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School District
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District of North Vancouver
North Vancouver School District #44

2011 School Transportation and Safety Review



FINAL REPORT

URBANSYSTEMS.

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1.0 INTRODUCTION

The District of North Vancouver (DNV) and the North Vancouver School District #44 (NVSD) have conducted a school safety review and Safe Routes to School Plan for Cleveland, Braemar, and Ross Road Elementary Schools. The study was undertaken in order to identify current transportation issues and opportunities around each school; to develop recommendations to improve the safety and access to schools; and to promote healthy and active modes of transportation to school such as walking and cycling. The outcomes of the study include:

- Identification of high priority, cost-effective improvements and transportation management strategies to improve safety conditions and access; and
- Development of route suggestions and travel information for students and parents.

This report presents findings regarding transportation issues and opportunities at each of the schools, and includes recommendations and an implementation strategy to effectively deliver improved safety and access conditions to each school, as well as to encourage students to walk and bicycle to school.

1.1 Study Process

Urban Systems Ltd. was retained by the DNV and NVSD to prepare the 2011 School Safety Review. This study was conducted through close collaboration with the DNV, NVSD, and parents and staff at each school. Activities conducted throughout the course of the study included:

- Meetings with the DNV, NVSD and school principals in June 2011 to provide an overview of the study and identify preliminary transportation issues and opportunities;
- Comprehensive site visits by the Urban Systems project team in early June 2011 to review existing transportation infrastructure, travel patterns, and safety and access issues. Field observations were made during both the morning drop-off period (between 7:30am to 8:30am) and afternoon pick-up period (between 2:30pm to 3:30pm) at each school;
- An on-line survey that was sent to all Braemar, Cleveland and Ross Road Elementary School parents to understand current travel patterns and identify transportation issues and opportunities at each school. An overview of the study and invitation to complete the survey was e-mailed by the Principal of each school to parents in early June 2011. The survey was available on-line between June 10 and June 24, 2011. 160 responses to the survey were received, including 61 responses from Braemar Elementary parents, 63 responses from Cleveland Elementary parents, and 36 surveys from Ross Road Elementary parents. Taking the number of students per household into account, the surveys received represented over 250 students at the three schools, or approximately 17% of the student enrolment at the schools (see Appendix A for a summary of survey results)

- Meetings with the Parent Advisory Committee (PAC) representatives of each school in October and November 2011 to confirm and discuss transportation issues, to develop recommendations to improve safety conditions and access, and to encourage students to walk and bicycle to school.

1.2 What is Safe Routes to School?

Safe Routes to School is a term used to describe an international movement to improve children's safety as they walk and bicycle to school. Safe Routes to School initiatives are built on five key components, typically called the "5 E's" of Safe Routes to School, as described below:

Engineering: The built environment is often a key determinant in whether parents allow their children to walk or bicycle to school. Engineering treatments can change the physical infrastructure, design, or operation of key routes in order to improve conditions for children walking and cycling to school. This can be achieved through a range of short and long-term improvements such as landscaping, marked crosswalks, stop signs, sidewalks, pathways, traffic calming treatments, and redesigned intersections. It is important that engineering treatments be applied in conjunction with the other "E's" to ensure consistent and safe use.

Education: Education is a key program component that seeks to inform and promote safety and awareness of the goals and benefits of Safe Route to School programs. It is important that education initiatives be relevant to parents and hands-on and practical for kids. Education initiatives may include promotion of traffic safety behaviors and rules of the road, and encouraging drivers to share the road with pedestrians and cyclists. Hands-on activities for students can include in-classroom bicycle and pedestrian safety training and bicycle workshops for older students.

Encouragement: This element is based on encouraging people to try walking or bicycling to school through special events, contests, and other initiatives. An enthusiastic and fun event attracts attention to issues of safety and active transportation, and encourages busy families to break their routines and try something new. Events can involve coordinating a Bike or Walk to School Week (or day or month), bike trains, and walking school busses.

Enforcement: Enforcement targets unsafe behaviors and seeks to maintain a level of safety to keep children comfortable in their journeys on foot or bike. This can involve having a law enforcement officer to speak to students about issues related to crime and safety concerns (such as stranger danger or bullying), the development of programs such as crossing guards, and/or the use of 'eyes on the street' in terms of volunteer parents monitoring school zones and popular routes during peak hours.

Evaluation: This involves documenting the current situation at the school, in terms of infrastructure evaluation, reasons that parents choose to drive, and safety concerns. This also involves determining the proportion of students that walk, bike, take transit, are driven, or carpool to school. Information and data collected through this evaluation process plays a key role in determining the scope of the Safe Routes to School program.

A combination of these program elements can lead to Safe Routes to School programs that effectively facilitate the safe walking or cycling movements of school children through a variety of approaches while encouraging active transportation and healthier travel behaviours.

A key component of a Safe Routes to School program is the development of a map highlighting the safest ways to access the school. Safe Routes to School maps for each school are provided in Appendix B. These maps highlight the best walking routes to school, which generally include trails, busier streets with sidewalks, or low volume local streets that don't have sidewalks but which provide direct access to the school. These maps highlight marked crosswalks and traffic signals as well as current bicycle parking locations at each school. The maps also identify drop off zones and 'park and walk' areas to provide options for those students who live outside the catchment areas for each school.

1.3 Relevant Policies and Directions

The District of North Vancouver recently adopted a new Official Community Plan (OCP). The OCP contains a community vision for 2030, which includes the following statements:

...Our young have safe and healthy environments in which to grow and succeed...our enviable pedestrian and cycling network connects [residents] to destinations and our unparalleled natural environment. Many people walk, cycle, take transit, and leaving cars at home as viable alternatives are available.

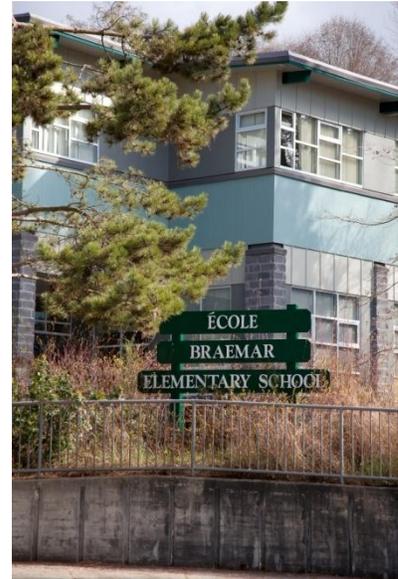
This vision emphasizes the District's commitment to promoting the health and well-being of all residents through increased transportation choices. The District's demographic profile is resulting in fewer new families and recent school closures, and the OCP addresses this through goals and policies that foster a sustainable community for residents to live, work, and play for years to come. In particular, the plan focuses on enhancing the District's pedestrian and cyclist networks to provide safe and efficient options for all types of modes and users. This includes encouraging sidewalk and bicycle infrastructure improvements, integrated active transportation networks, pedestrian-friendly features, traffic calming, public realm improvements and overall enhancements in accessibility. The OCP also promotes the establishment of a strong network of community programs and services for all residents, including children and youth, to further support the development of a healthy community. In particular, one of the policies identified in the OCP to improve is to "work with schools to provide safe walking and cycling routes to schools." The 2011 School Safety Review promotes the safety, well-being, and health of children which directly supports the goals and objectives articulated within the OCP.

2.0 BRAEMAR ELEMENTARY

2.1 Context

Braemar Elementary is located on Mahon Avenue in the Upper Lonsdale neighbourhood in North Vancouver. The school provides instruction to approximately 500 students from Kindergarten through Grade 7. Braemar is unique in the North Vancouver School District, as it is the only school in the School District with a three-track program, meaning that it offers an English Program (K to 7), an Early French Immersion Program (K to 7), and a Late French Immersion Program (Grade 6 and Grade 7). The school's catchment area for the English language program is bounded by West Queens Road to the south, Lonsdale Avenue to the east, Delbrook Avenue and Mosquito Creek to the west, and the mountains to the north.

The neighbourhood surrounding the school is generally characterized by low-density, single family housing. The neighbourhood also contains two other schools, Balmoral Junior Secondary School and École André-Piolat. Both of these schools are primarily accessed via Mahon Avenue, as École André-Piolat is located on the northeast corner of Mahon Avenue and West Kings Road, and Balmoral Junior Secondary is located west of the Mahon Avenue and West Osborne Road intersection. École André-Piolat is a K to 12 French school, with a current enrolment of approximately 300 students. Balmoral Junior Secondary School currently has approximately 650 students (grades 8 to 10) from Carson Graham Secondary, who will be relocated to the new Carson Graham replacement school in Fall 2012. Once the students are relocated, it is understood that the School District currently plans to use Balmoral for the future site of the consolidated Community Learning Program, a centre offering grade 9 to 12 programs to improve student completion and achievement, as well as adult basic education classes. With these potential changes to programming at Balmoral School, the student enrollment is expected to change from the current 650 students to less than 300 students by Fall 2012. The recommendations of this report do not reflect the implications of any changes at Balmoral.



2.2 Demographics

Braemar Elementary's student enrollment for the 2010/2011 school year was slightly more than 500 students. As shown in Table 2.1, approximately 45% of the student population was enrolled in French Immersion, with approximately 35% in the Early French Immersion Program and 10% in the Late French Immersion Program. As a result of the fact that Braemar Elementary is a triple-track school with both

Early French Immersion and Late French Immersion Programs, there is a higher than typical proportion of Grade 6 and 7 students at Braemar Elementary, with nearly a third of all students in Grade 6 or 7.

Table 2.1: Student Enrollment by Program

Program	Number of Students	Proportion of Students
English	277	55%
Early French Immersion	175	35%
Late French Immersion	53	10%
<i>Total</i>	<i>505</i>	<i>100%</i>

Largely due to the fact that Braemar Elementary is home to a sizeable French Immersion student population, a significant proportion of students live outside the traditional English Language Program catchment area. In fact, many students live well beyond a reasonable walking distance from the school (approximately 800 metres, or a ten-minute walking distance), as shown in Figure 2.1 below. As shown in Table 2.2, less than 15% of students live within a five minute walking distance from the school (within 400 metres), and approximately 43% of students live within a ten minute walking distance from the school. Conversely, over half (57%) of students live further than a ten minute walk from the school, with over a third (37%) of students living more than a twenty minute walk from the school (greater than 1,600 metres).

