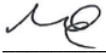




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The Corporation of **THE CITY OF NORTH VANCOUVER**  
**PLANNING & DEVELOPMENT DEPARTMENT**

**INFORMATION REPORT**

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To: Mayor Linda Buchanan and Members of Council

From: Andrew Devlin, Manager, Transportation Planning

Subject: CLOVERLEY TRAFFIC CALMING PLAN UPDATE

Date: April 28, 2021 File No: 16-8330-01-0001/2021

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**ATTACHMENTS**

1. Map and Summary of Neighbourhood Traffic Measures (CityDocs [#2045311](#))
2. Neighbourhood Traffic Volume and Speed Data 2018 to 2021 (CityDocs [#2045313](#))
3. December 2020 Neighbourhood Survey – Summary of Findings (CityDocs [#2047207](#))

**SUMMARY**

This report summarizes the outcomes and lessons learned from traffic calming and access management measures installed in the Cloverley neighbourhood in late 2019 on a pilot basis, a re-evaluation of all measures in place throughout the area since 2016, and next steps to be pursued by the City. Staff will be moving to remove all traffic diverting features because of measured ineffectiveness due in large part to significant volumes of drivers using illegal maneuvers to bypass interventions and safety issues this creates.

**BACKGROUND**

On June 10, 2019, Council received a staff report stating that traffic calming measures and interventions installed in the Cloverley neighbourhood between 2016 and 2018 (including one-way streets, speed bumps, and sign-based turn restrictions) had not been effective in reducing overall volumes of shortcutting through the neighbourhood, that new shortcutting patterns had emerged, and that resident support for interventions in place was mixed. In response, Council directed staff to retain a third-party to review the measures put in place to that point.

A third-party review was submitted to the City by Morrison Hershfield in October 2019. City staff implemented measures based on the recommendations contained in this report on a pilot basis in the neighbourhood in December 2019. These interventions

primarily included the introduction of limited physical measures like delineators and barriers to complement existing sign-based restrictions.

Over the last year, staff have collected updated traffic volume and speed data from the neighborhood. In December 2020 staff also obtained resident feedback using a survey and on-line mapping tool to assess the effectiveness and current support for both the pilot measures and the full suite of interventions installed in the area.

## **DISCUSSION**

### **Measures installed in December 2019 introduced interventions to physically restrict vehicle access in some areas of the neighbourhood**

Attachment 1 shows the traffic calming and access management interventions currently in place in the Cloverley neighbourhood. It also specifies those measures installed between 2016 and 2018 (“Phase 1”) and those installed in December 2019 (“Phase 2”) in response to the third-party review.

Measures installed in Phase 2 represented only a portion of those recommended by Morrison Hershfield in their third-party review. This review recommended eliminating right-turn movements from all local streets onto Keith Road east of Adderley Street using physical barriers as well as introducing other physical turning restrictions across the neighbourhood. The decision to install a scaled down set of additional interventions was made by staff in response to:

- Resident feedback from a November 2019 neighbourhood information session that indicated that introducing a larger number of delineators and barriers would create unreasonable access limitations to and from the neighbourhood for residents on both typical and incident days;
- Feedback from the North Vancouver City Fire Department that a larger number of physical restrictions may increase emergency response times to the area; and
- Staff concern about lack of space for larger vehicles (delivery trucks, vehicles with trailers, etc.) to safely navigate or approach streets with physical measures in place due to steep topography and sharp turning angles.

Despite being scaled down, the new physical measures installed in Phase 2 would have the effect of significantly reducing shortcutting opportunities through the neighbourhood if drivers operated their vehicles legally. A pilot approach was utilized in order to gauge the effectiveness of the new measures on their ability to complement existing interventions in the neighbourhood and to allow residents an opportunity to experience impacts of physical interventions.

### **Measures in place have not helped to reduce overall traffic volumes in the neighbourhood during incident days due to driver non-compliance**

Attachment 2 summarizes traffic volume and speed data collected on different blocks throughout the neighbourhood prior to installation of the Phase 2 pilot measures (September 2018) and after installation of the measures in January 2020 (pre-COVID-

19) and February 2021 (during COVID-19). In general, the following findings are observed:

1. Overall traffic volumes through the neighbourhood remain high during incident periods, which generally occur once per week

Traffic volumes through the neighbourhood during incident periods on Highway 1 remain at approximately the same levels as before the Phase 2 pilot measures were installed. In general, volume data indicates that 30 to 60 vehicles per hour are accessing Keith Road East during typical periods and 340 to 400 vehicles per hour are accessing Keith Road East during incident periods. Of note, COVID-19 travel and other restrictions in place during data collection in February 2021 did not have a material impact on the volume of traffic travelling through the neighbourhood during both typical and incident periods. Between 2018 and 2021, traffic volume data collected by City staff and observed from Google Maps indicates that the number of incidents resulting in higher than typical traffic volumes on Keith Road, East 3<sup>rd</sup> Street, and through the Cloverley neighbourhood has remained relatively consistent at 3 to 5 times per month and primarily between the hours of 3:00 pm and 6:00 pm on weekdays. The on-going Lower Lynn Interchange improvements on Highway 1 continue to impact traffic patterns and volumes in the area. That project is not anticipated to be complete until 2022.

