

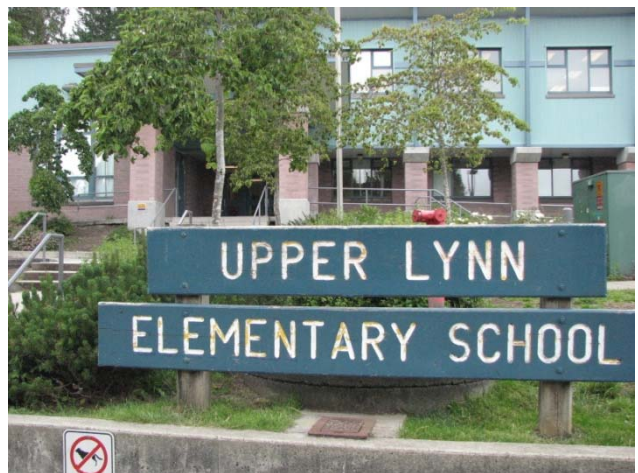
School Safety Review

Final Report

Prepared for:
District of North Vancouver and
North Vancouver School District #44

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Stantec



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1 INTRODUCTION

1.1 Project Background

In spring 2010, due to a decline in student enrolment within the District of North Vancouver, the School District of North Vancouver (#44) had to make the difficult decision to close Plymouth and Fromme Elementary Schools after the 2009/2010 school year. As well, Blueridge Elementary School is expected to close its doors after spring 2013. Consequently, many students have been and will be relocated to Seymour Heights, Lynn Valley, and Upper Lynn Elementary Schools.

As most of the relocated students now have to travel longer distances, parents may be more likely to drive their children to school. As a result, it was anticipated that there would be increased parking demand and traffic congestion at and around the three recipient schools, and traffic safety at the schools would be affected.

With this in mind, in summer 2010, the District of North Vancouver and North Vancouver School District commissioned Stantec to undertake a school safety review of the three recipient schools. The purpose of this project is to assess the current transportation operations and conditions at and around the schools, and to develop short-, medium-, and long-term recommendations that will help improve the safety of students and their families, and staff members getting to and from school. One of the focuses of the study is to promote alternative and sustainable forms of travel such as walking and cycling, as they help reduce the negative environmental and safety impacts associated with transportation and encourage students and their families to be more physically active.

This report summarizes the study's results. The report also includes comments from parents collected via e-mail and workshops, and feedback from the District, School District, and the principals/vice-principals of the schools received during meetings and interviews.

1.2 Safe Routes to School Concept

The Safe Routes to School concept is a world-wide movement whose goal is to make it safer for children and their families to walk and bicycle to school on a daily basis. The benefits of students walking and cycling, as opposed to being driven to school, are numerous. As mentioned above already, students are able to get more physical activity, thereby promoting a healthier lifestyle, and reducing school traffic congestion. Lower automobile usage also reduces the emission of greenhouse gases and other pollutants that are harmful to human health, and creates safer traffic environments at the schools and around their surrounding neighbourhoods.

A Safe Routes to School program typically includes identifying the best routes to school, raising awareness about traffic safety, and promoting the use of active transportation modes. Measures that are implemented can include: school-wide educational campaigns that target students and their families; traffic calming measures such as speed humps and traffic circles; improvements to the cycling and walking environment such as the installation of new sidewalks and crosswalks; and programs such as walking school buses, where a group of students walk together to and from school while being supervised by a volunteer parent(s) or a school staff member. In this study, all of these measures, as well as others, have been considered to help improve the transportation conditions around the three North Vancouver schools.

1.3 Context of Safe Routes to School in District of North Vancouver

The goals within the District of North Vancouver's Official Community Plan which are related to this study include the following:

- Foster a safe, socially inclusive and supportive community that enhances the health and well-being of all residents;
- Provide a safe, efficient and accessible network of pedestrian, bike and road ways and enable viable alternatives to the car through effective and coordinated land use and transportation planning;
- Conserve the ecological integrity of our natural environment, while providing for diverse park and outdoor recreational opportunities;
- Develop an energy-efficient community that reduces its greenhouse gas emissions and dependency on non-renewable fuels while adapting to climate change; and
- Provide infrastructure to support community health, safety and economic prosperity, and facilities that enhance recreational opportunities, cultural activity and artistic expression.

These goals support the implementation of a Safe Routes to School program. However, in many areas of the District, the local streets currently lack sidewalks. The topography of the study areas also includes many hills, which is a disincentive for students to walk or cycle on a daily basis to get and from school. The development density around these schools is also relatively low, and the road network includes many cul-de-sacs, which limit road connectivity and increase walking and cycling distances for pedestrians and cyclists. Therefore, promoting walking and cycling can be a challenge. The recommendations included in this report attempt to overcome some of these challenges, making active transportation a more attractive and common mode of transportation.

The remainder of this report is divided into five chapters. Chapters 2 to 4 focus on each school individually, describing the existing conditions, issues and opportunities that have been identified by parents, school administrative staff, and the consultant team during site visits. All of these factors have been included during the development of the recommended improvements to consider, which are summarized in the latter section of each chapter. Recommended walking routes and school entry points for cyclists, and traffic flow for vehicles are also shown in last portion of each section. Chapter 5 provides other additional general recommendations and Chapter 6 concludes the report.

2 SEYMOUR HEIGHT ELEMENTARY SCHOOL

2.1 Existing Conditions and Plans

Population

Seymour Heights Elementary is a relatively smaller elementary school, located on Carnation St, between Berkley Dr and Emerson Way. The student population of Seymour Heights Elementary in the 2009/2010 school year was about 200. In the 2010/2011 school year, with the additional students being relocated from Plymouth Elementary, there are 283 students. Once Blueridge Elementary closes in 2013, there will be an additional 80 students who will be relocated to Seymour Heights.

Residential Location of Students

Figure 3 shows the approximate residential locations of the students who were attending Seymour Heights in the 2009/2010 school year and were within walking or cycling distance of the school. The map

also shows the approximate residential locations of the new students who are now relocated from Plymouth Elementary and are within walking or cycling distance of Seymour Heights. As illustrated, most of the students who were already attending Seymour Heights in the 2009/2010 school year live north of Mt Seymour Pkwy, close to the school site. However, as Plymouth Elementary is located south of Mt Seymour Pkwy, the former Plymouth students now have to cross the Pkwy to get to school. Blueridge, on the other hand, is located north of Seymour Heights. Therefore, the relocated Blueridge students will likely not have to cross any major arterial roads to get to school.

Modes of Travel

Most students attending Seymour Heights are driven to school (the auto mode share estimate provided by the school administration is about 60%). The remaining trips are done by foot or by bicycle. The percentage of walking and cycling trips also depend on the weather. On dryer and warmer days, there are more students who walk or cycle. Scooter use is also common amongst a small percentage of students. As for the staff, all members currently drive to work.

School Transportation Facilities and General Layout

Access Points: Apart from the school main entrance, which is located on the south side of the school, there are also several access points on the east, west, and north sides of the school. These foot-trails, which lead to Trillium Place, Belloc St, and Hardy Crescent (Figure 1), respectively, are currently being used by students. However, they are not well marked. Therefore, students new to the area may not be aware of them. As well, there are two pedestrian trails south of the school that connect Carnaby Pl and Lytton St to Carnation St.



Figure 1 - Left: Foot-bridge leading to Belloc St. Right: Foot-trail leading to Hardy Crescent

Staff Parking: The school currently has two staff parking lots, and all 22 stalls (including one handicapped parking stall) are usually occupied (Figure 2). With the addition of new staff to account for the additional students, there is a shortage of designated parking spaces for staff.



Figure 2: Parking lot for staff and students/staff with special needs

Parent Parking: The curb area directly in front of the school is designated as a general drop-off/pick-up only area. However, parents still often park within this zone as they are waiting for their children to get out of class or as they are escorting their children into the school. Parking is allowed east and west of the school along the north side of Carnation. Parents also often park on the south side of Carnation, in front of people's residences.

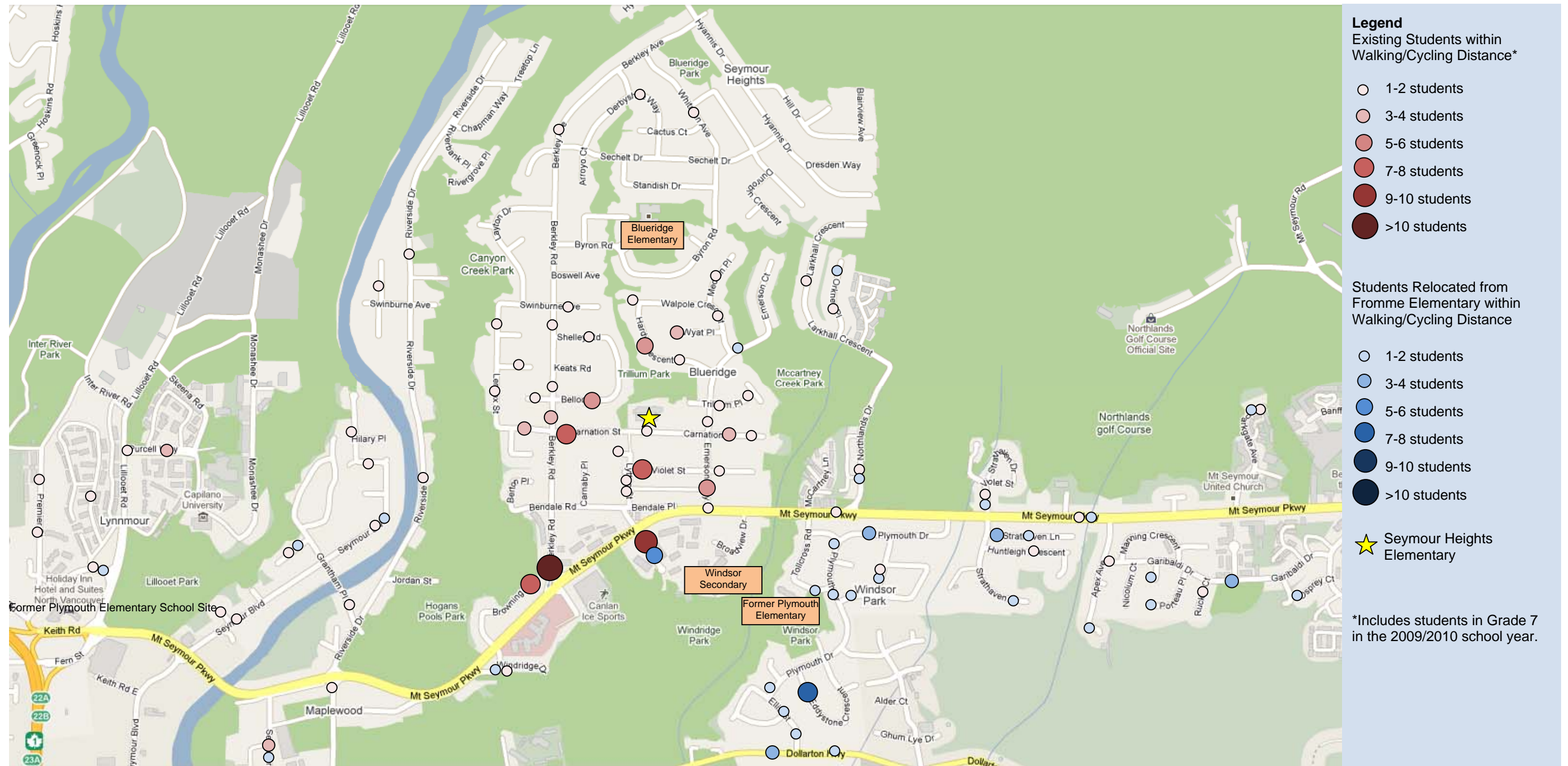


Figure 3: Approximate residential location of existing and new students within walking/cycling distance of Seymour Heights Elementary

Facilities for Students with Special Needs: There is a drop-off area for students with special needs directly in front of the school, in an area that was a former drop-off/pick-up area for the whole school. However, it is also the area where many parents and students congregate before school starts. As there are no markings to distinguish the space for pedestrians and for vehicles, there is a potential for pedestrian/vehicle conflict (it has been closed off for the last two decades or so due to this concern).