Figure 2.1: Braemar Elementary Student Location

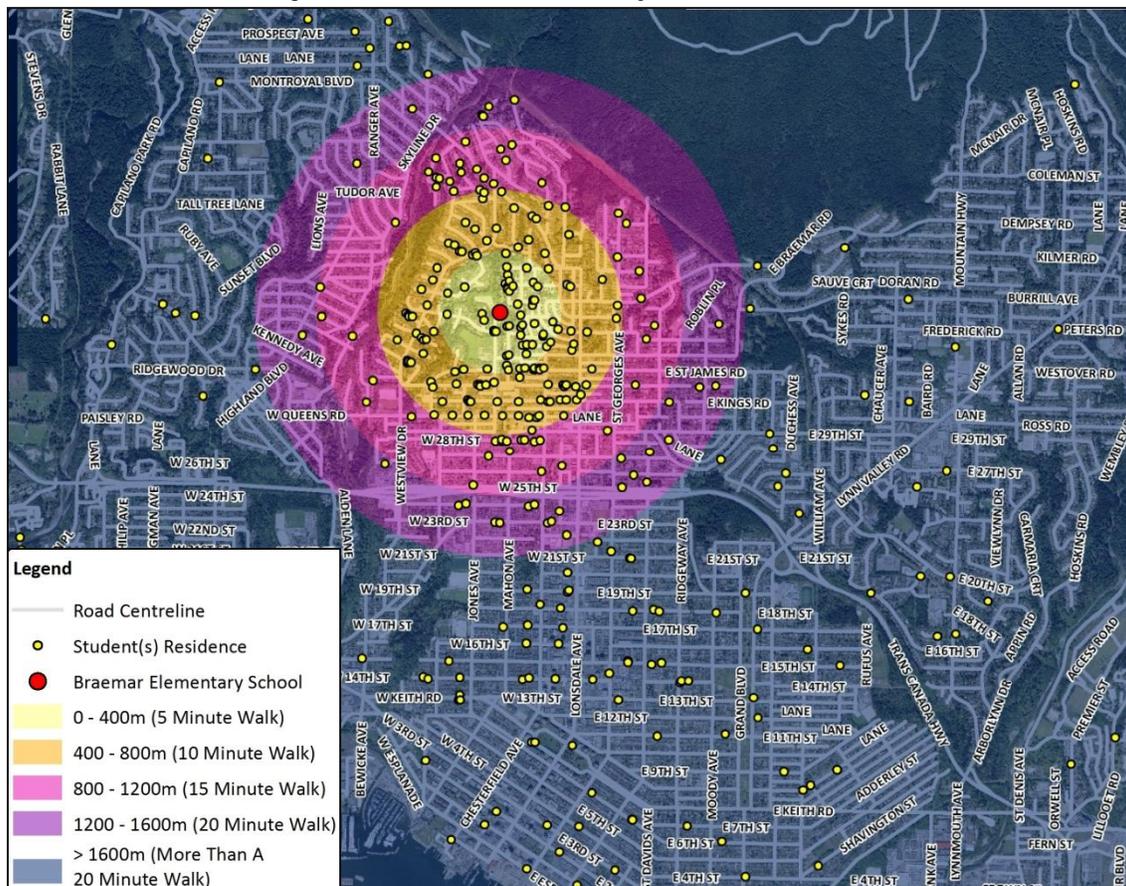


Table 2.2: Student Enrollment by Distance from School

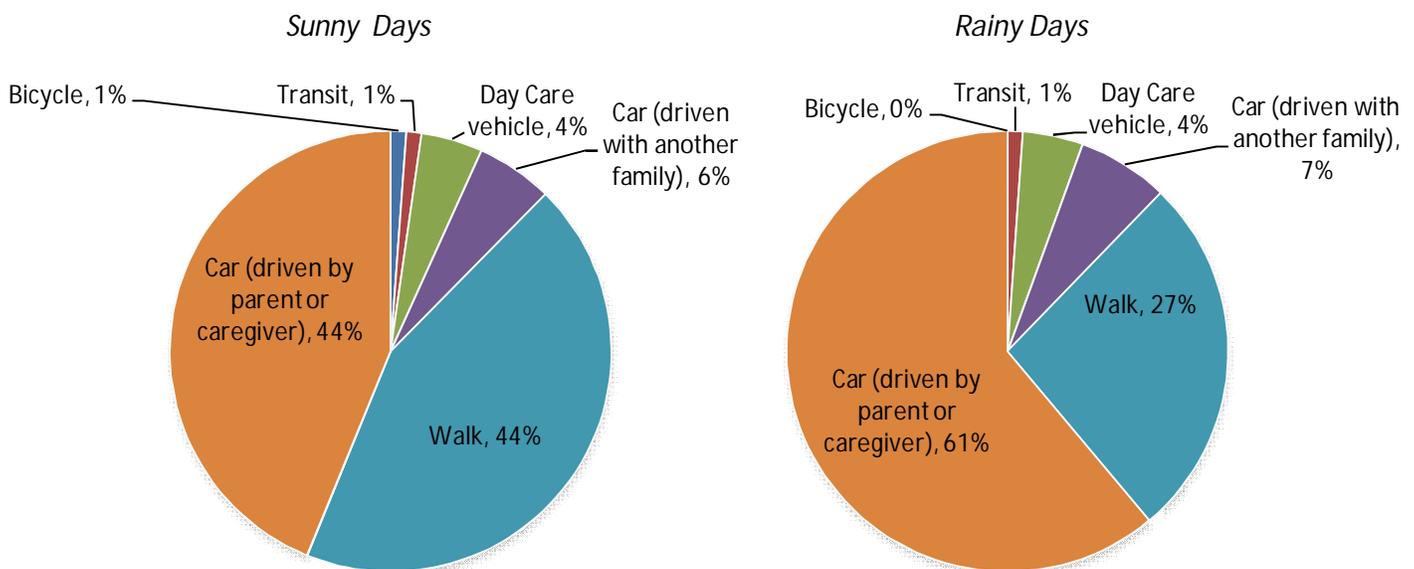
Distance From School	Proportion of Students
< 400 metres	14%
400 – 800 metres	28%
800 – 1200 metres	13%
1200 – 1600 metres	7%
>1600 metres	37%
<i>Total</i>	<i>100%</i>

2.3 Travel Patterns

The on-line survey asked respondents to indicate how their children typically travel to and from school. In recognition of the fact that travel patterns can vary considerably based on weather, the survey asked respondents to indicate their typical mode of transportation on both dry or sunny days, and on rainy days. The results of the on-line survey indicated that the vast majority of Braemar Elementary students (88%) arrive at the school by walking or in a car driven by their parent or caregiver on both sunny and rainy days. The remaining students typically take transit, bicycle, or are driven in a day care vehicle with another parent or caregiver.

As shown in Figure 2.2, travel patterns vary based on weather conditions. For example, while nearly half (44%) of students walk to school on dry or sunny days, this drops to just over a quarter (27%) of students that walk to school on rainy days.

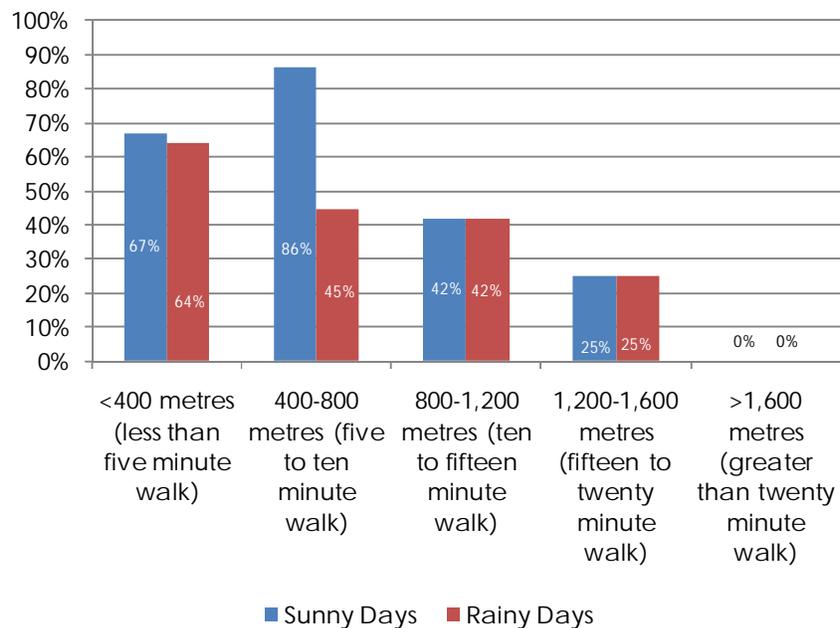
Figure 2.2: Mode Share to Braemar Elementary on Sunny and Rainy Days



As noted above, a large proportion of Braemar Elementary students are in the French Immersion program and, and over half of the students live beyond a ten minute walking distance to the school. This has significant implications on the travel patterns to and from Braemar Elementary. As noted above, approximately 44% of students typically walk to school on dry or sunny days. However, this varies significantly among students in the English and French Immersion Programs, as approximately 57% of students in the English Program walk to school on dry or sunny days, compared to only 32% of French Immersion students.

The difference in travel patterns are even more pronounced based on the travel distance to Braemar Elementary. As shown in Figure 2.3, the majority of students who live within approximately 800 metres (roughly a ten minute walk) walk to school on both sunny and rainy days. The percentage of students who walk to school decreases significantly beyond a ten minute walking distance.

