges, only the Port Mann Bridge at 160,000 vehicles/day carries more traffic than the Second Narrows.

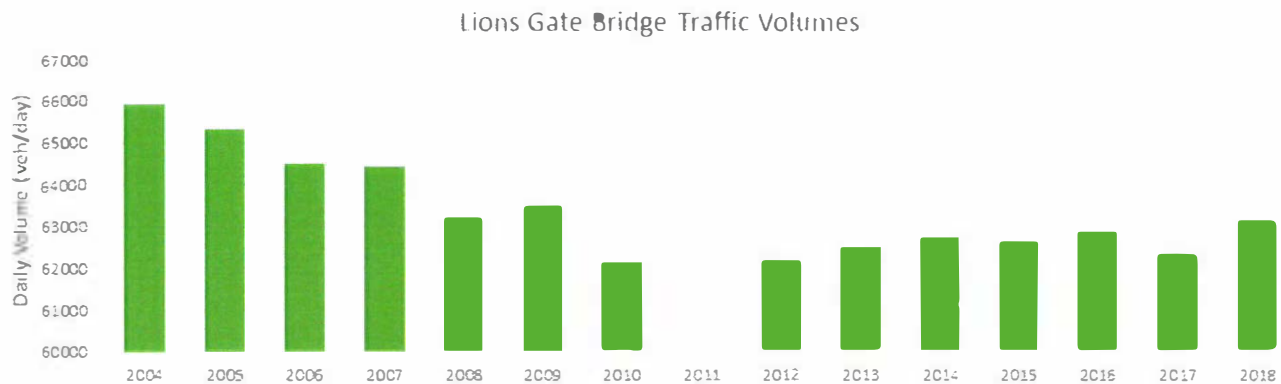


**Figure 1. Iron Workers Memorial Bridge Traffic Volumes**

This growth is likely a result of a combination of factors, including significant growth in the number of people commuting from Sea to Sky communities to the Lower Mainland, construction related traffic, and a growing number of people who commute to the North Shore for work from south of the Burrard Inlet. INSTPP concluded that from 2011-2016, the change in North Shore working age population (age 20-64) was only 900 people, while the number of jobs added on the North Shore over the same period was 2900 jobs. It is also noteworthy that the \$2.46B Port Mann Hwy 1 Bridge and associated 37km of highway upgrades opened on December 01, 2012.



As shown in **Figure 2**, Lions Gate Bridge volumes have been relatively stable over the past 5 years, averaging approximately 63,000 vehicles/day.



**Figure 2. Lions Gate Bridge Traffic Volumes**

The North Shore effectively provides three ways to cross the Burrard Inlet. These include TransLink's Seabus, the Lions Gate Bridge, and the Second Narrows Bridge. Analysis concluded that:

- Seabus primarily serves a concentrated Lower Lonsdale area to the downtown Vancouver peninsula;
- Lions Gate Bridge primarily serves the Lynn Valley, Capilano, CNV and DWV areas to the City of Vancouver; and
- Second Narrows has a more dispersed regional function, connecting Sea to Sky corridor, Horseshoe Bay ferry traffic, and the North Shore to Greater Vancouver, Highway 1/Fraser Valley, and the Canadian-US border.

The catchment areas of the three Burrard Inlet crossings are shown in **Figure 3**.