Pedestrian Facilities: There is a sidewalk along the north side Carnation St, where the school is located. However, sidewalks are missing on the other side of the street. There are also two crosswalks on Carnation St that allow pedestrians using the Lytton and Carnaby footpaths to be more visible when they cross the road at Carnation St (see Figure 4).

Bicycle Facilities: There is one small secured bike rack located conveniently in front of the school (see Figure 5). However, the area is not covered. The only designated bike route located close to the school is Mt Seymour Pkwy, which is also a heavily used arterial road and a part of the region's major road network.

Transit Facilities: Carnation St and Emerson Way are also transit routes, served by route #214, whose peak period frequency is once every 15 minutes (see Figure 6). Mt Seymour Pkwy is also well served by a number of bus routes - #211, #214, and #290. The peak period headway is 15 minutes for #211 and 30 minutes for #290. Despite these services, however, transit is rarely used by students or staff.

Nearby Community Facilities

There are several parks and other recreational facilities located near Seymour Heights. These include: McCartney Creek Park, which is situated east of the school, and Ron Andrews RecCentre and Canlan Ice Sports Centre, which are located south of Seymour Heights and on the opposite side of Mt Seymour Pkwy. Windsor Secondary is also located close by, south of the Pkwy. Therefore, many secondary students who live north of Seymour Heights often walk through the school site on their way to and from Windsor.

2.2 Issues

2.2.1 Issues Identified by Parents

The following is a brief summary of the main issues that were raised by parents.



Figure 4: Crosswalk at Lytton and Carnation



Figure 5: Bike rack in front of school



Figure 6: Transit bus along serving Carnation

Immediate Vicinity of School

The main issue identified for the school area is that motorists, including bus drivers, often drive over the speed limit along Carnation St. There is also a concern that there is not enough drop-off space for students with special needs, and that bus drivers sometimes use Carnation St a lay-by area, thereby reducing parking supply for the school.

Neighbourhoods Around the School

Parents expressed concern that motorists are often speeding along Emerson Way, and they frequently disobey the stop signs at the Emerson/Carnation intersection. As well, the speed and volume of traffic along Mt Seymour Pkwy is a concern for many parents, especially those of children who previously attended Plymouth Elementary (their children would now have to cross this road to get to Seymour Heights Elementary). The main points of concern include the Emerson Way, Broadview Dr, and Tollcross Rd intersections (one parent also noted that it is difficult for vehicles to turn left from Plymouth Rd onto Mt Seymour Pkwy). The concerns included insufficient length of crossing time for pedestrians and a lack of traffic signals and crosswalks. Some parents also noted that many existing streets lack sidewalks and crosswalks, acting as a disincentive for people to walk. In addition, a parent noted that it is difficult for pedestrians living south of Dollarton Hwy to cross the Hwy at Ellis.

2.2.2 Other Additional Issues

Other issues that have been identified by the school administration and through site visits include the following:

- Students are running across Carnation St. when they are being dropped off/picked up along the south side Carnation;
- Parents are often driving into the residential driveways and the staff parking lot entryways to make U-turns;
- Parents often use the staff parking lots to drop-off/pick-up students;
- With additional staff working at the school, the demand for parking is exceeding supply. Therefore, some staff now have to park in front of people's residences;
- Parents often park in the morning, escort their children to the school, and linger at the school and socialize with other parents. Therefore, they often park for much longer periods of time than necessary;
- The vegetation along several spots of Carnation St obscure the sight lines for pedestrians and motorists;
- Children often use the school playground area during non-school hours, and are not visible to motorists who are at the bottom of the hill on Carnation St;
- The yellow paint on the curbs is faded;
- There is a lack of lighting along the foot-trails leading to the school; and
- Motorists often start increasing their speeds after they pass the first crosswalk located at Lytton and Carnation, as the centerline becomes a dashed yellow line.

2.3 Opportunities

One of the most promising opportunities that have been implemented since the start of this study is the walking school bus program. Before Plymouth Elementary school closed, a survey was initiated and the results showed that there was significant interest in initiating a walking school bus program to walk students from the former Plymouth neighbourhood to Seymour Heights and hiring extra CUPE staff to supervise the program. As a result, a request for funding from the School District was submitted and

approved, and the program is now underway. However, additional funding may be required for subsequent years to continue the program.

As well, as a result of this study, TransLink, the regional transportation agency, has identified Seymour Heights as a candidate for the TravelSmart program. This program would involve TransLink staff launching an educational campaign at the school to promote alternative forms of transportation.

Furthermore, this study has identified the opportunity to re-open the original pick-up/drop-off area so that parents do not need to park their vehicles, and this preliminary recommendation has recently been implemented by the school. This will help reduce traffic congestion and parking demand along Carnation.

In addition, a valet service, where older, trained student volunteers escort younger students from the vehicles into the school, could be implemented. As well, to avoid pedestrian-vehicle conflicts, a pedestrian-only painted zone could be established in front of the school, the existing speed bumps could be rehabilitated, and an additional speed bump could be added. More details about this opportunity are provided in section 2.4.

Finally, with the addition of the Blueridge students, Seymour Heights will exceed its capacity. Therefore, in a few years time, there will likely be a need to expand or rebuild the school. If this is the case, then it would be an excellent opportunity to make the school more accessible to all students and to install traffic calming measures and pedestrian and cycling facilities within the immediate vicinity of the school.

2.4 Recommendations

Based on the school's existing conditions and the issues and opportunities identified above, the following recommended items for consideration have been developed. These recommendations take into account the suggestions that have been submitted by parents and school administration, and are prioritized as high and medium based on safety and level of urgency considerations. Those recommendations that have already been completed based on the study's initial findings are also highlighted. Lower priority recommendations have also been developed and these can be found in Appendix B. It should be noted that these recommendations are only meant to highlight the improvements that should be *considered*. Further studies and evaluations may have to be conducted to determine if these improvements are warranted and feasible.

The recommendations are organized in Table 1 as follows:

- Purpose
- Responsible party (e.g., the school, school district, or the District)
- Estimate capital cost if the recommended improvement is implemented
- Additional comments

Additionally, it is recommended that the Safe Routes to School map shown in Figure 7 be distributed to the parents of Seymour Heights Elementary, either as a hard copy as part of a parent notice insert or through the school website, or both. The map shows where sidewalks, crosswalks, stop signs, curb extensions, and traffic signals currently exist in the immediate school area and in the surrounding communities. It also illustrates the recommended walking paths and school entry points for pedestrians and cyclists, respectively, as well as the recommended direction of travel and drop-off/pick-up zones for drivers.

DISTRICT OF NORTH VANCOUVER SCHOOL SAFETY REVIEW



Table 1: Completed and Higher Priority Items for Consideration for Seymour Heights Elementary

COMPLETED				
Improvement	Purpose	Responsible Party		Comments
Install a sign on Mt Seymour Pkwy west of Emerson to warn motorists traveling eastbound of the upcoming traffic signal	To ensure motorists obey the traffic signal	District of North Vancouver		Completed
Repaint the yellow curb in front of the school	To increase the visibility of the yellow curb	District of North Vancouver		Completed
Cut back the vegetation at the crosswalk on Carnation, just west of the school	To improve the sightlines for pedestrians crossing Carnation and for motorists	District of North Vancouver		Completed
Cut back the vegetation on the north side of Carnation, along the ravine area, and just east of the school	To improve the sightlines for pedestrians and motorists	District of North Vancouver		Completed
Request parking patrols to visit the school once a month during drop-off/pick-up times, on a randomly selected days	To encourage parents to comply with the parking restrictions	District of North Vancouver		Done
Request TransLink buses not to use Carnation St as a lay-by location	To reduce traffic congestion along Carnation	District of North Vancouver		Done, although the another reminder message may need to be sent.
Coordinate a Walking School Bus Program	To reduce vehicle traffic to and from the school, to promote physical activity, and to reduce the negative environmental impacts of vehicle use	Seymour Heights Elementary		A small program with one hired staff has started. However, additional funding will be required to continue the program. May want to consider using parent supervisors instead.
Have TransLink's TravelSmart program come and carry out educational campaigns at the school	To further promote the use of alternative modes of transportation (e.g. walking and cycling)	Seymour Heights Elementary		In preliminary planning stages
Encourage parents coming from the Mt Seymour Pkwy to come up through Emerson rather than Berkley so that they travel on Carnation in the westbound direction (via parent notices)	To avoid having students from crossing the road onto on-coming traffic	Seymour Heights Elementary		Done – also included in the Safe Routes to School Map (Figure 7)

DISTRICT OF NORTH VANCOUVER SCHOOL SAFETY REVIEW



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Improvement	Purpose	Responsible Party		Comments
Re-open the area directly in front of the school for drop-offs and pick-ups and clearly outline the pedestrian-only area with paint	To discourage parents from parking at the school	Seymour Heights Elementary		Area has been re-opened. Pedestrian-only area has not yet been painted
PROPOSED				
Items for Consideration	Purpose	Responsible Party	Estimated Capital Cost*	Comments
High Priority				
Explore the feasibility of installing a four-way stop at Carnation and Emerson and a crosswalk across Emerson	To eliminate right-of-way conflicts	District of North Vancouver	\$3,500	
Consider converting the Broadview and Mt Seymour Pkwy intersection to a pedestrian controlled or full signal and use an audible pedestrian countdown signal	To provide safer pedestrian crossings and to force motorists to fully stop when pedestrians are crossing	District of North Vancouver	\$100,000 - pedestrian-controlled signal; \$150,000 - full signal	
Explore the feasibility of extending the length of the Mt Seymour Pkwy lights and shortening the time between the pedestrian signal is pressed and the walk signal is activated at Lytton and Emerson for 45 minutes in the morning and 45 minutes in the afternoon (to enable more crossing time for students)	To allow more time for pedestrians to cross the intersection	District of North Vancouver	N/A	
Consider putting in curb extensions at all four corners at Emerson and Carnation and crosswalk across Carnation	To reduce vehicle speeds and to improve the pedestrian environment	District of North Vancouver	\$40,000	
Consider establishing a pedestrian pathway on the east side of the exit ramp of the re-opened drop-off area	To avoid having pedestrians cross in front of vehicles coming down the ramp and to provide a more direct connection to the school	Seymour Heights Elementary	\$5,000	
Consider installing four speed cushions or humps along Carnation, between Emerson Rd and Berkley, with accompanying signage	To reduce vehicle speeds along Carnation	District of North Vancouver	\$16,000	
Medium Priority				
Convert the dotted yellow centreline on Carnation to a solid yellow centreline	To discourage motorists from passing other vehicles	District of North Vancouver	\$500	
In the re-opened drop-off area, consider installing a speed bump at the top of the hill as motorists start to descend down the hill	To ensure vehicles are not speeding down the hill	Seymour Heights Elementary	\$1,000	
Explore a way to establish a curb drop-off area for students with special needs at the front of the school	To provide better access for students with special needs	Seymour Heights Elementary and School District #44	Will depend on the selected area	

DISTRICT OF NORTH VANCOUVER SCHOOL SAFETY REVIEW



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Items for Consideration	Purpose	Responsible Party	Estimated Capital Cost*	Comments
Request traffic police to monitor and ticket traffic violators on Mt Seymour Pkwy on a regular basis	To encourage motorists to obey the speed limit	District of North Vancouver	N/A	
Consider putting in curb extensions at all four corners at Berkley and Carnation	To reduce vehicle speeds and to improve the pedestrian environment	District of North Vancouver	\$20,000	

*Order-of-magnitude estimates only. More refined cost estimates will require further examination of the work that is required. Design and construction administration costs are also not included. Once it is determined which improvements will be implemented, a contingency of 15-20% should be applied to the more refined cost estimates.