Figure 2.3: Walking Mode Share to School Based on Distance to School



2.4 Transportation Initiatives

Braemar Elementary has undertaken several initiatives that support safety and/or health of the students. In order to improve the safety of traffic movements during drop-off and pick-up hours, Braemar Elementary and DNV staff worked together to implement a new traffic regulation (as of March 2011) in the Mahon Avenue cul-de-sac. This regulation prohibits any cars entering the cul-de-sac to drop-off or pick up students, and pylons placed at the entrance of the cul-de-sac further enforce this restriction. The entrance to the Mahon Avenue cul-de-sac has been often monitored by a crossing guard; however lack

of student volunteers this school year has put the crossing guard program on hold. Additional initiatives include walking class field trips, and the school newsletter regularly providing information on pedestrian safety, traffic awareness, parking restrictions, and traffic flow.

2.5 Existing Conditions

This section describes existing transportation conditions in the area around Braemar Elementary school. This includes a summary of existing access points, road network characteristics, pedestrian facilities, bicycle facilities, transit services and facilities, parking, drop-off and pick-up zones, and safety.

2.5.1 Access Points

The main entrance to the school is located at the north end of the Mahon Avenue cul-de-sac. Until recently, the Mahon Avenue cul-de-sac was the primary access point for student drop-offs and pick-ups. Traffic and safety concerns resulted in a recent change by the administration to implement new regulations in the cul-de-sacs on both Mahon Avenue and Everglade Place, prohibiting student drop-offs and pick-ups in both cul-de-sacs during peak hours (8:30am to 9:30am and 2:30pm to 3:30pm on school days).

In addition, there are several other access points to the school via trails on the north, west, and south sides of the school property. These trails provide connections from the school to Calder Avenue (north side), Calder Avenue (south side), Everglade Place, Silverdale Place, and West Balmoral Road. These trails pass through the forested areas surrounding the school, and are generally not signed.

2.5.2 Road Network

Road Classification

As shown in Figure 2.4, Lonsdale Avenue and Delbrook Avenue are classified as arterial roads. The primary function of arterial roads is to support traffic movement of all vehicle types. Both of these roads have one travel lane in each direction and accommodate on-street parking on both sides. Collector roads include Evergreen Place, Mahon Avenue, and Norwood Avenue. Each of these roads also has one travel lane in each direction and accommodates on-street parking on both sides. Collector roads support both mobility and access, and are designed to accommodate volumes of 1,000 and 8,000 vehicles per day in both directions.

All of the remaining streets in the vicinity of the school are classified as local roads. Parking is generally available on both sides of local roads, with traffic volumes typically less than 1,500 vehicles/day. The majority of local roads in the neighbourhood of the school do not have sidewalks on either side, as discussed in further detail below.

Intersections

The most significant intersection in the immediate vicinity of Braemar Elementary is at Mahon Avenue and Evergreen Place. This three-way intersection contains marked crosswalks on the west leg and the south leg of the intersection. Motor vehicle traffic is restricted on Mahon Avenue north of Evergreen Place during peak hours due to the drop-off and pick-up restrictions in the Mahon Avenue cul-de-sac noted above. This intersection is monitored by crossing guards in the morning and afternoon to ensure pedestrian safety. The Evergreen Place and Everglade Place intersection is another key intersection around the school, which now experiences higher volumes than previously due to the peak hour access restrictions on Mahon Avenue noted above. With the closure of the Mahon Avenue cul-de-sac, a number of drivers also use Everglade Place to turn around, increasing the volumes going through the intersection. Other key intersections with noted safety concerns are the intersections of Mahon Avenue at West Queens Road, Delbrook Avenue at Silverdale Place, and Evergreen Place at Calder Avenue.

2.5.3 Pedestrian Facilities

Sidewalks

As shown in Figure 2.5, the only streets in the immediate vicinity of Braemar Elementary with sidewalks are on Mahon Avenue, Evergreen Place, and Osborne Road. As a collector road and main access route to Braemar Elementary, Mahon Avenue has a sidewalk on both sides of the street. However, Evergreen Place contains a sidewalk only on the south side of the street. None of the remaining streets that surround Braemar Elementary have sidewalks on either side of the street, which forces pedestrians to walk on the roadway to access the school. In particular, the issue of no sidewalks on the north side of Evergreen Place, Calder Avenue (north and south) and Everglade Place is significant due to these being well used by students and parents walking to school.

Trails

As noted above, several trails provide access to the school from the west, north, and east. These trails provide connections from the school to Calder Avenue (north side), Calder Avenue (south side), Everglade Place, Silverdale Place, and West Balmoral Road, as shown in Figure 2.5. The trails that lead to the school grounds cross through hilly and wooded areas, and often contain wooden or concrete steps. The stairs on the trail from Calder Avenue (north side) contains handrails for users. Some of the stairs and trails have overgrown shrubs extending into the trail, and some of the trails become challenging to traverse in snow conditions.

Figure 2.4: Braemar Elementary Road Network Classification



Figure 2.5: Braemar Elementary Existing Pedestrian Facilities



Crosswalks

There are two marked crosswalks at the intersection of Evergreen Place and Mahon Avenue. There is also a marked crosswalk across Mahon Avenue at Osborne Road. The other streets that have connecting trails to the school do not have any marked crosswalk facilities.

2.5.4 Bicycle Facilities

Bicycle Routes

There are no existing bicycle routes in the vicinity of the school. The District's draft 2011 Bicycle Master Plan identifies Evergreen Place, Osborne Road, and Mahon Avenue between Evergreen Place and Mahon Avenue as planned bicycle routes, which would provide an east-west connection to Delbrook Avenue in the west and Norwood Avenue in the east.

Trails

The trails that connect to the Braemar Elementary mainly contain stairs and terrain that is difficult to navigate for young cyclists. Access to the school grounds through Mahon Avenue is likely a preferred option for cyclists.

Bicycle Parking

There are currently three bicycle racks on the Braemar Elementary school grounds, located on the west side of the building near the main entrance to the school. One of the bicycle racks offers weather protection as it is covered by an overhang, while the two other bicycle racks do not offer weather protection. The bicycle racks were not observed to be in high use, even on fair weather days.

2.5.5 Transit Services and Facilities

Braemar Elementary is not directly served by any transit routes. The closest transit route is approximately 500 metres to the west on Delbrook Avenue, with a stop at the intersection of Delbrook Avenue and Evergreen Place. Services on Delbrook and other major routes in proximity to Braemar Elementary include:

- *#230 Upper Lonsdale, Lonsdale Quay* - operates every 10 to 15 minutes in peak hours, and every 30 minutes in non-peak hours. A linear route providing service on Lonsdale Avenue from Lonsdale Quay to West Rockland Road and West Balmoral Road in Upper Lonsdale.
- *#246 Downtown, Lonsdale Quay, Highlands* - operates every 15 minutes in peak hours and every 30 minutes in non-peak hours, and provides connections to Lonsdale Quay, Edgemont Village, and downtown Vancouver with routing on Delbrook Avenue and Mont Royal Boulevard

- *#232 Grouse Mountain, Phibbs Exchange* – operates every 30 minutes. Connects Phibbs Exchange to Grouse Mountain via Capilano Road, West Queens Road, Lonsdale Avenue, and Keith Road.
- *#241 Upper Lonsdale, Vancouver* – Monday to Friday peak hour service only, operates every 10 to 15 minutes and connects downtown Vancouver with Upper Lonsdale Avenue
- *#242 Upper Lonsdale, Vancouver* – Early morning weekend service only, provides service every 30 minutes between downtown Vancouver and upper Lonsdale Avenue.

2.5.6 Parking

Off-Street Parking

Braemar Elementary has one off-street parking lot for staff use only. The staff parking lot is located on the west side of the school building, with the entrance to the north of the Mahon Avenue cul-de-sac. The staff parking lot has a capacity of 28 regular parking stalls, two reserved parking stalls (for administration), and one disabled parking stall. The number of parking stalls is generally sufficient to accommodate staff demand, with less than 24 full-time equivalent (FTE) teachers and administrators on staff. During site visits, the parking lot was observed to be near capacity almost all day, indicating that parking supply adequately meets demand of the staff.

On-Street Parking

The staff parking lot is intended exclusively for staff members and does not contain any parking for parents or other visitors. Signage also restricts parents from using the parking lot for any drop-off and pick-up activities. As shown in Figure 2.6, on-street parking is available in the Mahon Avenue cul-de-sac at all times on the east side, and outside of school hours on the west side. On-street parking is also permitted on both sides of Evergreen Place and Mahon Avenue south of Evergreen Place. As such, the majority of parent parking occurs on the north and south side of Evergreen Place, and in Everglade Place.

2.5.7 Drop-off / Pick-up Zones

Braemar Elementary does not have any designated drop-off and pick-up zones for parents who are driving their children. Due to the access restrictions to Mahon Avenue north of Evergreen Place in the morning and afternoon peak hours, many parents have shifted their drop-off and pick-up activities to Evergreen Place and Everglade Place, although as shown in Figure 2.6, drop-offs and pick-ups are not permitted in the Everglade Place cul-de-sac. To a lesser extent, drop-off and pick-up of students occurs at the trailheads located on both the north and south segments of Calder Avenue, which has resulted in some traffic and safety issues on these local roads.