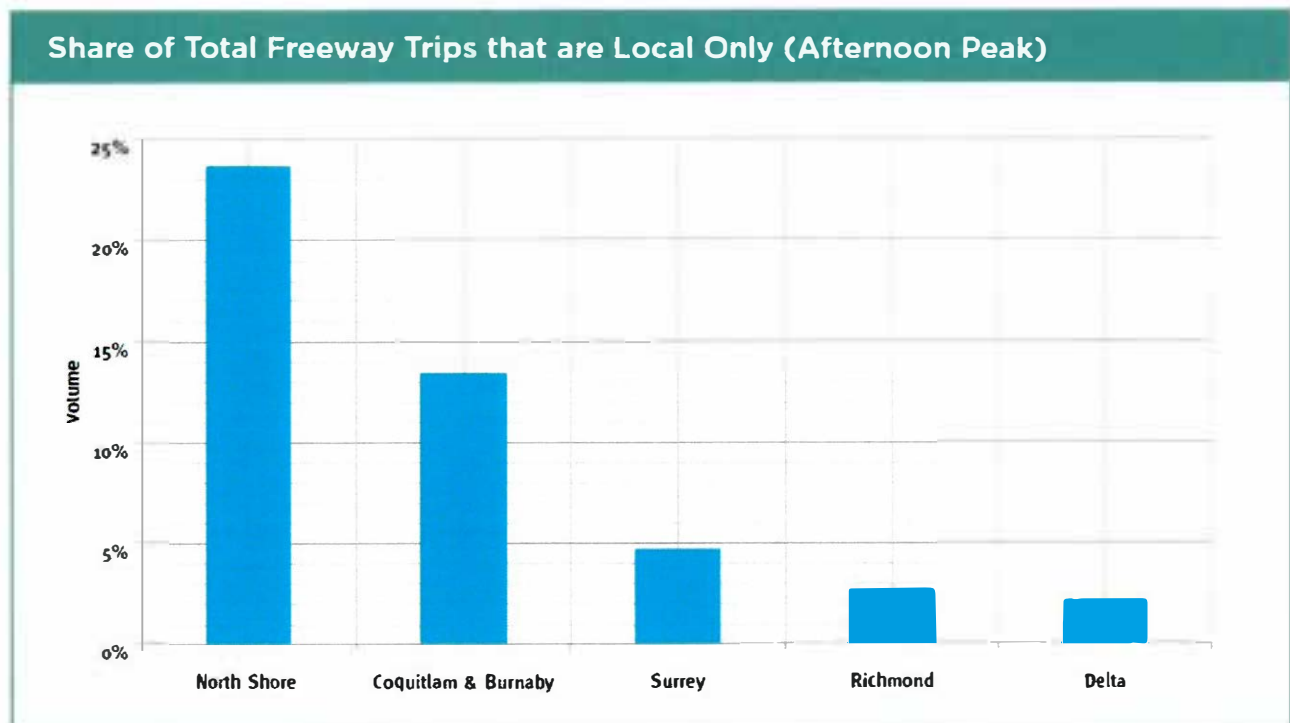


**Figure 3. Catchment Areas of the Three Burrard Inlet Crossings**

The Second Narrows Bridge also carries all truck traffic over the Burrard Inlet as trucks are prohibited from crossing the Lions Gate Bridge.

INSTPP also concluded that North Shore local trips account for almost 25% of Upper Levels traffic. As shown in **Figure 4**, this is much higher than other Lower Mainland municipalities. Generally speaking, the North Shore lacks a robust grid-based transportation system. Compounding this, North Shore communities are geographically centered on the highway system.

The tendency for local traffic to use the highway system for short intra-North Shore trips is the result of a relatively incomplete road network that offers few high-capacity east-west parallel arterials as competitive alternatives to the highway.

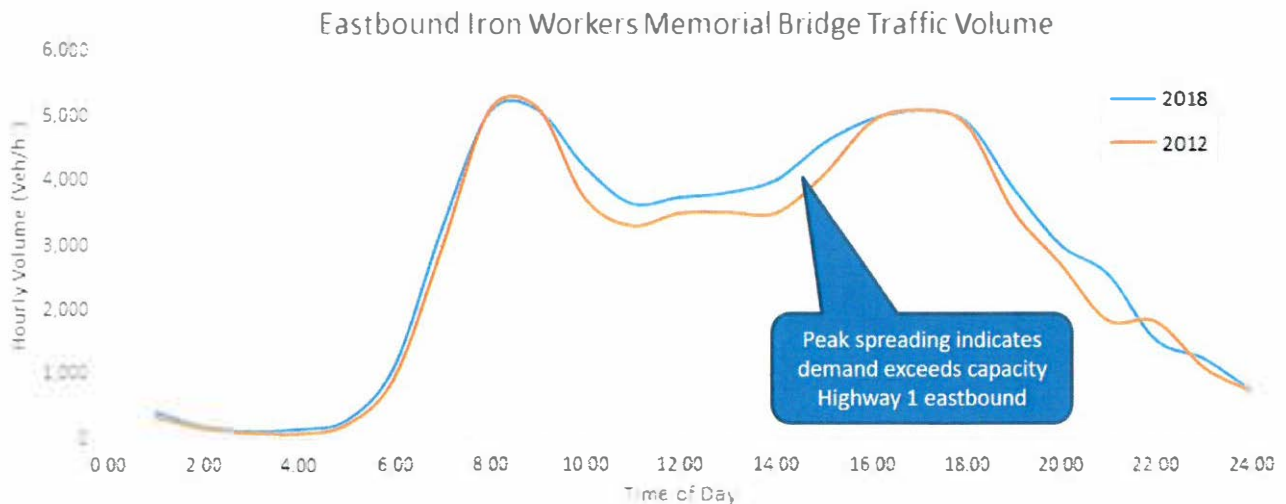


**Figure 4. Shore of Total Freeway Trips that are Local Only**

Analysis of the Second Narrows Bridge reveals that the bridge is now at capacity for many hours of the day under the current interchange configuration.