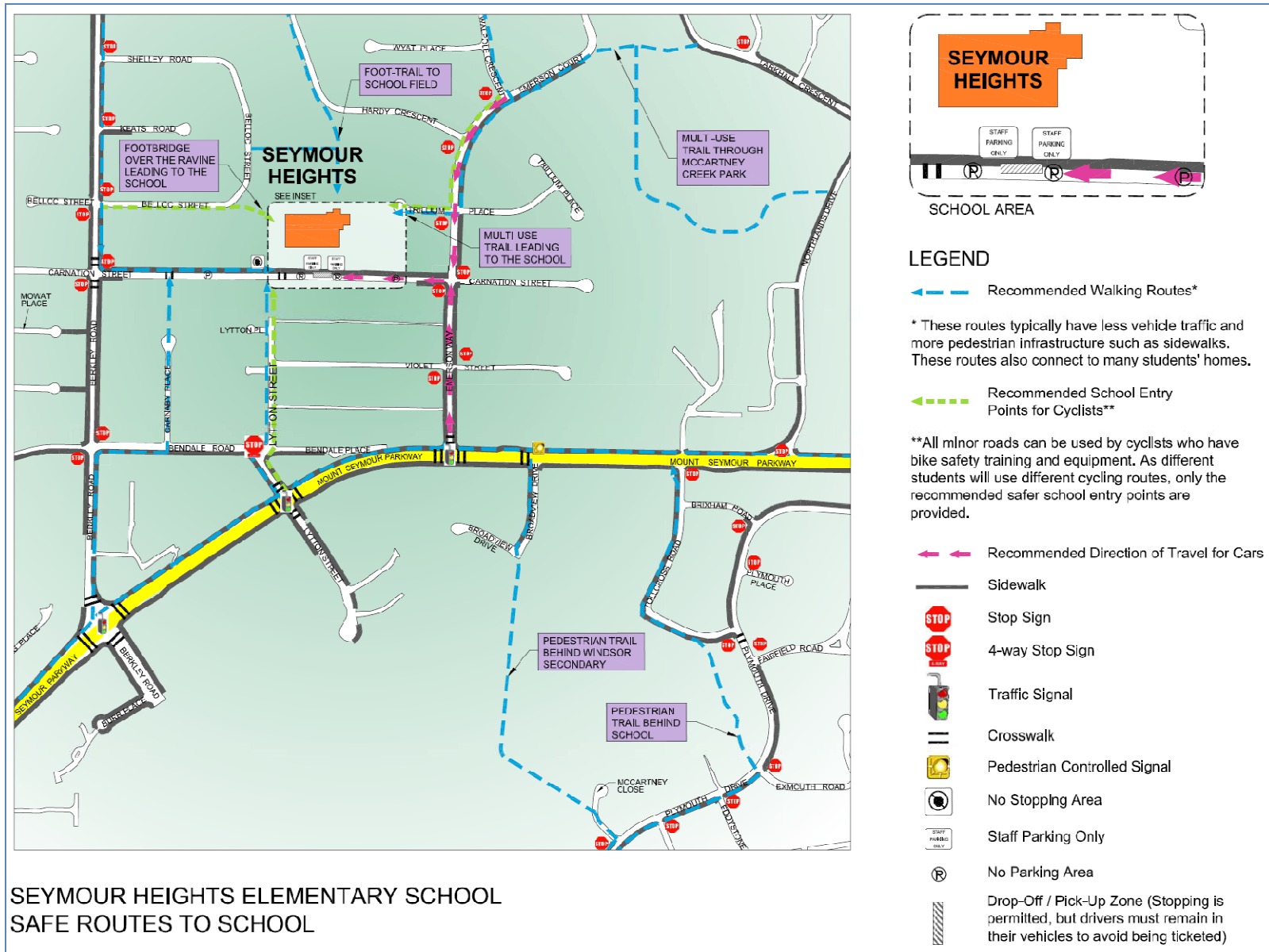


Figure 7: Safe Routes to School Map for Seymour Heights Elementary

3 LYNN VALLEY ELEMENTARY SCHOOL

3.1 Existing conditions and plans

Population

Lynn Valley Elementary is located on Institute Rd, which is a relatively quiet road. It is also situated between two of the community's most prominent streets – Lynn Valley Rd and Mountain Hwy. In fall 2009, the student population at Lynn Valley Elementary, from Kindergarten to Grade 7, was 195. With the additional students from Fromme Elementary, there are now 338 students at Lynn Valley.

Residential Location of Students

As shown in Figure 8, most students who were already attending Lynn Valley live south of Frederick Rd and east of Fromme Rd. Most of the new students from Fromme, as expected, live west of Mountain Hwy and north of Lynn Valley Rd. Many of the students, therefore, now have to cross Mountain Hwy, which is a relatively busy road.

Modes of Travel

According to Lynn Valley's school administration, historically the percentage of students who walk or bike to school on warm and dryer days is about 60%, including those who use scooters. On colder and wetter days, this percentage decreases, as more students are driven to school. According to Fromme's former school administrative staff, the percentage of students who walked to school was even higher than that of Lynn Valley. However, now that the walking distance for the relocated students has increased, it is expected more students are being driven to school.

As for the school staff, only one lives within walking distance. Therefore, almost all staff members currently drive to work.

School Transportation Facilities and General Layout

Access Points: The main entrance of Lynn Valley is located on Institute Rd. However, many students also access the school grounds from Mountain Hwy by going behind the North Shore Disability Resource Centre Association's building (located adjacent to the school) and through a gate opening located on the south side of the school. Students coming from the north along Mountain Hwy also often walk across the school gravel field instead of walking down Institute Rd or Mountain Hwy, or they walk across the community centre's parking lot before proceeding down Institute Rd. In the wet season, however, the gravel field can be difficult to use as rainwater tends to collect on the field and create many large pools of water.

Staff and Parent Parking: At the front of the school, there is currently a staff-only parking lot for 17 vehicles, including 1 handicapped parking stall. Parking for the general public and parents is available further north along Institute Rd, and along Mountain Hwy. Therefore, even though there are additional staff and students joining the school, parking availability is not a significant problem.

Drop-off/Pick-Up Zone: In front of the school on Institute Rd, there is a designated drop-off/pick-up only area. A valet service has been implemented, where older students trained by British Columbia Automobile Association (BCAA) and supervised by a volunteer parent escort younger students from their parents' vehicles to the school.

Pedestrian Facilities: Institute Rd only has sidewalks installed on one side of the street – the side where the school is located. There is a crosswalk at Lynn Valley Rd and Institute Rd intersection. However, the

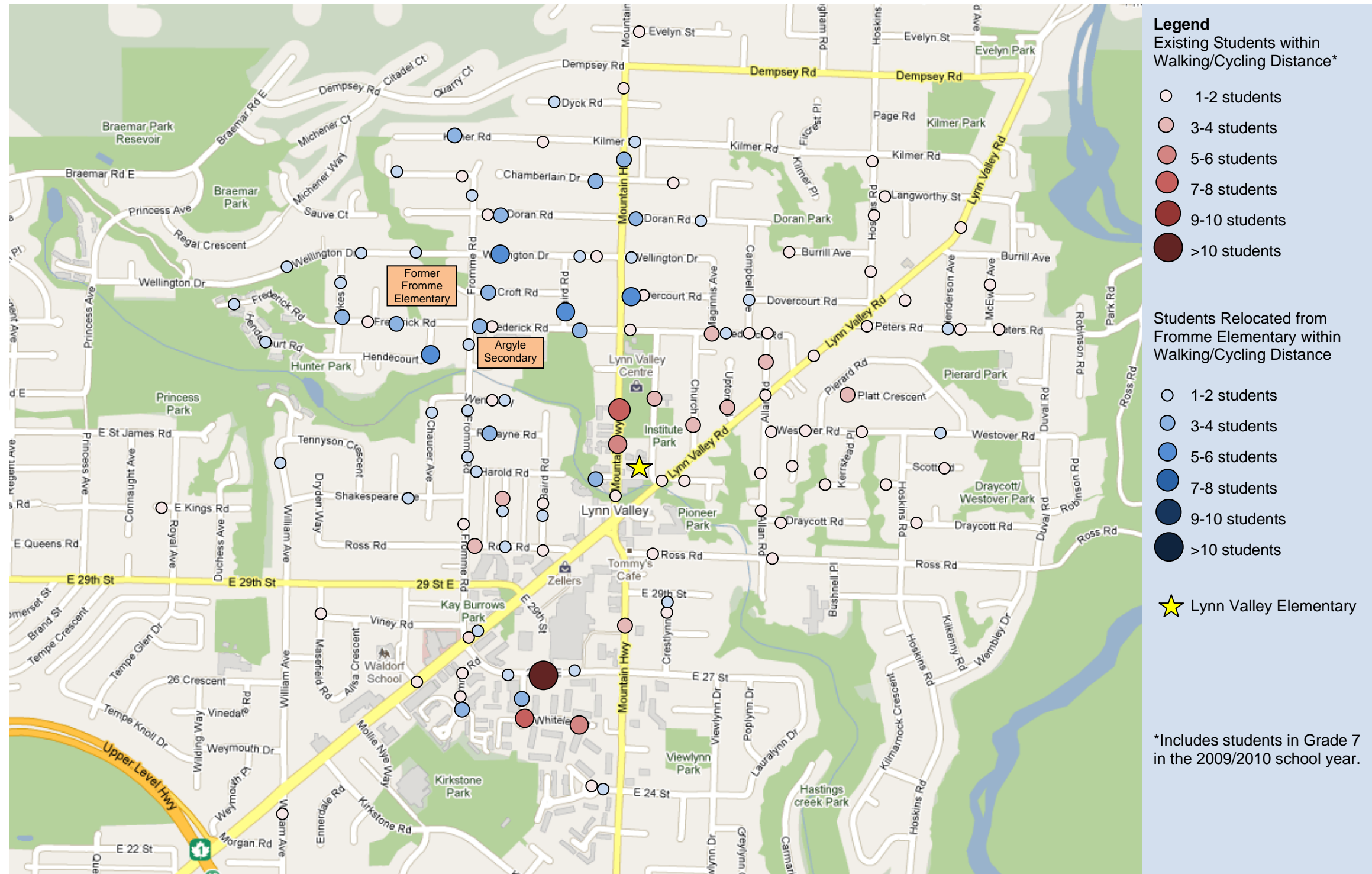


Figure 8: Approximate residential location of existing and new students within walking/cycling distance of Lynn Valley Elementary

sight line at the intersection is limited for both pedestrians and motorists, due to overgrown vegetation on a private property and the geometry of the intersection.

Bicycle Facilities: Located conveniently at the front of the school is a secured bicycle rack (see Figure 9). However, it is not protected from the elements. The nearest designated bicycle route is Lynn Valley Rd, but there are currently no signage or pavement markings indicating this is bike route.



Figure 9: Bike rack in front of school

Transit Facilities: As Lynn Valley Rd and Mountain Hwy are both prominent roads, they are serviced by several bus routes. Routes #210 and #292 operate along Mountain Hwy, while Routes #228 and #229 serve Lynn Valley Rd. The #255 bus route also stops near the Lynn Valley Rd and Mountain Hwy intersection. The headway during the drop-off/pick-up periods is approximately 15 minutes for #210 and #228, and 30 minutes for #229 and #255. Meanwhile, #292 only makes two trips in the late afternoon.