2.5.8 Safety

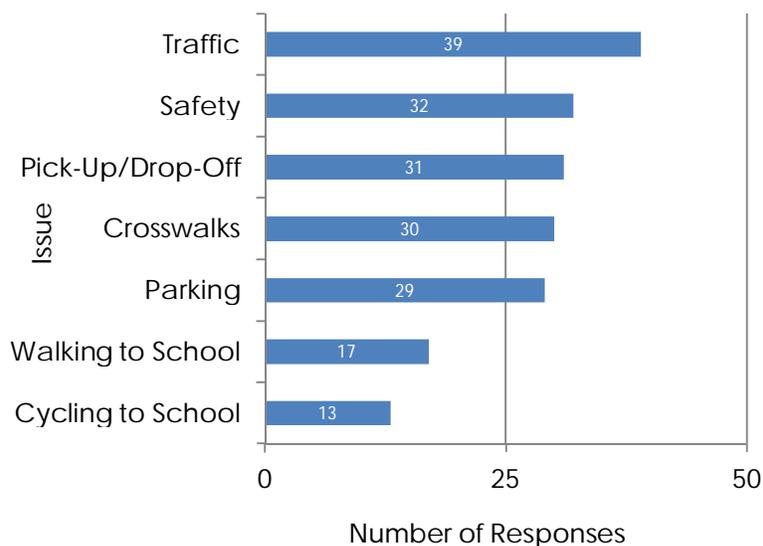
ICBC collects and maintains statistics for all reported collisions in British Columbia. The collision data classifies reported collisions based on the type of reported collision as follows: fatality, injury, material damage (above \$1,000), and material damage (under \$1,000), and also includes reported collisions involving pedestrians or cyclists. Collision data for all roads within approximately 400 metres of Braemar Elementary was reviewed for the past five years (2006 to 2010) to identify overall collision frequencies around the school. Overall it was found that collisions around schools are not very common, and those that do occur are generally relatively minor and do not usually involve pedestrians or cyclists. In fact, between 2006 and 2010, only one reported collision resulted in injury. This occurred on Calder Avenue north of Evergreen Place, and did not involve any pedestrians or cyclists. Three locations around the school have had more than one average reported collision per year (Mahon Avenue at Evergreen Place, West Osborne Road, and between West Osborne Road and West St. James Road). No reported collisions in the area were noted to have involved pedestrians or cyclists over this period.

2.6 Issues

This section describes transportation and safety issues that have been identified to date based on the on-line survey responses, field visits, and existing conditions summary in the previous section.

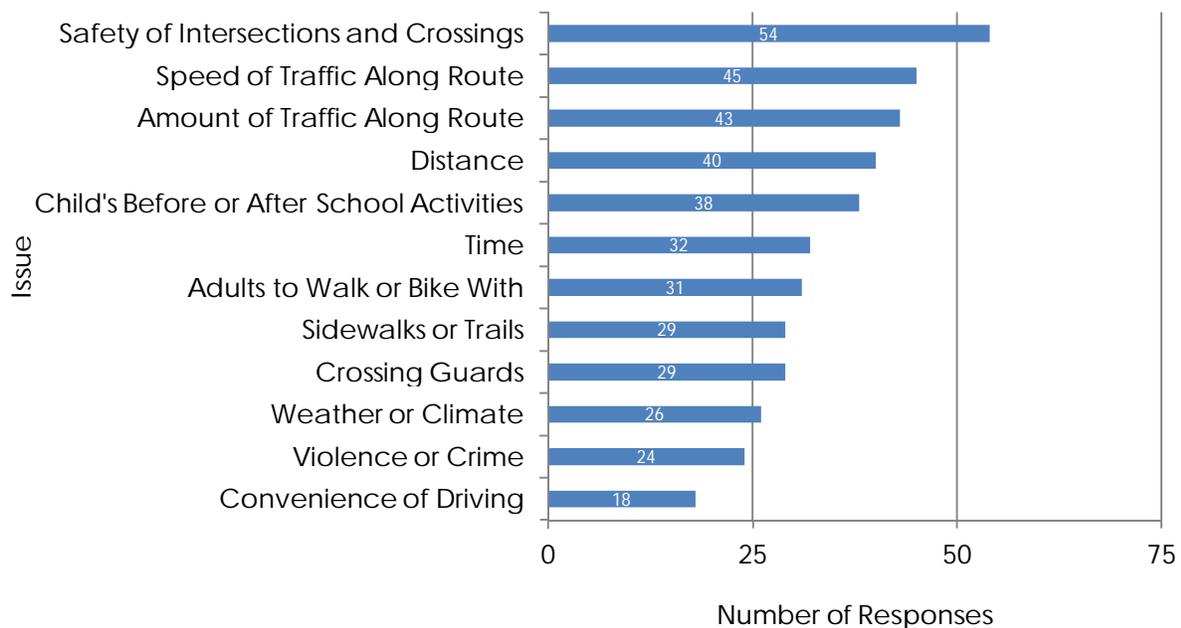
The on-line survey asked respondents to identify which issues present safety concerns getting their children to and from school. As shown in Figure 2.7, the primary safety concerns identified by survey respondents were related to traffic and safety.

Figure 2.7: Braemar Elementary Reported Safety Concerns



The on-line survey also asked respondents to identify the key transportation issues affecting the decision to allow their children to walk or bicycle to or from school. As noted in Figure 2.8, the most significant issue identified by survey respondents for Braemar Elementary was the safety of intersections and crossings, followed by traffic speeds and traffic volumes. Other notable issues included affecting this decision included distance, before or after school activities, and time.

Figure 2.8: Braemar Elementary Transportation Issues



Specific transportation and safety issues that have been identified to date around Braemar Elementary include:

- *Speeding* is perceived as an issue on several roads near the school, including Mahon Avenue, Evergreen Place, and Delbrook Avenue;
- *Missing sidewalks* on several streets, including Evergreen Road (north side), Evergreen Place, Loraine Avenue, and Calder Avenue, which forces students to walk on the roadway;
- *Intersection safety* is perceived to be an issue on at the Evergreen Place intersections at Mahon Avenue, Everglade Place and Calder Avenue; Delbrook Avenue intersections at Saville Crescent, Silverdale Place, and Evergreen Place; Mahon Avenue at West Queens Road, Loraine Avenue and Lewister Road, and along Lonsdale Avenue at several locations;
- *Drop-off and pick-up* activities in Everglade Place, and the Calder Place north segment (at West Braemar road) and south segment (cul-de-sac) have been noted to present safety issues. This is

due to high traffic volumes in the peak drop-off and pick-up periods in combination with the lack of sidewalks;

- *Lack of parking* close to the school entrance;
- *Traffic volumes* during drop-off and pick-up periods on Mahon Avenue and Evergreen Avenue, particularly in conjunction with traffic generated by Balmoral Junior Secondary School and École André-Piolat. Potential future changes in programming at Balmoral School will considerably reduce student enrolment on-site by nearly half, but the new program will have students of driving age. As such, it is recommended that NVSD and Balmoral School develop parking and traffic management strategies as any future changes in programming occur at Balmoral School to understand changes in traffic patterns and identify mitigation measures;
- *Driver behaviour*, including vehicles not following traffic regulations, such as parking in no-parking areas, not using turning signals, blocking of driveways, and stopping in the street;
- *Increased use of Everglade Place*, with the implementation of the new traffic regulation in Mahon Avenue, parents driving their children have shifted to using Everglade Place, causing increased traffic and congestion problems as noted by the residents. Residents of Everglade Place are experiencing increased traffic and increased noise. Curbside space is limited on the Everglade Place and so drivers often resort to temporarily blocking the driveways of residents.
- *Parents noted that speeding is sometimes a problem for latecomers*, which poses a danger when there are parents and children walking in the roadway. Further, when parking is occurring on both sides such as on Everglade Place, the available roadway space for pedestrians narrows, which also increases the likelihood of vehicle and pedestrian collisions.
- *Accessibility of trails*, present challenges for cyclists as well as parents with strollers.

2.7 Improvement Options

The existing conditions and issues at Braemar Elementary School were assessed, and improvements were identified to enhance the environment for walking and cycle routes to the school grounds and improve community livability. Table 2.3 below describes the recommended improvement options proposed to the Braemar PAC, DNV, and NVSD for potential inclusion in the final school safety implementation strategy (discussed further in Section 5.0). Figure 2.9 shows the location of these improvement options.

Table 2.3: Improvement Options – Braemar Elementary

Improvement Type		Location	Description
1. Curb extensions	1a	Mahon Avenue at Evergreen Place	Reduce curb radius at existing sidewalk and provide curb extensions on northwest and southwest corner to reduce pedestrian crossing distance
	1b	Delbrook Avenue at Evergreen Place	Provide curb extensions at existing sidewalk to reduce pedestrian crossing distance
2. Sidewalks	2a	Evergreen Place	Provide sidewalk on north side of Evergreen Place, between Everglade Place and Mahon Avenue in conjunction with valet program (5a) to designated a preferred pick-up and drop-off area
3. Marked Crosswalks	3a	Mahon Avenue at Evergreen Place	Provide new raised crosswalk on north leg of Mahon Avenue and Evergreen Place intersection to discourage vehicles entering cul-de-sac and improve pedestrian safety
	3b	Mahon Avenue at Evergreen Place	Crossing guards and pylons in morning and afternoon to discourage vehicles entering cul-de-sac and improve pedestrian safety
	3c	Delbrooke Avenue at Saville Crescent	Relocate crosswalk to south leg of intersection for better sightlines
4. Signs	4a	Evergreen Place	"No U-turn" Signs to discourage U-Turns on Evergreen lance
5. Valet Program	5a	Evergreen Place	Implement valet program, with drop-offs occurring on Evergreen Place and student volunteers escorting dropped off students to the school entrance. (Can acquire BCAA support for this initiative, as BCAA offers training to support valet program and traffic safety patrol programs)
6. Trails	6a	West Braemar Road/Calder Avenue trail	Complete paved trail, and cutback vegetation to improve visibility and accessibility
7. Traffic Restrictions	7a	Calder Place, north of Evergreen Place (cul-de-sac)	Local traffic only 8:30am to 9:30am, 2:30pm to 3:30pm to improve pedestrian safety
	7b	Everglade Place	Local traffic only 8:30am to 9:30am, 2:30pm to 3:30pm to improve pedestrian safety
	7c	Evergreen Place (south side)	No parking 8:30am to 9:30am, 2:30pm to 3:30pm to provide for a drop off & pick up zone
8. Programs / In-Class Initiatives	9a		<ul style="list-style-type: none"> - Participate in TransLink's TravelSmart program for elementary schools. - Pursue rideshare initiatives/education through online carpooling networks (https://online.ride-share.com/en/my/) and information at www.travelsmart.ca - Issue announcements/reminders to parents on safety improvements and/or changes in traffic rules, as well as information on safe routes to school - Promote in-class education promoting walking, cycling and traffic safety including "walking field trips", in conjunction with the RCMP and ICBC - Include information on the school website on safe routes to school / active transportation - Promote a Walking or Cycling School Bus Program - Engage in bike/walk to school events such as bike to school week, Winter Walk Day, IWalk with contests and prizes with related in-class activities - Consider a traffic safety patrol program

3.0 CLEVELAND ELEMENTARY

3.1 Context

Cleveland Elementary is located on Eldon Road, east of Capilano Road in the northern part of the Capilano neighbourhood. The school provides instruction to nearly 500 students from Kindergarten through Grade 7. Cleveland is a dual-track school that offers an English Program and French Immersion Programs from Kindergarten to Grade 7.