2. Highest traffic volumes on incident days are concentrated on select streets and blocks

Streets and blocks in the neighbourhood without restrictions continue to carry the majority of through traffic in the area during incident days. A lack of restrictions on these streets and blocks exist in order to respond to resident feedback received throughout the project to maintain a reasonable amount of access to the neighbourhood. The physical barriers installed as part of the Phase 2 pilot to prevent through traffic from continuing past Hendry Street have not had the intended effect of reducing traffic on these blocks during incident periods. Resident feedback also confirms that vehicle traffic regularly makes use of laneways to bypass one-way streets. Despite higher volumes concentrated on select streets, no street in the neighbourhood exceeds the 1,000 daily vehicle volume threshold for Local Streets on either typical or incident days identified by the Transportation Association of Canada.

3. Drivers are making illegal and unsafe maneuvers around both sign-based and physical restrictions to travel through the neighbourhood on incident days

Approximately 70% of residents surveyed in December 2020 noted observing illegal or unsafe driver behaviour in the neighbourhood during both typical and incident periods after installation of the Phase 2 pilot measures. These included: vehicles travelling into oncoming travel lanes or making U-turns to evade physical restrictions, traveling the wrong way down one-way streets, and disobeying turn restrictions. Traffic count and volume data, as well as staff monitoring, have confirmed these observations and point to these circumstances as a key contributing factor to continued high vehicle volumes during incident days. A lack of two-way

traffic demand on local streets in the neighbourhood – especially during the afternoon peak period on incident days – is believed to create the conditions for drivers to experience limited on-coming traffic and thereby perceive a reduced risk with making illegal maneuvers around physical barriers, e.g., traveling into the opposite travel lane, making U-turns, etc. Regular RCMP presence in the neighbourhood to enforce both sign-based and physical measures is not possible.

4. Vehicle speeds have remained unchanged on streets and lanes during both typical and incident days

Approximately 27% of residents surveyed in December 2020 indicated they observed increased speeding after the Phase 2 pilot measures were installed. Traffic data has indicated that 85<sup>th</sup> percentile vehicle speeds are generally at or below the 50 km/h speed limit on streets during both typical and incident periods but are higher than the 20 km/h speed limit in some laneways, despite all lanes in the neighbourhood having multiple speed bumps.

**Resident satisfaction with the pilot measures is low. Overall resident support for all actions taken to date continues to be split.**

Attachment 3 summarizes resident feedback obtained in December 2020. Approximately 42% of neighbourhood residents surveyed at that time indicated they were not satisfied with the outcomes of the Phase 2 pilot measures (compared to 38% who were satisfied and 20% who were neutral). Common reasons cited for dissatisfaction included the inconvenience created by the measures to access the neighbourhood, increasing illegal driver behaviour, and increasing traffic volumes on select streets. Approximately 48% of neighbourhood residents surveyed indicated they believed all measures put in place in the area have helped improve road safety by reducing traffic volumes and speeds (compared to 33% who disagreed and 19% who were neutral). Level of support generally varies by street, with residents on streets experiencing higher traffic volumes having the lowest levels of support. This “50/50” split in overall level of support for the interventions delivered through the project is consistent with findings from resident surveys in 2018 and 2019.

In addition to resident feedback, the City has received input from the North Vancouver School District that some of the Phase 2 pilot measures are preventing maintenance and operations vehicles from safely accessing the driveway from Shavington Avenue to the Cloverley school property. These vehicles are now required to park on Shavington Street to service the site, which is not a viable arrangement in the long-term.

**Meaningful reduction in traffic volume in the neighbourhood is not possible without more aggressive access management interventions that will create substantial impacts on resident access.**

Considering the data, resident feedback, and other information described above, staff's overall conclusions from efforts and interventions made to date are as follows:

1. Meaningful traffic volume reduction in the neighbourhood during incident periods will only be achieved through more aggressive physical restrictions and full closures of

local streets to through traffic. If opportunities exist to maneuver around delineators and barriers and disobey signage, drivers will do so due to a lack of two-way traffic demand. The Morrison Hershfield third-party review included additional physical restrictions than what staff implemented, but these were predominantly partial restrictions in order to allow for some degree of neighbourhood access. Based on the data and observations collected to date, staff do not believe these additional measures would produce a meaningful reduction in traffic volumes.

2. More aggressive physical restrictions and street closures will require additional street design changes to provide sufficient space for larger vehicles to turn around or navigate streets. These changes may have impacts on personal properties, which may require further engagement with the community and would be subject to being prioritized as part of future Annual Capital Plans.
3. Support for additional physical restrictions is anticipated to be low. Since 2016, many residents have indicated that unreasonable impacts on neighbourhood access would not be acceptable. In the December 2020 survey, inconvenience was cited by 51% of residents who were unsatisfied with the measures in place. More aggressive physical restrictions will impact resident access during both typical and incident periods.
4. The rate/occurrence of incident days or periods does not justify the installation of more aggressive physical restrictions at this time.