Nearby Community Facilities

The school is situated close to many amenities. There is an award winning pre-school on site called the BC Strong Starts program, as well as an Archive Museum and History Centre and the North Shore Disabilities Centre located directly adjacent to the school. The community centre is also located on the same block, just north of the school. As well, the Rainbow Corner Child Care Centre and the RNB Dance Theatre and Arts are located directly across Mountain Hwy, and the Bee Haven Child Care Centre is located on the other side of Institute Rd. The school is also within walking distance of the new public library at Lynn Valley Rd and Mountain Hwy, a shopping mall, Pioneer Park, and Argyle Secondary.



Figure 10: Rainbow Corner Child Care Centre, located across the school

3.2 Issues

3.2.1 Issues Identified by Parents

Immediate Vicinity of School

The main issue identified for the school area is that motorists often drive over the speed limit along Mountain Hwy. This is a concern, as many former Fromme students now have to cross this road to get to Lynn Valley Elementary. As well, there is a concern that there is currently no direct access to the school from Mountain Hwy.

There is also a concern that there is not enough drop-off space for students with special needs. This is especially problematic now, as there are several students with special needs who have relocated from Fromme.

As well, a parent has noted that the recent change in the school's schedule (classes now start a half hour earlier) means the drop-off and pick-up times coincide with that of Argyle Secondary, which is located on the other side of Mountain Hwy. As a result, there is more traffic congestion during the peak periods.

Neighbourhoods Around the School

Parents have expressed concern that motorists frequently fail to fully stop at the Frederick Rd/Mountain Hwy four-way stop. Some are also concerned about the additional traffic at that intersection that is created by parents dropping off and picking up students from Argyle Secondary.

Another major area of concern is the Lynn Valley Rd/Mountain Hwy intersection. Parents have noted that, considering the number of lanes pedestrians have to cross, the length of the walking signal is too short. They have also reported that motorists often do not pay enough attention to pedestrians who want to cross the road, especially when they are making right turns from Mountain Hwy onto Lynn Valley Rd

3.2.2 Other Additional Issues

Other issues identified by the school administration and by the consulting team during site visits include the following:

- Students often cross Mountain Hwy midblock instead of using the designated crosswalks at Frederick Rd or Harold Rd;
- There is a foot-bridge that connects Harold Rd to Mountain Hwy. However, there is no signage informing pedestrians where this foot-bridge leads to; and
- There are many local streets around the school that do not have a sidewalk on either side of the road.

3.3 Opportunities

One measure that has already been implemented to help improve access to the school from Mountain Hwy is an access gate. This was installed over the summer of 2010 so that students no longer have to walk around the school gates and behind the North Shore Disability Resource Centre to enter the school grounds.

In addition, Lynn Valley's school administration has been very active and had already prepared a draft traffic flow map with some recommended changes for the District, School District, and the consultant team to consider (see Appendix A). These recommendations have all been considered in this study.

As well, while Fromme Elementary has not organized any formalized walking school buses to date, some parents have formed their own walking groups. These informal walking groups could be made more formalized and be converted into walking school buses.

The valet service mentioned earlier has also been quite successful. The student volunteers and parents have enjoyed and appreciated the program, and this is seen as a priority for the Parent Advisory Committee. However, BCAA has recently withdrawn funding for this program so the status of this service in subsequent years is unknown at this time.

In addition, there is an angled on-street parking area further north on Institute Rd. This area could potentially be designated for school staff during school hours. As well, parking is available for parents in the morning at the community centre and the Archive Museum and History Centre.

Finally, TransLink has also identified Lynn Valley as a focus school for the TravelSmart program. This will be an excellent opportunity to increase student, parent, and staff awareness about alternative forms of transportation.



3.4 Recommendations

Similar to the recommendations that have been developed for Seymour Heights, the items listed in Table 2 have been developed based on an evaluation of the Lynn Valley school's existing conditions and issues. They also take into consideration the input that staff and parents have provided throughout this study.

The table below lists the high and medium priority recommendations, and these are based on safety and level of urgency considerations. Those recommendations that have already been completed based on the study's initial findings are also highlighted. Lower priority considerations have also been developed and these can be found in Appendix B.

As in section 2.4, the table below includes the purpose of each recommendation, the party responsible for implementing the recommendation, the estimated capital cost if the improvement being considered is implemented, and any additional comments. Further studies and/or evaluations may be required to determine the feasibility and effectiveness of the recommended measures.

In addition, it is recommended that the Safe Routes to School map shown in Figure 11 be disseminated to the parents, either as a hard copy as part of a parent notice insert or through the school website, or both. As indicated, the map shows where sidewalks, crosswalks, stop signs, curb extensions and traffic signals currently exist in the area immediately around the school and in the surrounding communities, as well as the recommended walking paths and school entry points for pedestrians and cyclists, respectively. It also shows the recommended flow of automobile traffic and drop-off/pick-up zones for drivers.

Table 2: Completed and Higher Priority Items for Consideration for Lynn Valley Elementary

COMPLETED Improvement	Purpose	Responsible Party		Comments
Install a total of two additional anti-idling signs at the current designated parking areas	To encourage parents to turn off their engines while waiting for their child(ren)	District of North Vancouver		Completed
Cut back the vegetation at the crosswalk at Institute Rd and Lynn Valley Rd and install sidewalk extension on both sides of crosswalk	To improve the sightline for pedestrians crossing Institute Rd from east to west and for motorists	District of North Vancouver		Completed
Request parking patrols to visit the school once a month during drop-off/pick-up times, on a randomly selected days	To encourage parents to comply with the parking restrictions	District of North Vancouver		Done
Have TransLink's TravelSmart program come and carry out educational campaigns at the school	To further promote the use of alternative modes of transportation (e.g. walking and cycling)	Lynn Valley Elementary		In preliminary planning stages
Encourage parents coming from the north along Mountain Hwy to drop off their child(ren) on Institute Rd rather than Mountain Hwy (via parent notices)	To avoid having students from crossing the road onto on-coming traffic	Lynn Valley Elementary		Done – also included in the Safe Routes to School Map (see Figure 11)
Have administrative staff supervise increased traffic flow at the designated drop-off and pick-up area during initial months of school	To ensure parents are complying with the drop-off and pick-up directions	Lynn Valley Elementary		Done
Request traffic police to monitor and ticket traffic violators on Mountain Hwy on a regular basis	To encourage motorists to obey the school zone speed limit	District of North Vancouver		Done

DISTRICT OF NORTH VANCOUVER SCHOOL SAFETY REVIEW



PROPOSED				
Items for Consideration	Purpose	Responsible Party	Estimated Capital Cost*	Comments
High Priority				
Consider installing a school zone or 30 km/hr sign on the north end of Institute Rd and along Mountain Hwy	To remind drivers of slow down in the school zone	District of North Vancouver	\$250/sign	
Explore the feasibility of extending the crossing time at Mountain Hwy and Lynn Valley Rd	To allow more time for pedestrians to cross the intersection and to accommodate a walking school bus	District of North Vancouver	N/A	
Examine the feasibility of converting the flashing red light at Frederick and Mountain Hwy to a full traffic signal	To provide a safer intersection for motorists and pedestrians	District of North Vancouver	\$150,000	
Consider completing the sidewalk on the north and south side of Frederick Rd between Sykes and Institute Rd	To improve the safety and comfort of a heavily used street by elementary and secondary school students	District of North Vancouver	\$121,500	Assume 1.5m wide sidewalk
Consider replacing the grass on the boulevard at the drop off/pick up zone with brick pavers (while leaving the trees in place)	To prevent students from slipping on the grass when it is wet	District of North Vancouver	\$5,000	
Consider replacing the grass on the boulevard at the wheelchair drop-off/pick-up zone with brick pavers or add a concrete ramp if possible (while leaving any existing trees in place)	To improve sidewalk access for wheelchair users	District of North Vancouver	\$5,000	
Continue with valet program and ask BCAA to restore funding for the program	To be able to continue valet service training and to fund other associated costs	Lynn Valley Elementary	N/A	
Request garbage and recycling collection to be done outside of the 8:30am-9:00am window	To prevent garbage and recycling collection trucks from taking up parking spaces	District of North Vancouver	N/A	
Medium Priority				
Consider completing the sidewalks on both sides of Mountain Hwy, between Wellington and Coleman	To enhance the pedestrian environment of a heavily used street by elementary and secondary school students	District of North Vancouver	\$82,500	Assume 1.5m wide sidewalk

*Order-of-magnitude estimates only. More refined cost estimates will require further examination of the work that is required. Design and construction administration costs are also not included. Once it is determined which improvements will be implemented, a contingency of 15-20% should be applied to the more refined cost estimates.

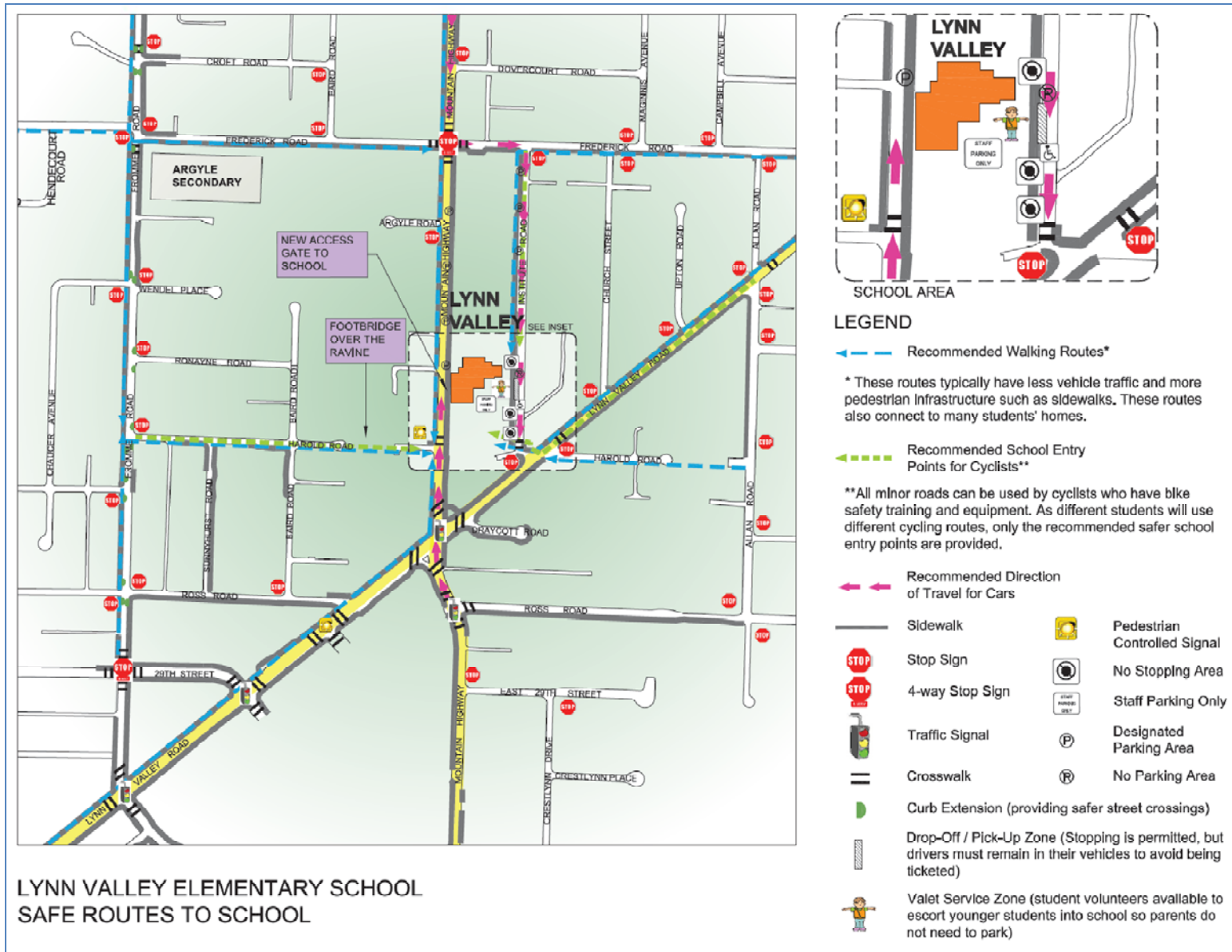


Figure 11: Safe Routes to School Map for Lynn Valley Elementary

4 UPPER LYNN ELEMENTARY SCHOOL

4.1 Existing conditions and plans

Population

Upper Lynn Elementary is located on Coleman St, between Hoskins Rd and Ramsey Rd, on a north-south sloping site. In 2009/2010, there were approximately 500 students attending the school, from kindergarten to grade 7. Starting September 2010, with the addition of 23 new students from Fromme Elementary, the student population is now 498.