The neighbourhood surrounding the school generally consists of low density, single-family residential housing, and is located near Eldon Park. The school's catchment area for the English language program is bounded by Capilano River to the west, Ridgewood Drive to the south, Mackay Creek to the east, and Handsworth Road to the north.



3.2 Demographics

Cleveland Elementary had a student enrollment in the 2010-2011 school year of 486 students. As shown in Table 3.1, the school has a very high proportion of students enrolled in French Immersion, with nearly two-thirds (63%) of the student population enrolled in the French Immersion program.

Table 3.1: Student Enrollment by Program

Program	Number of Students	Proportion of Students
English	186	38%
French Immersion	300	62%
<i>Total</i>	<i>486</i>	<i>100%</i>

Cleveland Elementary has a significant number of students who live beyond a reasonable walking distance to the school, as shown in Figure 3.1. As noted in Table 3.2, while approximately 17% and 40% of students live within a five and ten minute walking distance to school, respectively, approximately 60% of students live further than a ten minute walking distance from the school, with over a third (37%) of students living more than a twenty minute walk from the school (greater than 1,600 metres).

Figure 3.1: Cleveland Elementary Student Location

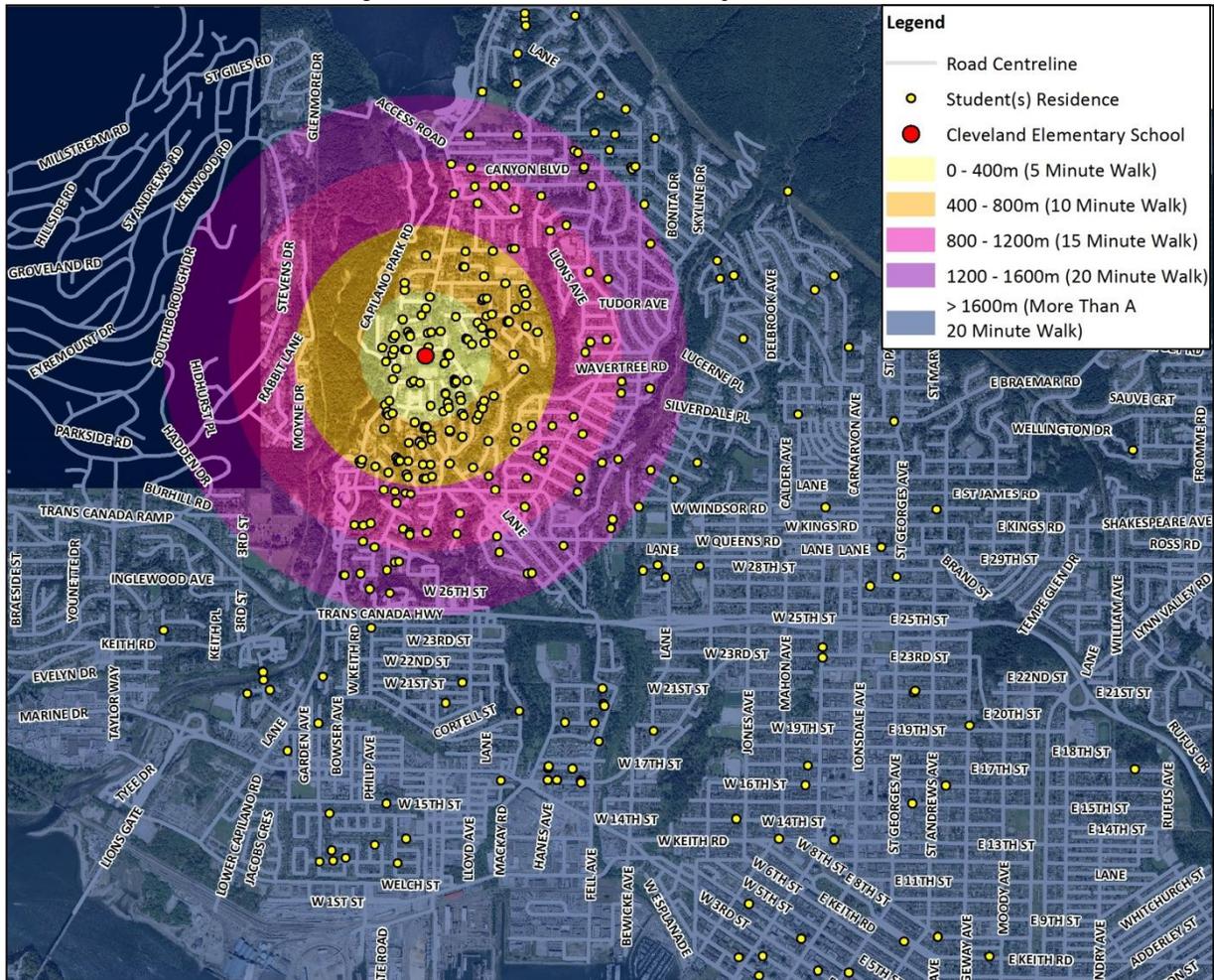


Table 3.2: Student Enrollment by Distance from School

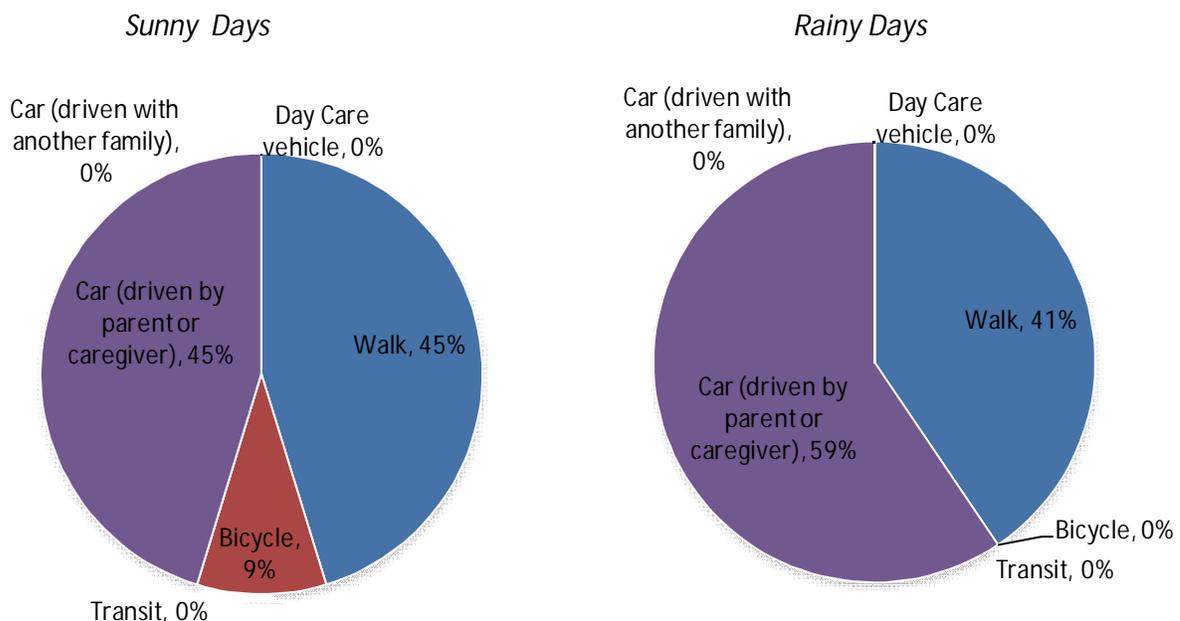
Distance From School	Proportion of Students
< 400 metres	17%
400 – 800 metres	24%
800 – 1200 metres	12%
1200 – 1600 metres	10%
>1600 metres	37%
Total	100%

3.3 Travel Patterns

The results of the on-line survey indicated that the vast majority of Cleveland Elementary students arrive at the school by walking or in a car driven by their parent or caregiver on both sunny and rainy days.

As shown in Figure 3.2, travel patterns were relatively similar on dry and sunny days and rainy days. In fact, the proportion of trips made by walking did not change significantly on dry or sunny days (45% of trips) compared to rainy days (41%). 9% of students typically bicycle to work on sunny days, but no reported cycling trips were made on rainy days. No survey respondents indicated that they took transit, used a day care vehicle, or rode in vehicles with another parent or caregiver to get to school on either sunny or rainy days.