Peak spreading, a phenomenon where under congested conditions the peak traffic period begins to spread out over a larger portion of the day is now clearly observed for Highway 1 eastbound traffic. **Figure 5** shows how peak spreading has increased for eastbound traffic over the Ironworkers Bridge between 2012 and 2018.

Figure 5 also shows that peak hourly volumes have not increased since 2012. This indicates that the highway system is operating at maximum capacity during peak periods. Note that by reducing friction at interchanges and optimizing ramp configurations through the Lower Lynn Interchange improvements, it is expected that throughput capacity will increase by approximately 500 vehicle/hour (along with other east-west connectivity, Highway 1 westbound, and road safety benefits).



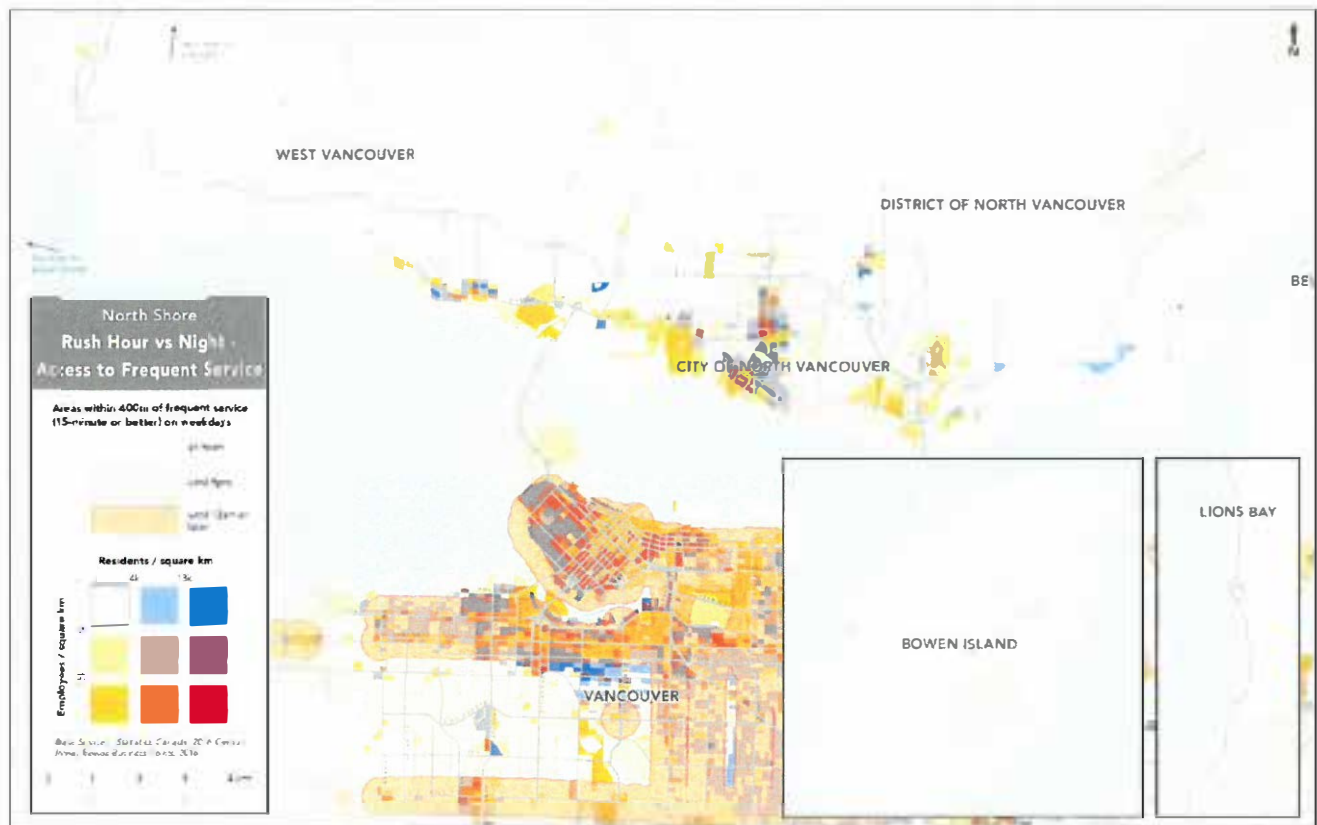
**Figure 5. Highway 1 Eastbound Ironworkers Memorial Bridge Traffic Volume**