Residential Location of Students

As shown in Figure 14, most students who live within walking or cycling distance of the school site and were attending Upper Lynn in 2009/2010 live north of Kilmer Rd and east of Mountain Hwy. Meanwhile, almost all of the new students from Fromme live south of Kilmer Rd and west of Hoskins Rd.

Modes of Travel

As with the other two schools, there is a relatively high proportion of students who are driven to school. The remainder walk, bike, or use a scooter to get to school. Most staff also travel by car. Only one staff member is within walking distance and there is another staff member who cycles on warmer, dryer days.

School Transportation Facilities and General Layout

Access Points: The main entrance of the school is located on Coleman St. However, a foot-trail also connects McNair Place to the school field and playground, located at the back of the school. This trail, however, is not well marked.

Staff Parking: There is a designated staff-only parking lot in front of the school, just east and west of the school entrance doors (see Figure 12). There are a total of 40 parking stalls, including one handicapped parking stall and one service truck stall. Starting September 2010, there are now 45 staff members working at the school. Assuming the staff member who lives within walking distance does not require a parking space and all of the other staff members drive alone to work, there is likely demand for 6 additional staff parking spaces to be provided.



Figure 12: Parking lot for staff and mobility-impaired students/staff

Parent Parking: The drop-off/pick-up only zones are located east and west of the main school entrance. However, parents often park in these areas while escorting their children into the school or waiting for classes to end. Parking is available (for a maximum of two hours) for parents further east and west of the school along Coleman St. Many parents also often park along Nottingham Rd.

Pedestrian Facilities: There are sidewalks on both sides of Coleman St for most of the street length. However, the sidewalk on the north side of Coleman St stops abruptly just west of the school. There is also a crosswalk at Nottingham and Coleman, which is used by many students and their families.



Figure 13: Crosswalk at Nottingham Rd and Coleman St

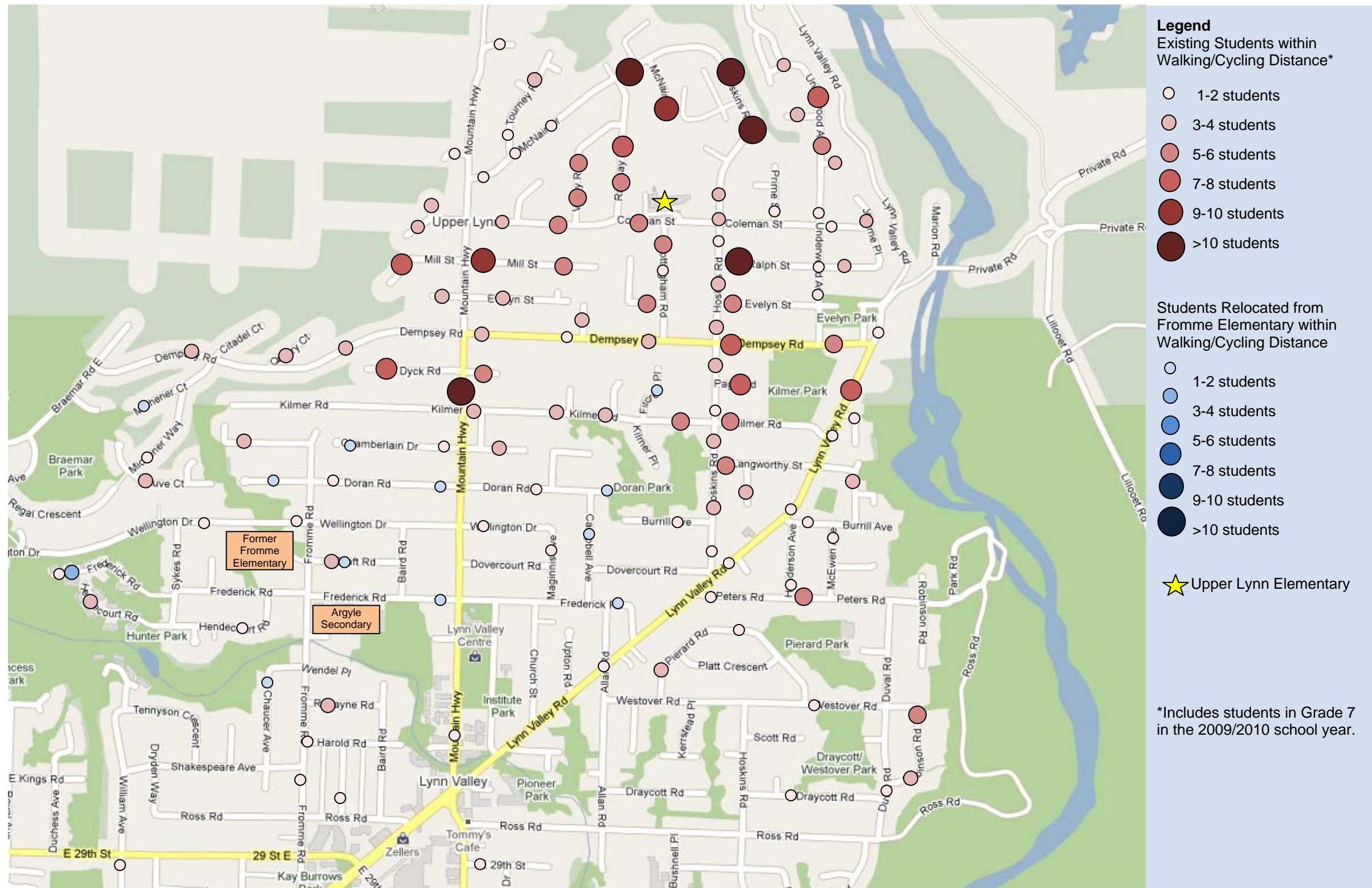


Figure 14: Approximate residential location of existing and new students within walking/cycling distance of Upper Lynn Elementary

Bicycle Facilities: At the front of the school, there is an uncovered secured bicycle rack. However, there are no designated bike routes located close to the school.

Facilities for Students with Special Needs: As the school is on a slope, the school building is at a higher elevation than Coleman St. As a result, students have to go up two sets of stairs to enter the school building. Wheelchair ramps are available; however, the wheelchair ramp located closer to the school building takes a relatively long path and wheelchair users have to go all the way to the west side of the school building to access the ramp (see Figure 15).

There is also a curb ramp on the north sidewalk at Nottingham and Coleman for wheelchair users. However, this ramp does not align with the crosswalk. A curb ramp is also missing on the other side of the street.



Figure 15: Wheelchair ramps at school entrance

Transit Facilities: Transit service is available on streets located within a few blocks of the school.

The #210 serves Coleman St in the westbound direction until it reaches Hoskins Rd, and then it turns northwards and continues along Coleman St. Coming back in the other direction, instead of turning onto Coleman St, the #210 continues down Hoskins Rd until it reaches Dempsey Rd. Three blocks south of the school, the #228 also serves Dempsey Rd in the westbound until it reaches Hoskins Rd. A third bus route, #292, also stops at Hoskins Rd and Dempsey Rd. However, it only makes two trips and it only operates in the late afternoon, after 4pm. As mentioned before, the headway during the peak drop-off/pick-up periods is 15 minutes for #210 and #228.

Nearby Community Facilities

There are relatively few community facilities located close to the school site. There are, however several parks located within walking distance, including Kilmer Park, Evelyn Park, and Doran Park.

4.1.1 Issues identified by parents

Immediate Vicinity of School

A number of different issues have been identified by parents for the school area. These include the following:

- There is considerable congestion along Coleman St during pick-up and drop-off periods, especially at the Nottingham intersection;
- Parents are not complying with parking restrictions;
- Parents are using residential driveways to make U-turns, creating potential pedestrian-vehicle conflicts;
- There is an insufficient number of parking spaces for parents;
- There are vehicles that are left idling; and
- There is a lack of sidewalk space on the north side of Coleman St, just west of the school.

A parent also noted that the sidewalks around the school area are usually not ploughed quickly enough after a snow event.



Neighbourhoods around the School

Parents have expressed concern that motorists frequently speed along Coleman St upon entering from Mountain Hwy. Drivers also often ignore the four-way stop at Hoskins Rd and Coleman St. Parents have also noted the lack of crosswalks at commonly used intersections, including Hoskins Rd and Coleman St, Dempsey Rd and Underwood Ave (where Kilmer Park is located), and Lynn Valley Rd and Peters Rd.

4.1.2 Other Additional Issues

Consultations with staff administration and observations made during site visits have also helped identify the following additional issues:

- The yellow paint on the curb of Coleman St and Nottingham Rd is fading;
- The sight line at the Coleman St and Nottingham Rd intersection is partially obscured by overgrown vegetation on a private property; and
- There is a lack of sidewalks on neighbouring local streets.

4.2 Opportunities

The study's consultation results indicate that a large number of parents already recognize there are too many students being driven to school, considering that students generally live within walking distance of the school site. Many parents also seem to support a walking school bus program. These general attitudes suggest that a significant number of parents already understand the benefits of shifting to active modes of transportation. Therefore, programs such as the walking school bus will likely be well supported and thus easier to implement if funding is available.

4.3 Recommendations

The recommendations described in this section have been developed based on feedback provided by parents and school staff, and an evaluation of the school's existing conditions and issues. Only the higher priority recommendations, as determined by safety and level of urgency considerations, have been included in this section. The lower priority items can be found in Appendix B. For each recommendation, the purpose, responsible party, and any additional comments are provided within the table. As well, the estimated associated capital cost if the improvement being considered is implemented is provided. Improvements that have already been completed since the study began are also included. As noted before for the other two schools, further studies and/or evaluations may be required to determine the feasibility and effectiveness of the recommended measures.

Similar to the other two schools, it is also recommended that the Safe Routes to School map shown in Figure 16, which was developed as part of this study, be distributed to the parents (either as a hard copy as part of a parent notice insert or through the school website, or both). The map shows the current location of sidewalks, crosswalks, stop signs, curb extensions and traffic signals, both in the immediate school area and in the surrounding communities. It also highlights the recommended walking paths and school entry points for pedestrians and cyclists, respectively, as well as the recommended direction of travel and drop-off/pick-up zones for drivers.