Figure 3.2 – Mode Share to Cleveland Elementary on Sunny and Rainy Days

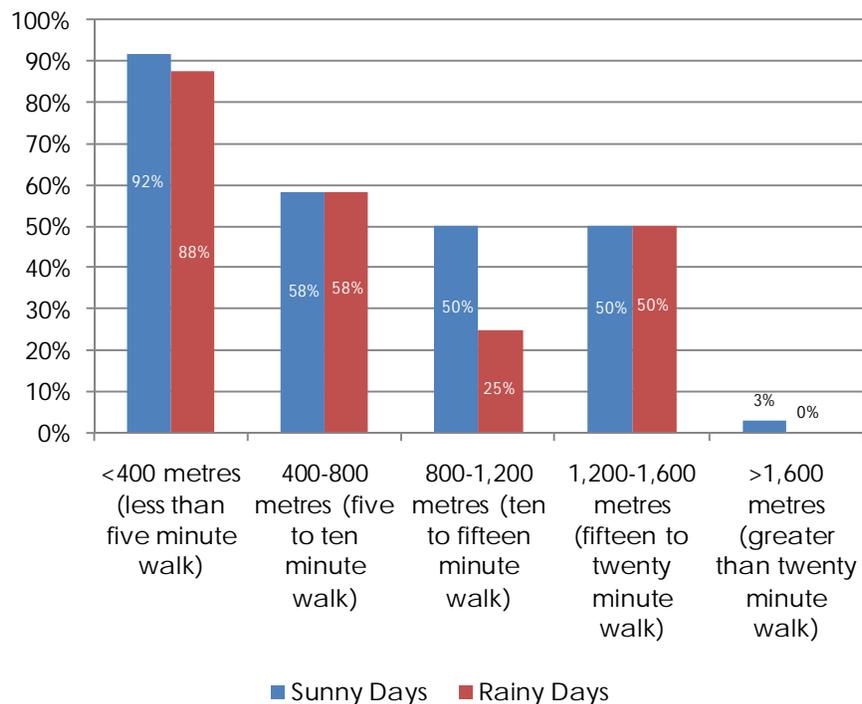


As noted above, a large proportion of Cleveland Elementary students are in the French Immersion program and, and over half of the students live beyond a ten minute walking distance to the school, which has significant implications on the travel patterns to and from Cleveland Elementary. As noted above, approximately 45% of students typically walk to school on dry or sunny days. However, this varies significantly among students in the English and French Immersion Programs, as approximately 79% of students in the English Program walk to school on dry or sunny days, compared to only 32% of French Immersion students.

As shown in Figure 3.3, the overwhelming majority of students who live within approximately 400 metres (roughly a five minute walk) walk to school on both sunny and rainy days (92% and 88% of students, respectively). The number of students reporting that they walk to school declines significantly

beyond a five-minute walking distance. Approximately half of students who live between a five and twenty minute walking distance to school walk to school on sunny days, although this drops somewhat on rainy days.

Figure 3.3: Walking Mode Share to School Based on Distance to School



3.4 Transportation Initiatives

Traffic safety initiatives at Cleveland Elementary include the placement of on-street pylons on Eldon Road in front of the school for the duration of the school day, and a parent and student crossing guard program in the morning and afternoon on Eldon Road. Until recently, the school had a kindergarten valet program due to the proximity of the classrooms to the parking lot, but this initiative was recently discontinued when kindergarten classes were relocated. The school participates and promotes Bike to School week, which has seen high participation rates, with the 2010/2011 school year seeing on average 250 participants biking to school daily. Cleveland Elementary also has a Walk to School program, which includes “Walking Wednesdays” where parents and children are encouraged to take active modes to school rather than drive on Wednesdays. The school has also participated International Walk to School month through promoting IWALK Day, and promotes awareness to parents through the school newsletter. The school newsletters also issue notices to parents about drop-off/pick-up zones and traffic regulations.

3.5 Existing Conditions

This section describes existing transportation conditions in the area around Cleveland Elementary school. This includes a summary of existing access points, road network characteristics, pedestrian facilities, bicycle facilities, transit services and facilities, parking, drop-off and pick-up zones, and safety.

3.5.1 Access Points

The main entrance to Cleveland Elementary is on Eldon Road, with the majority of drop-off and pick-ups occurring here during peak hours. Access to the school is also provided by trails connecting to the school from Mount Crown Road, Lewister Road, Loraine Avenue, and Kendal Place. These trails allow students and parents to walk and bicycle from the southern and eastern parts of the neighbourhood, and also allow parents driving to school to drop-off and pick-up their children at the trailheads.

3.5.2 Road Network

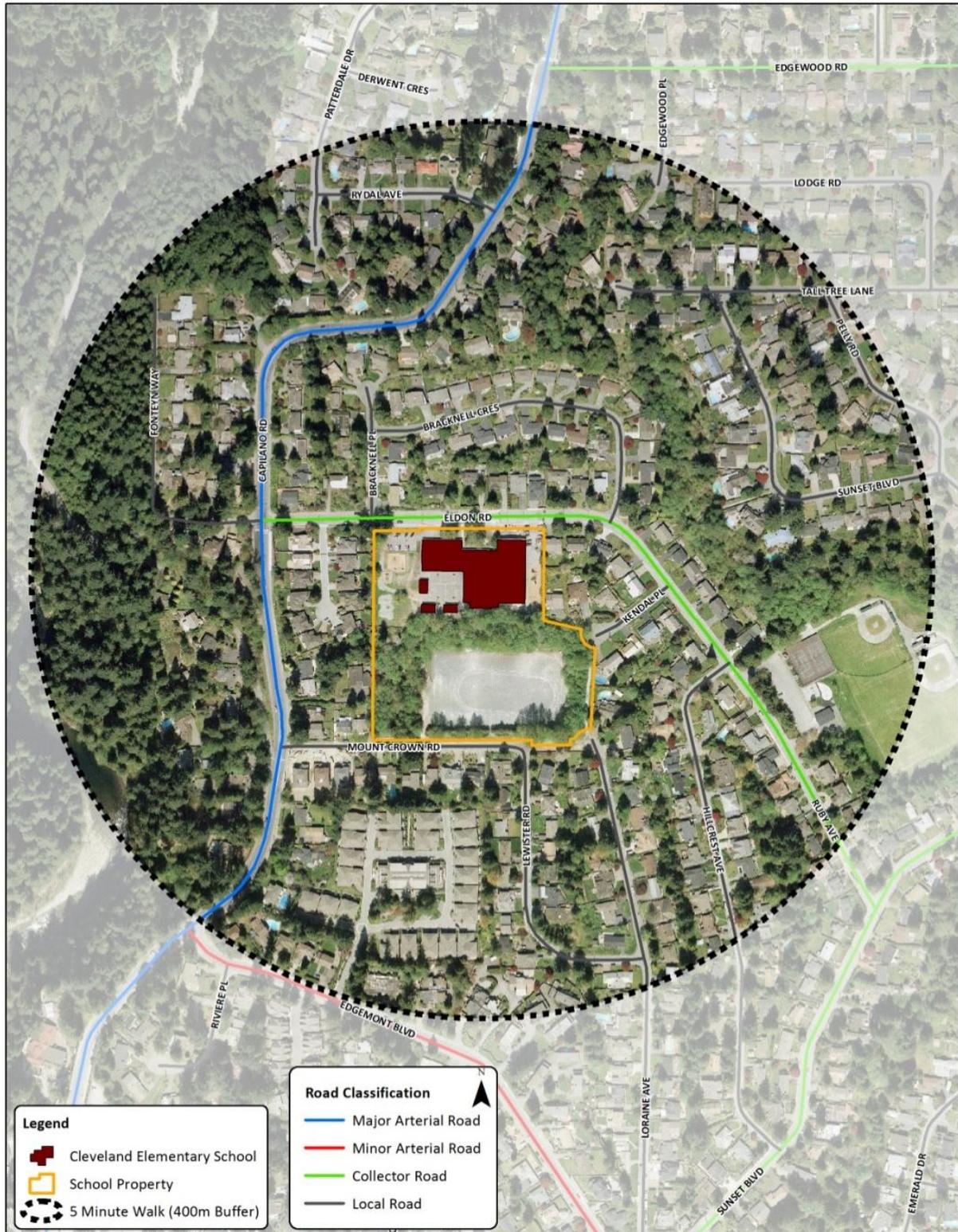
Road Classifications

As shown in Figure 3.4, the neighbourhood around Cleveland Elementary is typically characterized by local roads, with the exception of Eldon Road and Capilano Road. Capilano Road is classified as a major arterial road with a primary function to support traffic movement of all types of vehicles. Capilano Road has one travel lane in each direction, with parking generally permitted on both sides of the street. Eldon Road is classified as a collector road, with one travel lane in either direction and parking allowed on both sides, excluding the restricted school zones, as described in further detail below.

Intersections

The most notable intersection near the school is at Capilano Road and Eldon Road. This intersection has only a pedestrian activated signal to cross Capilano Road and traffic queues were observed here during peak hours as vehicles wait to turn left onto Capilano Road. Further congestion issues are augmented at this intersection by the queuing of southbound vehicles on Capilano Road waiting to turn left onto Eldon Road. Other notable intersections around the school include Eldon Road at Bracknell Place, and Capilano Road at Mount Crown Road. Further afield from the school, the Loraine Avenue intersections at Lewister Road and at Sunset Boulevard present safety challenges for those walking on these key routes to school.

Figure 3.4: Cleveland Elementary Road Network Classification



3.5.3 Pedestrian Facilities

Sidewalks

As shown in Figure 3.5, Eldon Road has sidewalks on both sides of the street between Capilano Road and Bracknell Crescent. East of Bracknell Crescent, the sidewalk only continues on the south side of the street. Bracknell Place contains a short segment of sidewalk on its west side, which stops before Bracknell Crescent. Similarly, Mount Crown Road contains a small segment of sidewalk on its south side, near the intersection with Capilano Road. Other than these facilities, pedestrians using Mount Crown Road, Bracknell Crescent, Lewister Road, and Loraine Avenue must walk in the roadway.