**Removing the majority of traffic calming and access management interventions in the neighbourhood will reduce the inequitable impacts that these measures have on certain streets and blocks.**

Staff have assessed five options for next steps, as described in Table 1 below.

**Table 1:** Evaluation of Options for Next Steps

<b>Option</b>	<b>Benefits</b>	<b>Challenges</b>
1. Maintain all measures currently in place (Phase 1 and Phase 2 measures)	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Will not reduce overall shortcutting volumes</li> <li>• Shortcutting volumes will remain highest on select streets and blocks</li> <li>• Safety risks with driver noncompliance with barriers and regulations</li> </ul>
2. Remove Phase 2 measures only; retain Phase 1 measures	<ul style="list-style-type: none"> <li>• Reduces safety risks created by driver noncompliance with barriers and regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Will not reduce overall shortcutting volumes</li> <li>• Shortcutting volumes will remain highest on select streets and blocks</li> </ul>
3. Install additional measures, as outlined in the	<ul style="list-style-type: none"> <li>• May reduce traffic volumes on select streets</li> </ul>	<ul style="list-style-type: none"> <li>• Vehicles will still be able to bypass partial barriers and delineators, thereby increasing safety risks</li> </ul>

<p>2019 third-party review (e.g., additional right turn barriers, delineators, etc.)</p>		<ul style="list-style-type: none"> <li>• Low levels of public support anticipated</li> <li>• Overall traffic volume reductions anticipated to be minimal</li> <li>• May be incompatible with future Cloverley School operational plans</li> </ul>
<p>4. Develop a new plan that relies solely on physical restrictions and full closures of streets</p>	<ul style="list-style-type: none"> <li>• Strongest likelihood of achieving traffic volume reductions</li> </ul>	<ul style="list-style-type: none"> <li>• Low levels of neighbourhood support and reduced neighbourhood access at all times</li> <li>• High costs to retrofit streets to facilitate safe turn-around and access for operational and emergency vehicles</li> <li>• May be incompatible with future Cloverley School operational plans</li> <li>• High likelihood of new shortcutting routes be established in adjacent neighbourhoods, e.g., north of East Keith Rd.</li> </ul>
<p>5. Remove majority of Phase 1 and Phase 2 measures, except for speed bumps</p>	<ul style="list-style-type: none"> <li>• Traffic able to better distribute which will lessen impacts that select streets, blocks and lanes experience during incident periods</li> <li>• Addresses safety concerns caused by driver noncompliance</li> </ul>	<ul style="list-style-type: none"> <li>• Will not reduce overall shortcutting volumes</li> </ul>

Based on this evaluation, staff will be proceeding with Option 5 as it will address key issues created by the current suite of measures and interventions.

**City staff will shift to exploring alternative interventions to minimize the impact of traffic volumes in the neighbourhood.**

Pending removal of existing traffic calming interventions, staff are proposing to advance the following suite of actions and initiatives outlined below to improve the functionality of nearby arterial streets and increase safety by reducing vehicle speeds and increasing separation of road users in the neighbourhood moving forward:

- Continue to explore signal optimization, lane reconfiguration, and other interventions to improve the capacity and traffic flow along Keith Rd and East 3<sup>rd</sup> Street
- Undertaking intersection analysis within the neighbourhood to explore needs for additional stop signs, crosswalk improvements, and sidewalk coverage
- Consider installation of additional speed bumps or reducing speed limits on local streets in the neighbourhood to 30 km/h

- Introducing street design changes like narrower travel lanes, dedicated cycling facilities, curb bulges, curb extensions, and diverters to focus on better separating different road users and reducing vehicle speeds in the neighbourhood
- Explore opportunities with the Province for automated enforcement to increase compliance with sign-based turn restrictions.

Actions that can be incorporated into existing work plans and delivered with available funds will be prioritized for delivery in the next one-to-two years. Actions requiring additional funds and community engagement will be advanced in parallel with on-going functional planning for the Cloverley School site, e.g., next 3 or more years.

### **Neighbourhood residents will be notified about next steps via a mailed notice**

City staff will prepare a notice for residents in the neighbourhood that will summarize the key findings and next steps outlined in this report. A copy of this letter will be included in a subsequent Council Information Package.

### **INTER-DEPARTMENTAL COORDINATION**

Recommendations outlined in this report have been reviewed and supported by Engineering, Parks, and Environment and the North Vancouver RCMP.

### **FINANCIAL IMPLICATIONS**

Removal of the pilot measures is anticipated to cost approximately \$13,000 and will be funded with available traffic safety and infrastructure funds.

RESPECTFULLY SUBMITTED:



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Andrew Devlin, MCIP RPP  
Manager, Transportation Planning