Many factors are contributing to increased congestion and traffic across the Second Narrows Bridge, including but not limited to:

- Transportation and housing affordability are inextricably linked;
- More people are commuting to and through the North Shore for work (Squamish is among the fastest growing communities in BC, according to Statistics Canada); and
- The North Shore is poorly served by transit which is currently not competitive with auto-use.

Transit service on the North Shore is among the worst performing throughout Greater Vancouver based on information provided by TransLink. With the exception of Seabus service to the lower Lonsdale area, the North Shore is effectively 'severed' from the multi-billion dollar transit investments south of the Burrard Inlet.

Access to frequent (15-minute or better) transit service for Vancouver and the North Shore is shown in **Figure 6**. This figure shows that with the exception of the Lonsdale corridor in the City of North Vancouver, Marine Dr, Main St, Phibbs Transit Exchange, and Capilano University, the North Shore does not have access to frequent transit during even daytime hours. In contrast, the City of Vancouver is almost entirely served by frequent transit until 9pm, and has a majority of the City served until 12am (midnight) or later.



**Figure 6. Access to Frequent Transit Service**

### Future Network Performance

- Analysis completed in-house Vissim traffic simulation software
- Network represents completed Highway 1 Lower Lynn Interchanges for the year 2035
- Significant travel time reductions for some of the key routes around the interchanges
- Eastbound travel times across the interchanges reduced by 50%
- Model assumes that there are no incidents on Second Narrows, and no First Nations development

Note that with the exception of the Main St/Mountain Hwy intersection, the network is expected to perform at a very acceptable level of service post-completion of the Highway 1 Lower Lynn Interchange project. **Figure 7** shows the road network performance under future (2035) conditions.





**Figure 7. Future Network Performance (year 2035)**

Level of Service (LOS) is a performance metric used to describe traffic conditions. LOS A represents free-flow, uncongested conditions with no to minimal delay, while LOS F represents a condition where demand exceeds capacity, and queuing and delays are excessive. In road design, LOS C/D or better during peak traffic periods is generally considered acceptable, while LOS E/F during peak periods is undesirable and warrants improvement considerations.