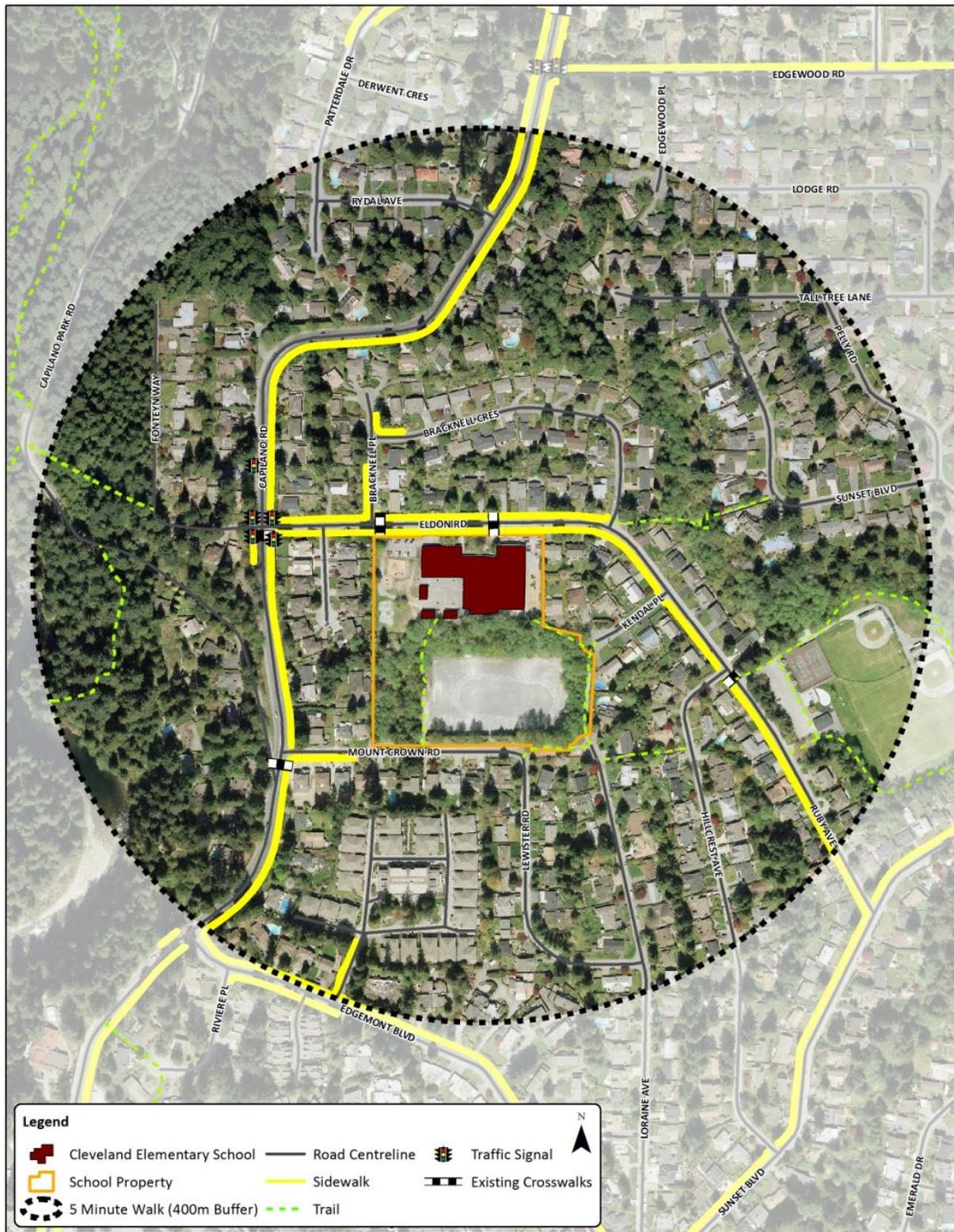
Crosswalks

The main marked crosswalk across Eldon Road is located near the school entrance, and is demarcated with traffic cones during school hours. Curb extensions were recently installed to shorten the distance crossed by pedestrians. This marked crosswalk is monitored by a volunteer parent and students during peak hours. There is also a marked crosswalk at the Eldon Road and Bracknell Place intersection which is not monitored by crossing guards, but is also demarcated with cones and pylons to increase the awareness of drivers. Marked crosswalks are also provided across Capilano Road at both Eldon Road and Mount Crown Road.

Trails

As shown in Figure 3.5, there are a number of trails that provided access to Cleveland Elementary from a number of different directions. From the south of the school property, there are two main trails. The trail from Mount Crown Road, through the wooded area on the west of the gravel field, provides access to the back and west side of the school. A trail leading from Loraine Avenue around the eastern edge of the school property provides access to the back of the school. The Kendal Place cul-de-sac also connects to this east trail. Additional trails facilitate access to the school from adjacent neighbourhoods, such as those from Sunset Boulevard to Eldon Road, and from Hillcrest Avenue to Loraine Avenue.

Figure 3.5: Cleveland Elementary Existing Pedestrian Facilities



3.5.4 Bicycle Facilities

Bicycle Routes

There are no designated bicycle routes in the area around Cleveland Elementary, although the District's draft 2011 Bicycle Master Plan identifies a planned on-street bicycle route on Capilano Road in the future.

Trails

Most of the trails on the school grounds contain staircases and thus deter use by cyclists. To facilitate use of the trail on the western edge of the gravel field, the school has one bicycle rack placed at the foot of the staircase, which allows students to lock up their bicycles before ascending the trail.

Bicycle Parking

There are currently two bicycle racks on the school property – The first near the main entrance on Eldon Road, and the second located on the back gravel field. Both of the racks were observed to be moderately used on sunny days, with approximately 7 to 10 bicycles in each rack.

3.5.5 Transit Services and Facilities

Capilano Road is the nearest transit corridor, with several north-south bus routes, including:

- #236 Lonsdale Quay, Grouse Mountain – operates every 15 minutes;
- #246 Downtown, Lonsdale Quay, Highlands – operates every 15 minutes during peak hours, and every 30 minutes during off-peak hours;
- #247 Downtown, Upper Capilano, Grouse Mountain – operates every 30 minutes between 8:00am to 9:00 am and 4:00pm to 6:00pm;
- #232 Grouse Mountain, Phibbs Exchange – operates every 30 minutes.

The nearest bus stop to Cleveland Elementary is at the Eldon Road and Capilano Road intersection.

3.5.6 Parking

Off-Street Parking

Staff parking at Cleveland Elementary is divided into three parking lots, with a total of 32 parking stalls. The lots were observed to have a vacancy of approximately 1 to 3 spots per lot. The number of parking stalls is generally sufficient to accommodate staff demand, with less than 25 full-time equivalent (FTE) teachers and administrators on staff.

On-Street Parking

Parents are restricted from using the staff parking lot for drop-off and pick-up activity. As shown in Figure 3.6, there are several areas on Eldon Road where parking is restricted during school hours. As a result, the majority of parent parking occurs in the designated drop-off/pick-up zones on Eldon Road, and on Bracknell Crescent and Ruby Avenue where no parking restrictions apply. Peak hour parking was

observed to extend along Ruby Avenue as far as Hillcrest Avenue. Further, considerable congestion can occur at the intersections of Bracknell Place and Eldon Road, as many parents use this road to park, and then to turn around.

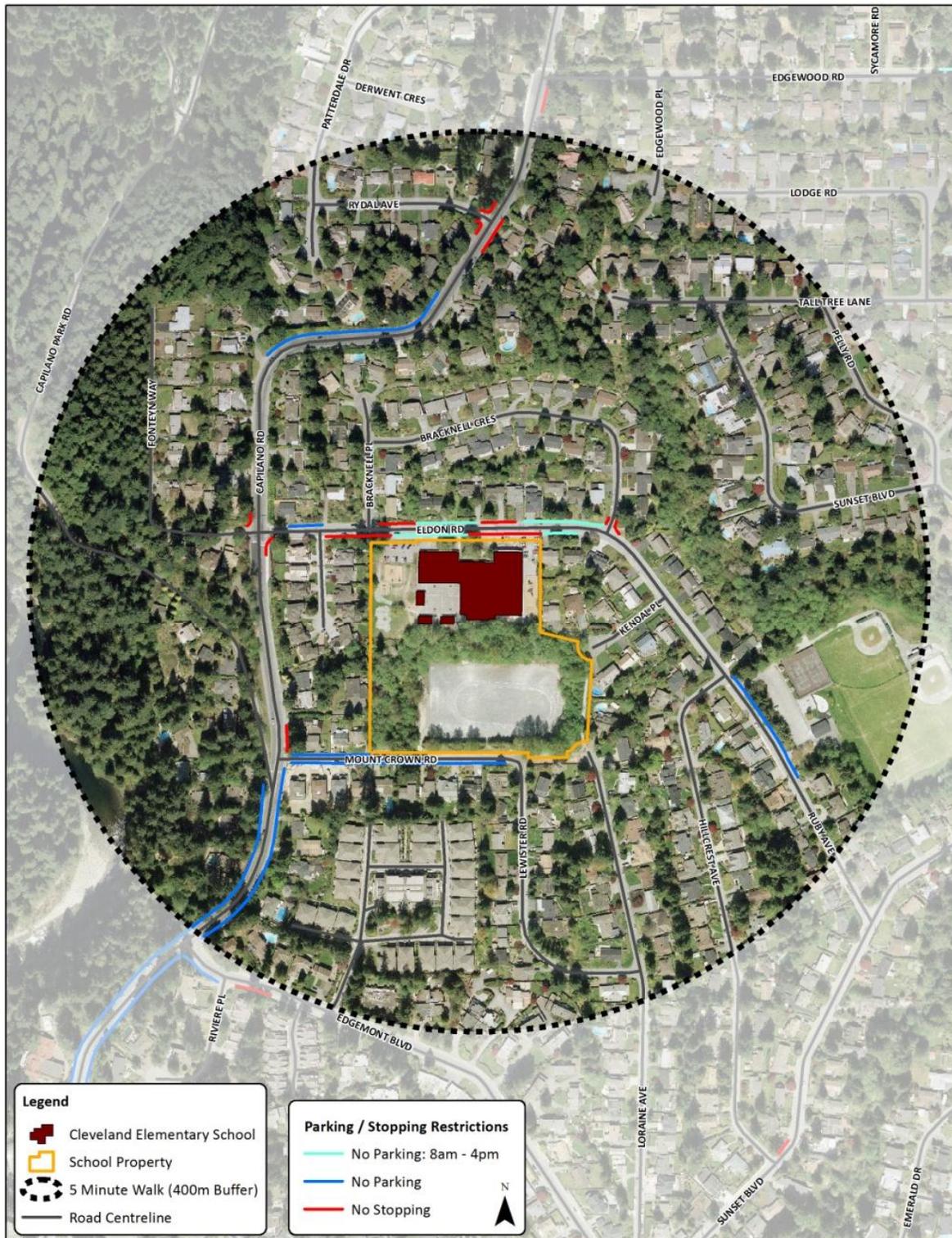
3.5.7 Drop-off Zones

Eldon Road has several designated drop-off/pick-up zones on both sides of the street. The zones are delineated by pylons during school hours, and are located intermittently between Bracknell Place and Bracknell Crescent. These drop-off zones prohibit parking during 8:00am to 4:00pm on school days, but parents were observed to use these zones to park and wait for their children at day's end.