Table 3: Completed and Higher Priority Improvements Recommended for Upper Lynn Elementary

COMPLETED				
Improvement	Purpose	Responsible Party		Comments
Repaint yellow curb at the top of the hill on Nottingham and add a “No Stopping Anytime” sign on both sides of the hill, at the beginning of the yellow curb	To increase the visibility of the yellow curb and to relieve traffic congestion at Nottingham and Coleman	District of North Vancouver		Completed
Repaint a portion of the yellow curb in front of the school	To increase the visibility of the yellow curb	District of North Vancouver		Completed
Cut back the vegetation at the corner of Coleman St and Nottingham Rd		District of North Vancouver		Completed
Request parking patrols to visit the school once a month during drop-off/pick-up times, on a randomly selected days	To encourage compliance with parking restrictions	District of North Vancouver		Done
Encourage parents to access the school via Hoskins and to travel east to west along Coleman	To avoid having students from crossing the road onto on-coming traffic	Upper Lynn Elementary		Done – also included in the Safe Routes to School Map (see Appendix B)
PROPOSED				
Items for Consideration	Purpose	Responsible Party	Estimated Capital Cost *	Comments
High Priority				
Explore the possibility of completing the sidewalk on the north side of Coleman St, from Ramsey to Hoskins	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$135,000	Assume 1.5m wide sidewalk. Will require some retaining wall construction
Consider installing a crosswalk across Hoskins, on the south side of Coleman, and across Coleman, on the west side of Hoskins	To increase the visibility of the intersection and to warn motorists to be more cautious	District of North Vancouver	\$3,000	
Consider installing a crosswalk across Dempsey Rd at Underwood Ave, on the west side of Underwood	To provide a safer crossing for pedestrians	District of North Vancouver	\$1,500	
Consider installing crosswalks at Hoskins and Dempsey Rd, and across Hoskins at Ralph St	To provide safer crossings for pedestrians	District of North Vancouver	\$3,000	
Encourage parents who drive to travel south along Nottingham (via parent notices)	To reduce traffic congestion at the Nottingham/Coleman intersection	Upper Lynn Elementary	N/A	Also included in Safe Routes to School Map (see Figure 16)
Medium Priority				
Consider installing a curb extension at the crosswalk in front of the school on Coleman	To reduce vehicle speeds and to improve sightlines for pedestrians	District of North Vancouver	\$8,000	

*Order-of-magnitude estimates only. More refined cost estimates will require further examination of the work that is required. Design and construction administration costs are also not included. Once it is determined which improvements will be implemented, a contingency of 15-20% should be applied to the more refined cost estimates.

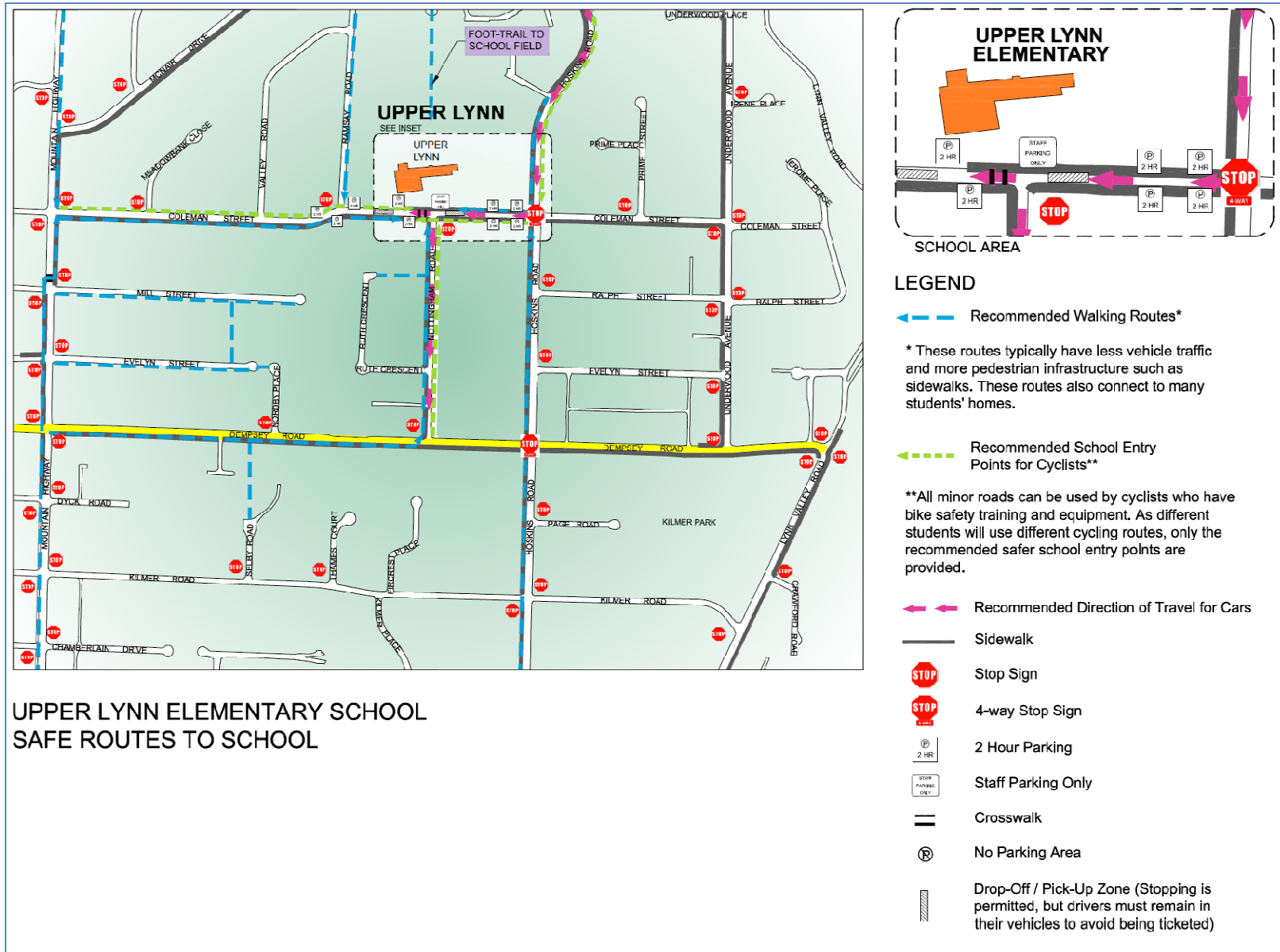


Figure 16: Safe Routes to School Map for Upper Lynn Elementary

5 OTHER GENERAL RECOMMENDATIONS

To have a more comprehensive evaluation of the recommendations included in this report and to determine how the suggested improvements may impact other municipal operations, it is recommended that the high priority items highlighted for each school be brought forward to the District of North Vancouver Traffic Safety Committee. This group includes members of the Royal Canadian Mounted Police (RCMP), BCAA, Insurance Corporation of British Columbia (ICBC), the fire department, TransLink, School District #44, and the planning and transportation engineering developments of the District of North Vancouver. If these improvements have the potential to negatively impact the operations of these groups, then these issues, as well as their potential solutions, can be discussed at the meetings of the Committee. Bringing the high priority items to this specific Committee will also help raise the profile of these items and increase the likelihood that they will be seriously considered.

As mentioned earlier, Appendix B includes some of the lower priority considerations, which may be important but are difficult to implement in the short-term given a lack of resources (e.g., funding, staff, etc.). To help fund some of these improvements such as new sidewalks and traffic calming measures, which are important to have in a pedestrian-friendly community but require significant funds to build, residents can be encouraged to fund these infrastructure projects through the Local Improvement initiative. Through the General Local Improvement Cost-Sharing Bylaw, project costs for local service works such as sidewalks and traffic calming measures can be cost-shared between residents living on properties benefiting from or abutting the local area service work. This is a funding strategy that was also highlighted in the 2009 North Vancouver Pedestrian Master Plan.

As well, to ensure the implemented measures are producing the desired effect (e.g. slowing down vehicle speeds to meet speed limits), evaluation surveys such as traffic counts, mode split surveys, and vehicle speed surveys should be conducted where appropriate. Some of the less complex and technical surveys could be conducted by Parent Advisory Committees, school staff, and/or school district staff, while others may need to be conducted by the District of North Vancouver.

In addition, it is recommended that snow removal on sidewalks be conducted in a timely manner, especially along the recommended walking routes. Some parents have pointed out that the snow on sidewalks is often left uncleared, and at the same time driving conditions are unsafe. As a result, students are unable to get to school. It is therefore recommended that the snow removal plans for the schools and surrounding neighbourhoods be revised if necessary to reflect the recommendations included the Safe Routes for School maps.

Finally, many of the recommendations include considering putting up additional signage for various purposes. However, having too many signs can cause confusion and be a distraction for motorists, acting as a safety hazard. Therefore, it is recommended that signage be combined whenever possible. This will reduce help costs and improve safety and clarity.

6 CONCLUSIONS

The results of this study indicate that there are several common issues found at Seymour Heights Elementary, Lynn Valley Elementary, and Upper Lynn Elementary Schools. These include the following:

- There is a significant percentage of parents who drive their children to school. Therefore, the demand for parking is greater than the supply;
- Parents often ignore parking restrictions;
- With additional staff being added to each school, the demand for staff parking also exceeds supply;
- There is at least one main problematic intersection at each school where motorists often speed and/or ignore stop signs or traffic signals;

- Motorists speeding along arterial streets are a concern to parents;
- There are many local streets that lack sidewalks and/or marked crossings;
- There is a lack of designated cycling lanes;
- The walk signal at traffic lights are often too short to allow enough time for pedestrians, especially a large group such as a Walking School Bus, to clear the intersection in time; and
- Wheelchair-accessible drop-off zones are often lacking at the schools.

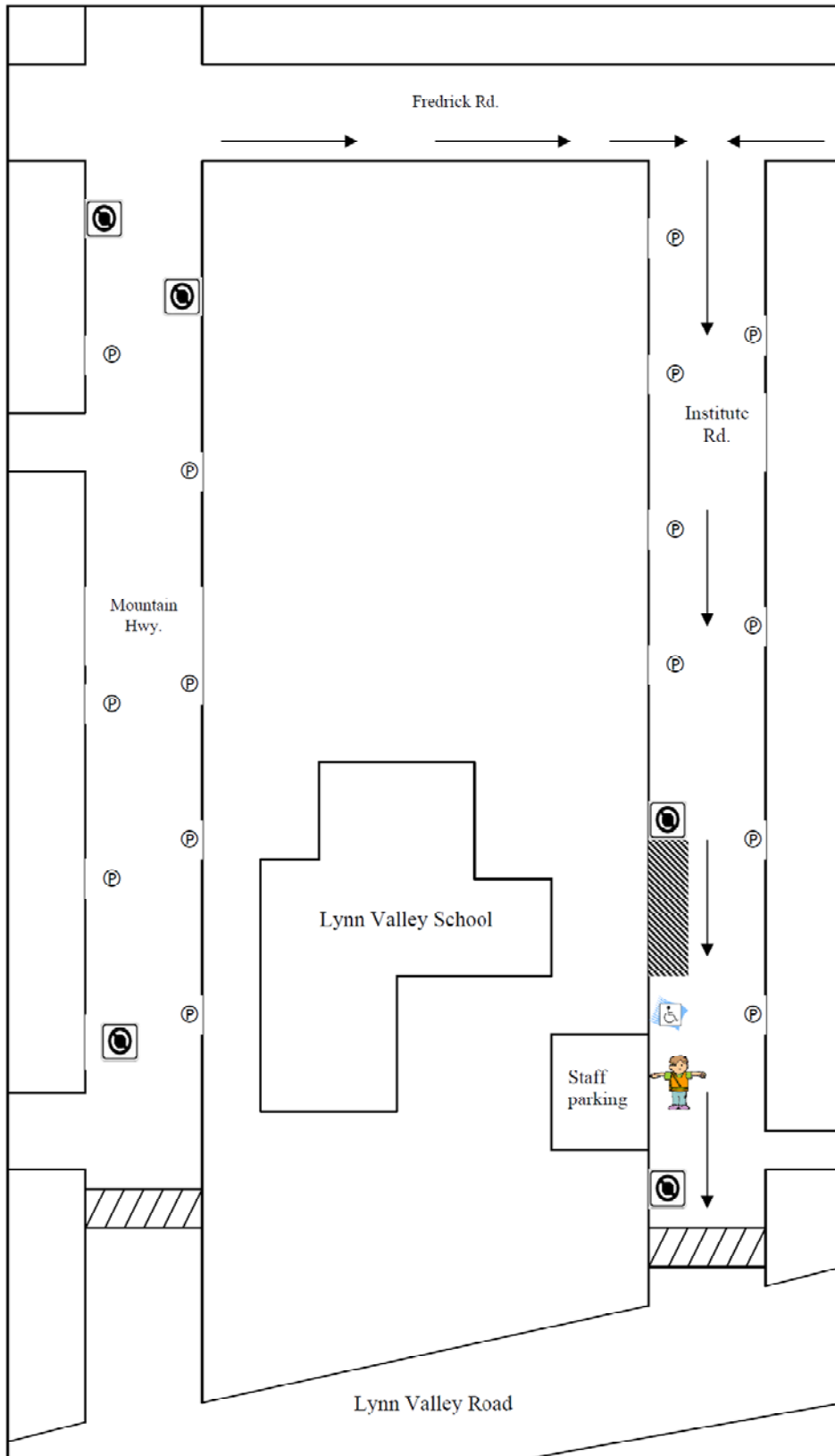
The approach taken to address these issues has been to develop a list of improvements (informed by staff and parent feedback) for the schools, District of North Vancouver, and the School District to consider and to look at in further detail. These improvements focus on the following types of solutions:

- Provide or continue valet parking programs if possible;
- Encourage parents and students to walk and cycle, by:
 - Providing more sidewalks and marked crossings (mainly focusing on routes that would be more likely used by students given their location of residence);
 - Implementing a Walking School Bus program if funding permits;
 - Implementing traffic calming measures;
 - Providing signage to mark public pedestrian trails, which can help shorten walking distances and connect streets that are otherwise disconnected; and
 - Providing Safe Routes to School maps, which show recommended walking routes and points of school entry for cyclists.
- Provide a school bus program if possible;
- Inform and remind parents of parking restrictions through signage and parent notices, and request parking patrols to make regular visits to the schools;
- Encourage staff to walk, cycle, or take transit whenever possible and using incentive programs to increase uptake of alternative modes;
- Improve the safety at the main problematic intersections through various means, such as a four-way stop, traffic signal, etc.
- Post up more speed limit and caution signs on streets where speeding is common, and request more enforcement of speeding violations;
- In the longer term, implement dedicated cycling lanes;
- Where necessary and feasible, extend the walk signal at a traffic light and shorten the time it takes for a walk signal to activate; and
- Build wheel-chair accessible drop-off zones at the schools where possible.

It is recognized, however, that not all of these improvements will be possible due to resource constraints. As such, a list of high and medium priority items have been included in the main body of this report, while the lower priority items have been included in Appendix B. It is recommended that these high and medium priority items be given more serious consideration and that the high priority items be brought forward to the District of North Vancouver Traffic Safety Committee for further discussion. Some of the lower priority items, such as sidewalks and traffic calming measures, are also important, but have not been included in the main body of the report due to the significant funds that are required. A potential solution would be to fund these projects through the Local Improvement initiative, so that the cost of a project can be shared between the benefitting residents. Finally, to ensure the measures that are implemented are indeed effective, it is recommended that on-going monitoring be done, that snow removal on sidewalks be conducted in a timely fashion, and that any additional signage be combined whenever possible to avoid confusion and to reduce distraction.









**APPENDIX A - TRAFFIC FLOW MAP CREATED BY LYNN VALLEY
ELEMENTARY**



**Lynn Valley School
Parking and Traffic
Flow Map**
Revised: July 7, 2010
Not to scale

Legend:

-  Valet Drop Off in the morning and Drop off/ Pick up zone the rest of the time (please see below)
-  Proposed Handicapped drop off
-  Parking Allowed
-  No Stopping
-  Cross Walk
-  Drop off/ pick up zone (sign indicates no parking) Stopping is permitted, but drivers must remain in their vehicles to avoid being ticketed.

- Pedestrian and Traffic Safety Recommendations:**
1. Encourage as many students to walk to school
 2. Encourage parents to park their vehicle away from the school and walk the students onto the school grounds
 3. Traffic flow southbound only on Institute road.
 4. Parents use the valet service during drop off
 5. Pedestrians use the cross walk
 6. Pedestrians on west side walk along sidewalk and enter the school grounds at the gate at the southwest corner of the school on Mountain Hwy side
 7. Do not use staff parking lot for pick up and drop off
 8. Do not drop students off north bound on Institute Rd. or south bound on Mountain Hwy and have students cross the road (unless they are using the crosswalk)
 9. Obey all traffic and parking regulations



APPENDIX B - LOWER PRIORITY ITEMS FOR CONSIDERATION

DISTRICT OF NORTH VANCOUVER SCHOOL SAFETY REVIEW



Seymour Heights Elementary

Items for Consideration	Purpose	Responsible Party	Estimated Capital Cost*	Comment
Signage and Markings				
Consider constructing a four-way stop at Carnation and Berkley	To eliminate right-of-way conflicts	District of North Vancouver	\$1,000	
Consider constructing a four-way stop at Swinburne and Berkley	To eliminate right-of-way conflicts	District of North Vancouver	\$3,500	
Consider installing "Caution" signs along Mt Seymour Pkwy	To warn motorists of pedestrians who may be crossing Mt. Seymour Pkwy	District of North Vancouver	\$250/sign	
Consider installing a permanent "Caution – Slow Down, Children Playing" sign along Carnation, just east and west of the school	To warn motorists of children who may be playing in the area	District of North Vancouver	\$250/sign	
Change the "No Parking Anytime" sign to "No Parking 8am-9am & 2:30-3:30pm" and adding in text informing parents of the fine for illegal parking	To allow drivers to park in front of the school during non-school peak hours so that they do not have to park in front of people's homes	District of North Vancouver	\$250/sign	
Consider posting up speed limit signs along Mt Seymour Pkwy	To remind motorists of the speed limit	District of North Vancouver	\$250/sign	
Consider installing signs in the middle of Carnation facing both directions of traffic informing parents that U-turns are not allowed	To discourage parents from making U-turns	District of North Vancouver	\$250/sign	
Consider installing signs at the Trillium, Belloc, Carnaby Pl, and Hardy Crescent footpaths informing pedestrians that the paths lead to the school	To enhance wayfinding	District of North Vancouver	\$250/sign	
Consider installing a sign warning motorists turning left from Broadview onto Mt Seymour Pkwy to look for pedestrians	To warn motorists to look for pedestrians	District of North Vancouver	\$250	
Consider installing an additional 50km/hr speed sign along Berkley	To remind motorists of the speed limit	District of North Vancouver	\$250	
Consider putting in 50km/hr marking on Berkley at several points	To remind motorists of the speed limit	District of North Vancouver	\$1,000/marking	
Consider putting in a crosswalk and erecting pedestrian signs at Swinburne and Berkley	To provide a safer crossing location for pedestrians	District of North Vancouver	\$1,500	
Consider erecting a pedestrian sign at Byron and the Walpole trail	To warn motorists of pedestrians coming to and from the Walpole trail	District of North Vancouver	\$250	
Pedestrian Infrastructure				
Consider installing a raised crosswalk at Lytton and Carnation, where the current trail from Lytton connects to Carnation	To reduce vehicle speeds and enhance the pedestrian environment	District of North Vancouver	\$5,000	Assume a 5m wide x 12m long raised crosswalk. Includes sawcutting on each side, crush gravel to raise the height of the crossing, 75mm asphalt, paint lines, and signage.

DISTRICT OF NORTH VANCOUVER SCHOOL SAFETY REVIEW



Items for Consideration	Purpose	Responsible Party	Estimated Capital Cost*	Comment
Explore the idea of providing motion-sensored lights along the pedestrian pathways leading from Belloc, Hardy Crescent, and Trillium	To improve pedestrians' sense of security	District of North Vancouver	\$7,000	
Consider the possibility of putting in crosswalks at Lytton and Bendale	To provide safer pedestrian pathways	District of North Vancouver	\$3,000	
Consider installing curb extensions at the crosswalk just west of the school	To improve the sightlines for pedestrians and for motorists	District of North Vancouver	\$8,000	
Consider installing a sidewalk on the west side of Emerson	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$325,000	Assume 1.5m wide sidewalk
Explore the possibility of installing sidewalks on surrounding streets without sidewalks which are used by students - e.g. Brixham, Lytton, Belloc, Hardy Crescent, Walpole Crescent, Strathaven Dr	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$822,500	Assume 1.5m wide sidewalk
Consider installing a sidewalk on both sides of Plymouth Dr	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$495,000	Assume 1.5m wide sidewalk
Consider installing sidewalk on the south side of Carnation, between Emerson and Lytton	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$16,500	Assume 1.5m wide sidewalk
Explore the idea of building a footpath connecting Browning Pl and Bendale	To provide more direct connections for pedestrians	District of North Vancouver	\$12,000	Would have to ensure property acquisition is not required
Parking				
Consider a trial to have designated carpooling parking stalls for staff with pavement markings	To encourage staff to carpool	Seymour Heights Elementary	\$500	Pavement markings/signage only
Explore the feasibility of introducing a valet program and recruit parent volunteers to supervise student volunteers and request BCAA for funding	To encourage parents to just drop-off their child(ren) and not park	Seymour Heights Elementary	N/A	
Traffic Calming				
Consider installing two speed cushions or humps on Emerson with accompanying signage	To reduce vehicle speeds and enhance the pedestrian environment	Seymour Heights Elementary	\$8,000	
Consider rehabilitating the speed bump at the entrance of the drop-off area	To improve the effectiveness of the speed bump	Seymour Heights Elementary and School District #44	\$1,000	
Cycling Infrastructure				
Consider installing a new bike rack under the overhang in front of the school	To provide a sheltered bike storage area	Seymour Heights Elementary	\$1,500	
Traffic Signals				
Consider installing audible pedestrian countdown signals at Mt Seymour Pkwy and Lytton, Emerson, and Berkley	To increase safety for pedestrians with hearing impairments	District of North Vancouver	\$65,000	

DISTRICT OF NORTH VANCOUVER SCHOOL SAFETY REVIEW



Stantec

Items for Consideration	Purpose	Responsible Party	Estimated Capital Cost*	Comment
Programmatic Changes				
Strongly encourage staff to use alternative modes to travel (public transit, carpooling, walking, and cycling) by providing customized travel information and incentives such as gift certificate and discounted transit passes	To reduce parking demand	Seymour Heights Elementary	N/A	
Consider piloting a Crossing Guard Program at Emerson and Mt Seymour Pkwy	To provide a safer environment for pedestrians crossing Mt Seymour Pkwy	Seymour Heights Elementary and School District #44	N/A	
Explore creative ideas to provide and fund a service similar to a school bus program	To reduce vehicle traffic at the school and in the neighbourhoods around the school	Seymour Heights Elementary	N/A	