## **INSTPP RECOMMENDATIONS**

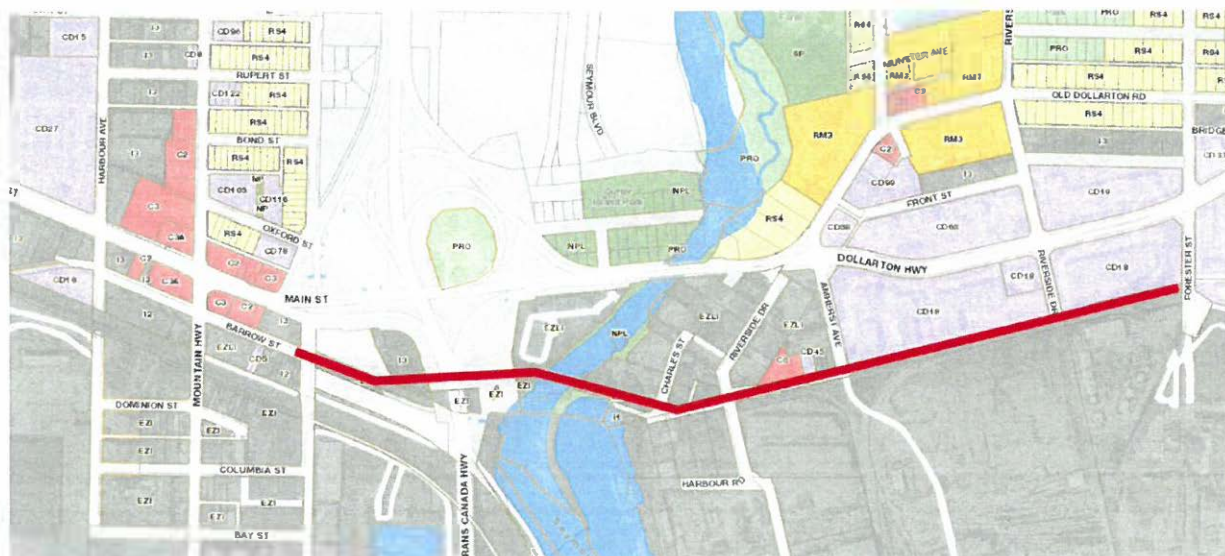
### **Transit Improvements**

1. INSTPP determined that transit infrastructure and frequency on the North Shore must be improved to make transit competitive with auto use. Transit infrastructure improvements could include a Highway 1 bus on shoulder lane eastbound down the cut in conjunction with express bus service across Second Narrows Bridge connecting to regional rapid transit.
2. It was recommended that future (Mayor's Council 10 year Vision Phase 2/3) B Lines are established to connect North Shore communities to regional rapid transit. INSTPP recommended that the Marine-Main B Line is implemented as planned under Phase 2 of the Mayor's Council 10 year Vision.
3. INSTPP recommended that a new bus service is introduced between Squamish and SkyTrain rapid transit in Vancouver.
4. It was also recommended that the opportunity for an expanded passenger ferry network linking key areas on the North Shore with Seabus is reviewed, and that the 2004 Passenger Ferry Service study be updated to consider current ridership

potential, benefit-cost analysis, and opportunities to integrate with North Shore waterfront redevelopment.

### Road Network Improvements

1. As part of the problem identification stage, INSTPP highlighted that the North Shore is characterized by an incomplete road network with many constraints. INSTPP recommendations for reducing congestion on the North Shore include facilitating a reduced reliance on Highway 1 for local trips by addressing gaps in the existing road network.
2. It was also recommended that incident/collision clearing on bridges was expedited through legislative change and improved towing capacity.
3. INSTPP recommended that the benefits of a new east-west Barrow St-Spicer Rd connector parallel to Main-Dollarton corridor be evaluated. This link is anticipated to better serve industrial areas and can provide an alternate route to Main-Dollarton under congested conditions. A potential Barrow St-Spicer Rd connection would be parallel to the CN rail line on the south side of the Main St/Dollarton corridor, and would span the Seymour River. This link is identified in the Maplewood Town Centre plan, and would serve to improve east-west connectivity and provide greater redundancy with the District's road network. A new road along this corridor could be integrated into the Maplewood Flood Protection Strategy, and would provide benefits to the Port by diverting traffic off of the Main-Dollarton corridor, improving Main/Mountain intersection and reducing congestion approaching the Second Narrows Bridge. With this connection, there is an opportunity to incorporate an AAA cycling facility. A new link could also facilitate a possible connection to an expanded passenger ferry service should a terminal be located in the Lynn Creek/Maplewood Town Centres. This Barrow St-Spicer Rd connection is shown in **Figure 8**.



**Figure 8. Barrow St-Spicer Rd Connection**

4. It was also recommended that the Highway 1 Lower Lynn interchange improvements are completed, and that transit priority measures are incorporated where appropriate. INSTPP also recommended upgrades to the Upper Levels portion of Highway 1 to reflect current geometric and safety standards.

**Land Use and Transportation Demand Management (TDM)**

INSTPP recognized the importance of integrating land use and transportation, and also the benefits of implementing TDM programs to encourage behavioral change.

TransLink modelled a mobility pricing scenario and found that this TDM measure was highly effective in reducing congestion. It was acknowledged however that any mobility pricing scheme would need to be a Provincial initiative and applied to the Greater Vancouver area, and could not effectively be implemented on a sub-regional basis. Pay parking is another tool that has been found to be effective in managing demand. Other TDM tools that have the potential to be effective on the North Shore include ride-share programs, expanded community shuttle service, employer van-pools, park and/or kiss and ride facilities, and the implementation of reservation systems for high-volume tourist attractions.

The need to invest in pedestrian and cycling infrastructure to encourage mode shift to active transportation was also recognized and recommended by INSTPP. More specifically, the desire to prioritize the movement of people over parking along key corridors was identified. This policy direction would enable a highly cost-effective expansion of cycling infrastructure across the North Shore without impacting road capacity or vehicle travel times.