DISTRICT OF NORTH VANCOUVER SCHOOL SAFETY REVIEW



Lynn Valley Elementary

Items for Consideration	Purpose	Responsible Party	Estimated Capital Cost*	Comments
Signage and Pavement Markings				
Consider enhancing crosswalks at Frederick Rd and Mountain Hwy with larger stop signs	To enhance the safety of pedestrians crossing Mountain Hwy	District of North Vancouver	\$500	This would not be required if there is a full traffic signal at the intersection
Consider installing a sign on Mountain Hwy, just north of Frederick Rd, directing parents to drop off their child(ren) on Institute Rd rather than Mountain Hwy	To direct parents dropping off their children to turn onto Institute Rd	District of North Vancouver	\$250	
Consider installing a sign at the cul-de-sac at Harold Rd, west of the school, indicating that the foot bridge leads to the school	To provide better wayfinding for pedestrians	District of North Vancouver	\$250	
Consider replacing the current "No Parking Anytime" signs in front of the school with similar signage, adding in text informing parents of the fine for illegal parking	To discourage parents from parking illegally	District of North Vancouver	\$250/sign	
Pedestrian Infrastructure				
Consider installing a sidewalk on the east side of Institute Rd	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$85,500	Assume 1.5m wide sidewalk
Consider installing a sidewalk on north side of Ross between Hoskins and Mountain Hwy	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$43,500	Assume 1.5m wide sidewalk
Consider adding a crosswalk across Allan Rd, on the south side of Lynn Valley Rd	To provide more a safer crossing for pedestrians	District of North Vancouver	\$1,500	
Consider installing a sidewalk on the east side of Mountain Hwy between 27 th and 29 th Ave	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$61,000	Recommended in the District's Pedestrian Master Plan as an "early winner". Assume 1.5m wide sidewalk
Consider completing the sidewalk on east side of Fromme from Ronayne to Ross	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$150,000	Assume 1.5m wide sidewalk
Explore the idea of installing sidewalks on Harold and Baird, west of the school, and on Church St, Upton Rd, and Allan Rd, north of Lynn Valley Rd	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$540,000	Assume 1.5m wide sidewalk and total length of 1080m. Consider combining projects in 1 design and construction tender to reduce cost
Consider installing sidewalk on northwest side of Lynn Valley Rd between Hoskins and Burrill Ave	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$125,000	Assume 1.5m wide sidewalk

DISTRICT OF NORTH VANCOUVER SCHOOL SAFETY REVIEW



Items for Consideration	Purpose	Responsible Party	Estimated Capital Cost*	Comments
Parking				
Consider designating the angled parking area along Institute Rd for staff parking with signage	To provide more designated staff parking space	District of North Vancouver	\$250/sign	
Encourage parents who wish/need to park during drop-off and pick-up times to use the parking lot of the recreational centre and/or the Community Archives centre	To reduce congestion along Institute Rd during pick-up and drop-off times	Lynn Valley Elementary	N/A	
Traffic Calming				
Consider putting in curb extensions at all four corners at Frederick Rd and Mountain Hwy for pedestrians crossing Mountain Hwy	To reduce vehicle speeds and to improve the pedestrian environment	District of North Vancouver	\$12,000	
Consider measures to slow down traffic along Institute Rd (e.g. speed cushions)	To reduce vehicle speeds and to improve the pedestrian environment	District of North Vancouver	\$4,000/speed cushion	
Cycling Infrastructure				
Consider providing a bike rack on the west side of the school under the overhang	To provide a sheltered bike storage area	Lynn Valley Elementary and School District #44	\$500	
Consider establishing bicycle stencil markings and "share the road" signs along Lynn Valley Rd, from Grand Blvd to Dempsey Rd, which is already designated as a bike route	To warn motorists to look out for cyclists and to encourage more people to cycle	District of North Vancouver	\$250 per sign/stencil	
Explore the feasibility of designating Fromme, from Lynn Valley Rd to Wellington, a bike route and put in bicycle stencil markings and "share the road" signs	To warn motorists to look out for cyclists and to encourage more people to cycle	District of North Vancouver	\$250 per sign/stencil	
Explore the feasibility of designating Wellington, from Princess Ave to Maginnis Ave, a bike route and put in bicycle stencil markings and "share the road" signs	To warn motorists to look out for cyclists and to encourage more people to cycle	District of North Vancouver	\$250 per sign/stencil	
Consider building a shelter over the existing bike rack in front of the school	To protect bikes from the elements	Lynn Valley Elementary and School District #44	\$7,000	
Programmatic Changes				
Try coordinating a Walking School Bus Program	To reduce vehicle traffic to and from the school, to promote physical activity, and to reduce the negative environmental impacts of vehicle use	Lynn Valley Elementary	N/A	
Strongly encourage staff to use alternative modes to travel (public transit, carpooling, walking, and cycling) by providing customized travel information and incentives such as gift certificate and discounted transit passes	To reduce parking demand	Lynn Valley Elementary	Depends on the incentives provided	
Consider a pilot Crossing Guard Program at Mountain Hwy and Frederick Rd	To provide a safer environment for pedestrians crossing Frederick Rd and Mountain Hwy	Lynn Valley Elementary and School District #44	N/A	

DISTRICT OF NORTH VANCOUVER SCHOOL SAFETY REVIEW



Upper Lynn Elementary

Items for Consideration	Purpose	Responsible Party	Estimated Capital Cost *	Comments
Signage and Pavement Markings				
Consider installing a four-way stop at Mountain Hwy and Dempsey Rd	To improve the safety of pedestrians who cross Dempsey Rd at Mountain Hwy	District of North Vancouver	\$3,500	
Consider installing a sign on McNair Dr and Ramsey Rd, directing parents to access the school from the east, via Hoskins Rd	To encourage parents to drop off their child(ren) on the north side of Coleman Rd, thereby avoiding the need for students to cross Coleman Rd	District of North Vancouver	\$250	
Consider installing a total of 3 anti-idling signs at the designated parking areas	To encourage parents to turn off their engines while waiting for their child(ren)	District of North Vancouver	\$750	
Consider installing a sign at McNair Pl, indicating the trail that leads to the school	To provide better wayfinding for pedestrians	District of North Vancouver	\$250	
Consider replacing the current "No Parking Anytime" signs in front of the school with similar signage, adding in text informing parents of the fine for illegal parking	To discourage parents from parking illegally	District of North Vancouver	\$250/sign	
Pedestrian Infrastructure				
Consider installing a crosswalk across Coleman St, on the east side of Ramsey Rd	To provide a safer crossing for pedestrians	District of North Vancouver	\$1,500	
Consider installing crosswalk across Hoskins at Evelyn St	To provide a safer crossing for pedestrians	District of North Vancouver	\$1,500	
Consider installing sidewalk on the north side of Dempsey, between Underwood and Lynn Valley Rd	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$66,000	Assume 1.5m wide sidewalk
Consider completing sidewalks on both sides of Mountain Hwy, between Wellington and Coleman	To provide safer and more comfortable pedestrian pathways		\$82,500	Assume 1.5m wide sidewalk
Consider installing sidewalks on streets without sidewalks such as Kilmer, Evelyn St, and Ralph St	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$1,116,000	Assume 1.5m wide sidewalk. This includes sidewalk cost only. Other upgrades may be undertaken as part of a larger project here.
Consider installing a sidewalk on north side of Coleman St east of the Ramsey Rd	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$350,000	Assume 1.5 wide sidewalk
Consider installing a sidewalk on east side of Hoskins and McNair, from Lynn Valley Rd to Mountain Hwy	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$700,000	Assume 1.5m wide sidewalk. Note: additional upgrades may be undertaken here as part of a larger project.

DISTRICT OF NORTH VANCOUVER SCHOOL SAFETY REVIEW



Items for Consideration	Purpose	Responsible Party	Estimated Capital Cost *	Comments
Consider installing a sidewalk on Ramsey Rd, between Coleman and McNair Dr	To provide safer and more comfortable pedestrian pathways	District of North Vancouver	\$200,000	Assume 1.5m wide sidewalk
Parking				
Consider introducing a valet program and using a portion of the yellow curb directly in front of the school for it	To reduce the number of parents who need to park	Upper Lynn Elementary and School District #44	N/A	
Consider a trial to have designated carpooling parking stalls for staff with pavement markings	To reduce parking demand	Upper Lynn Elementary	\$1,500	Pavement markings only
Inform parents of the fine for illegal parking (via parent notices)	To encourage parents to comply with the parking restrictions	Upper Lynn Elementary	N/A	
Encourage staff to park further south of Nottingham Rd as a temporary measure	To avoid having staff from take up parking space in front of the school	Upper Lynn Elementary	N/A	
Explore the feasibility of using the vegetative area in the west parking lot for a few more parking spots	To create more designated off-street staff parking	Upper Lynn Elementary and School District #44	\$15,000	Estimate to include clearing and grubbing, grading, and drainage and asphalt placement
Explore the possibility of designating the several car lengths of curb space along Coleman St and Ramsey Rd as staff parking with accompanying signage	To create designated on-street staff parking	School District #44 and District of North Vancouver	\$500	
Traffic Calming				
Explore the feasibility of installing 3 speed cushions or humps on Hoskins, north of Coleman, with accompanying signage	To reduce vehicle speeds along Hoskins	District of North Vancouver	\$12,000	
Explore the feasibility of installing 3 speed humps on Coleman, just west of Ramsey Rd, with accompanying signage	To reduce vehicle speeds along Coleman	District of North Vancouver	\$12,000	
Explore the feasibility of installing approximately 10 speed humps along Dempsey Rd, from Braemar Rd to Lynn Valley Rd	To reduce vehicle speeds and to improve the cycling environment	District of North Vancouver	\$40,000	
Cycling Infrastructure				
Consider installing a bike rack on the east of the school entrance doors where there is an overhang	To provide a sheltered bike storage facility	Upper Lynn Elementary and School District #44	\$700	
Consider installing bicycle stencil markings and "share the road" signs on Dempsey, which is already a designated bike route	To warn motorists to look out for cyclists and to encourage more people to bike	District of North Vancouver	\$500	
Traffic Signals				
Consider installing a pedestrian controlled crosswalk across Lynn Valley Rd, on the north side of Peters and a crosswalk across Davcourt Rd at Hoskins	To provide a safer crossing for pedestrians	District of North Vancouver	\$100,000	Possibly consider a bulb out here to reduce the crossing time across Lynn Valley Rd.

DISTRICT OF NORTH VANCOUVER SCHOOL SAFETY REVIEW



Stantec

Items for Consideration	Purpose	Responsible Party	Estimated Capital Cost*	Comments
Accessibility				
Consider designating the curb ramp closest to the school entrance on Coleman as a drop-off area for students with special needs	To increase accessibility for students with special needs	Upper Lynn Elementary and School District #44	\$500	Additional signage only. Ramp is currently suitable for drop off, although minimum of 1.2m is preferred
Consider extending the ramp on Coleman St at Nottingham Rd to meet the crosswalk	To increase accessibility for students with special needs	District of North Vancouver	\$2,500	Extend the drop curb by 3.0m
Consider repaving the curb at the southwest corner of the Coleman St and Nottingham St intersection to include a ramp	To increase accessibility for students with special needs	District of North Vancouver	\$2,500	Would suggest repaving the entire width of the sidewalk in front of the school to minimum of 1.5m.
Explore the feasibility of redesigning the wheelchair ramp on the west side of the school entrance so that it can be more easily accessed from the front of the school	To provide a more direct route to the school entrance doors for students with special needs	Upper Lynn Elementary and School District #44	\$12,000	
Programmatic Changes				
Try to coordinate a Walking School Bus Program	To reduce vehicle traffic to and from the school, to promote physical activity, and to reduce the negative environmental impacts of vehicle use	Upper Lynn Elementary	N/A	
Strongly encourage staff to use alternative modes to travel (public transit, carpooling, walking, and cycling) by providing customized travel information and incentives such as gift certificate and discounted transit passes	To reduce parking demand	Upper Lynn Elementary	Depends on type of incentives used	
Explore creative ideas to provide and fund a service similar to a school bus program	To reduce vehicle traffic at the school and in the neighbourhoods around the school	Upper Lynn Elementary	N/A	
Other				
Have administrative staff supervise increased traffic flow at the designated drop-off and pick-up area during initial months of school	To ensure parents are complying with the drop-off and pick-up directions	Upper Lynn Elementary	N/A	

Notes:

*All estimated capital costs only indicate order of magnitude. Precise costs will require further examination of the work that is required. Design and construction administration costs are also not included. Once it is determined which improvements will be implemented, a contingency of 15-20% should be applied to the estimated costs.