**District of North Vancouver Priorities**

DNV's immediate priorities continue to be relief of congestion in and around the Second narrows corridor by increasing options for effectively moving people, goods and services across the inlet.

DNV staff believe that the collaborative planning facilitated through the INSTPP process resulted in many good North Shore transportation initiatives. However, INSTPP recommendations do not necessarily align or reflect top DNV priorities. For example, there is a recommendation to study a SkyTrain link from Waterfront Station to Lonsdale, however there is no commitment to consider improvements to increase Burrard Inlet crossing capacity in the vicinity of the Second Narrows. Notably TransLink concluded that SkyTrain ridership between a possible downtown Vancouver Waterfront Station and Lonsdale would consist of replaced existing Seabus ridership plus new trips resulting from a more convenient connection between Lonsdale and downtown Vancouver. It was concluded that a SkyTrain link between Waterfront Station and Lonsdale would have minimal if any effect on reducing congestion at the Second Narrows.



## **Conclusion**

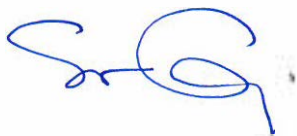
### **DNV PRIORITIES AND NEXT STEPS:**

1. Implement express Highway 1 Upper Levels transit with Bus on Shoulder lane eastbound Lonsdale to Phibbs to connect to SkyTrain south of Burrard Inlet (note that this proposed service is new and is not currently in the Mayor's Plan);
2. Accelerate future B Lines (Lynn Valley to Lonsdale Quay and Capilano University to Phibbs to SkyTrain) currently in Phase 3 of Mayor's Plan and unfunded;
3. Identify opportunities for transit priority measures around Second Narrows Bridge;
4. Conduct feasibility assessments for the Barrow St-Spicer Rd connector over the Seymour River south of the Main St-Dollarton Hwy corridor;
5. Investigate Burrard Inlet crossing improvement opportunities at Second Narrows and evaluate the potential for integrating rail, transit, truck, and active transportation in Second Narrows Bridge and/or the CN Rail Bridge replacement structures;
6. Launch e-Bike share pilot in partnership with TransLink and City of North Vancouver;
7. Invest in pedestrian and cycling related improvements and prioritize road space for the movement of people;
8. Optimize the performance of the existing network through Intelligent Transportation Systems (ITS);
9. Investigate the opportunity to better utilize our waterways for transportation to reduce pressure on bridges;
10. Evaluate feasibility of commuter rail from Whistler to Seabus/Phibbs;
11. Work with INSTPP to communicate DNV priorities and advance initiatives; and
12. Develop a TDM strategy to address traffic generated by outdoor recreational activity on the North Shore.

### **Options:**

1. THAT Council endorse DNV priorities as identified, and direct DNV staff to pursue these priorities for further study and/or implementation in partnership with other stakeholders; or
2. THAT Council do not endorse the DNV priorities as identified, and provide alternative options for staff to pursue and/or implement.

Respectfully submitted,



Steve Carney, PEng, PTOE  
Transportation Section Manager

REVIEWED WITH:					
<input type="checkbox"/> Community Planning	_____	<input type="checkbox"/> Clerk's Office	_____	External Agencies:	
<input type="checkbox"/> Development Planning	_____	<input type="checkbox"/> Communications	_____	<input type="checkbox"/> Library Board	_____
<input type="checkbox"/> Development Engineering	_____	<input type="checkbox"/> Finance	_____	<input type="checkbox"/> NS Health	_____
<input type="checkbox"/> Utilities	_____	<input type="checkbox"/> Fire Services	_____	<input type="checkbox"/> RCMP	_____
<input type="checkbox"/> Engineering Operations	_____	<input type="checkbox"/> ITS	_____	<input type="checkbox"/> NVRC	_____
<input type="checkbox"/> Parks	_____	<input type="checkbox"/> Solicitor	_____	<input type="checkbox"/> Museum & Arch.	_____
<input type="checkbox"/> Environment	_____	<input type="checkbox"/> GIS	_____	<input type="checkbox"/> Other:	_____
<input type="checkbox"/> Facilities	_____	<input type="checkbox"/> Real Estate	_____		
<input type="checkbox"/> Human Resources	_____	<input type="checkbox"/> Bylaw Services	_____		