3.5.8 Safety

ICBC collects and maintains statistics for all reported collisions in British Columbia. The collision data classifies reported collisions based on the type of reported collision as follows: fatality, injury, material damage (above \$1,000), and material damage (under \$1,000), and also includes reported collisions involving pedestrians or cyclists. ICBC collision data was reviewed for all roads within approximately 400 metres of Cleveland Elementary for the past five years (2006 to 2010) to identify overall collision frequencies around the school. Overall it was found that collisions around schools are not very common, and those that do occur are generally relatively minor and do not usually involve pedestrians or cyclists. The highest number of reported collisions was found along Capilano Road at the Eldon Road intersection, followed by Capilano Road at Mount Crown Road, Capilano Road north of Eldon Road, and Eldon Road adjacent to Cleveland Elementary between Bracknell Place and Bracknell Crescent. However, it should be noted that the majority of reported collisions around the school (84%) only involved material damage. 16% of reported collisions did result in an injury, all of which occurred along Capilano Road. No reported collisions were noted to have involved pedestrians, and one collision over this period along Capilano Road between Edgemont Boulevard and Mount Crown Road was noted to have involved a cyclist.

Figure 3.6: Cleveland Elementary Parking and Stopping Restrictions

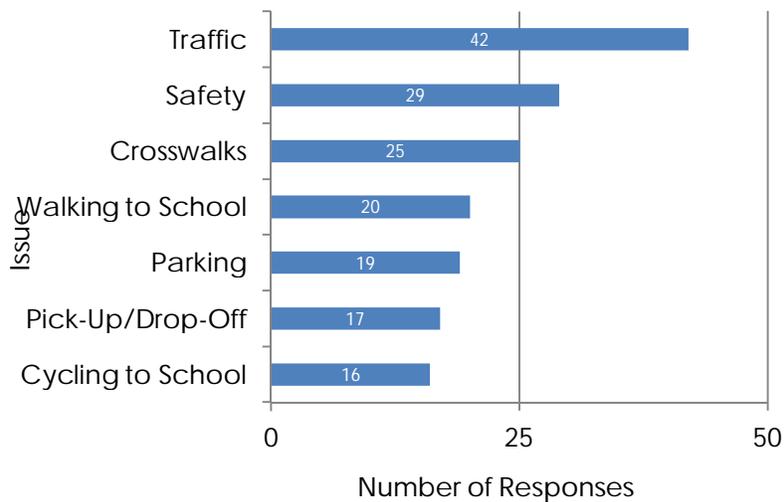


3.6 Issues

This section describes transportation and safety issues that have been identified to date based on the on-line survey responses, field visits, and existing conditions summary in the previous section.

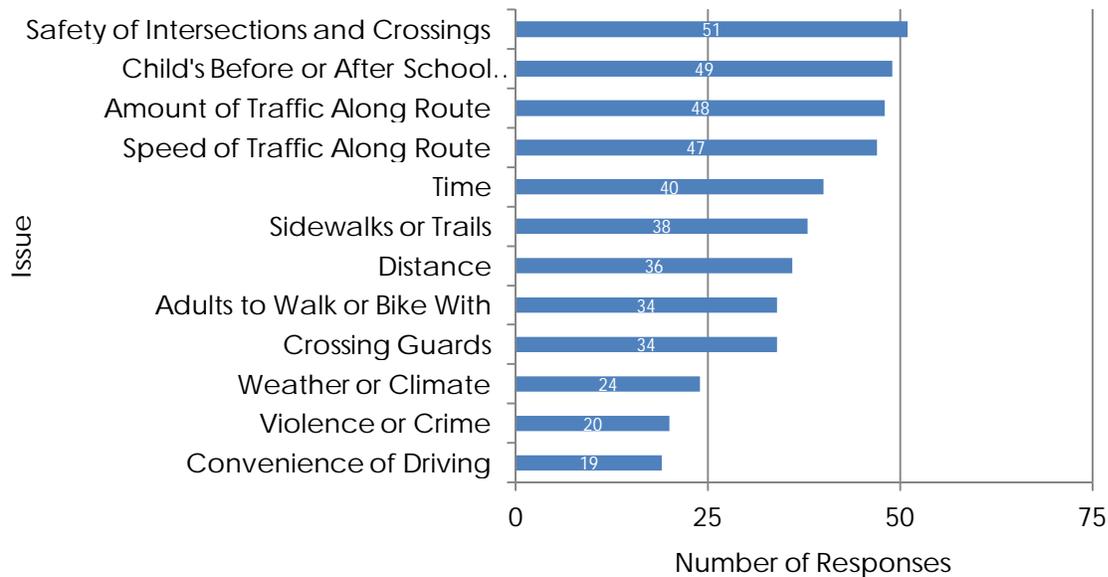
The on-line survey asked respondents to identify which issues present safety concerns getting their children to and from school. As shown in Figure 3.7, the primary safety concerns identified by survey respondents were related to traffic, safety, and crosswalks.

Figure 3.7: Cleveland Elementary Reported Safety Concerns



The on-line survey also asked respondents to identify the key transportation issues affecting the decision to allow their children to walk or bicycle to or from school. As noted in Figure 3.8, the most significant issue identified by survey respondents for Cleveland Elementary was the safety of intersections and crossings, followed by children's before or after school activities, traffic volumes, and traffic speeds. Other notable issues included affecting this decision included the time and distance to school and the presence of sidewalks or trails.

Figure 3.8: Cleveland Elementary Transportation Issues



Specific transportation and safety issues that have been identified to date around Cleveland Elementary include:

- *Speeding* is perceived as an issue on several roads near the school, including Capilano Road, Eldon Road, Ruby Avenue, Sunset Boulevard, and Ridgewood Drive;
- *Missing sidewalks* on several streets, including the west side of Capilano Road, east side of Ruby Road, the north side of Mount Crown Road, and on Loraine Avenue;
- *Vegetation overgrowth* on sidewalks including those along Eldon Road;
- *Intersection safety* is perceived to be an issue at several locations, including the Capilano Road intersections at Mount Crown Road and Eldon Road; Ridgewood Avenue at Paisley Road/Sunset Boulevard; Sunset Boulevard intersections at Edgemont Boulevard and Virginia Crescent, the Loraine Avenue and Lewister Road intersection which lacks both a stop sign and sidewalks; and the Eldon Road and Bracknell Road intersection which lacks a marked crosswalk.
- *Lack of parking* close to the school entrance;
- *Traffic volumes* during drop-off and pick-up periods, particularly along Eldon Road leads to difficulty crossing from stairs, as well as along Capilano Road;
- *Intermittent speed restriction signage* particularly along Ruby Avenue near Eldon Park, where the signage is neither prominent nor frequent;
- *Traffic congestion* at the Capilano Road and Eldon Road intersection with vehicles queuing both on Eldon Road westbound and Capilano Road southbound waiting to turn left; and

- *Driver behavior*, including vehicles not following traffic regulations, such as parking in no-parking areas, not stopping for pedestrians in crosswalks, u-turns, blocking of and turning around in driveways, and stopping in the street.

3.7 Improvement Options

The existing conditions and issues at Cleveland Elementary School were assessed, and improvements were identified to enhance the safety of walking and cycle routes to the school grounds. Table 3.3 below describes the recommended improvement options proposed to the Cleveland PAC, DNV, and NVSD for potential inclusion in the final school safety implementation strategy (discussed further in Section 5.0). Please note that recommendations are aligned with the 2007 Upper Capilano Road Crosswalk Location Priority and Safety Review study by ICBC. Figure 3.9 shows the location of these improvement options.

Table 3.3: Improvement Options – Cleveland Elementary

Improvement Type		Location	Description
1. Curb extensions	1a	Eldon Road at Bracknell Place	Provide curb extensions on east side of intersection at existing marked crosswalk to reduce pedestrian crossing distance
	1b	Eldon Road at Capilano Rd.	Provide curb extensions on south side of intersection at existing marked crosswalk to reduce pedestrian crossing distance
2. Sidewalks	2a	Bracknell Place	Construct sidewalk on east side of Bracknell Place to improve pedestrian safety
	2b	Mount Crown Road	Extend existing sidewalk on south side of road to intersection with Lewister Rd. to improve pedestrian safety
3. Marked Crosswalks	3a	Eldon Road at Bracknell Place	Raise existing marked crosswalk to reduce traffic speeds and improve pedestrian safety
	3b	Eldon Road (in front of school entrance)	Raise existing marked crosswalk to reduce traffic speeds and improve pedestrian safety
	3c	Ruby Avenue at Hillcrest Avenue	Raise existing marked crosswalk to reduce traffic speeds and improve pedestrian safety
	3d	Mount Crown Road	Provide no-stopping zone at trail entrance to ensure visibility
4. Signs	4a	Mount Crown Road	Provide "No U-turn" signs to discourage u-turn movements
	4b	Mount Crown Road	Provide signs at trailhead to improve visibility and awareness of trail
	4c	Ruby Avenue, Eldon Road	Provide additional 30 km/hr signs to reduce vehicle speeds
5. Intersection Improvements	5a	Eldon Road at Capilano Road	Consider intersection improvements as part of the Capilano Road Road Safety Plan
6. Outlying Intersections	6a	Sunset Blvd at Pelly Road/Virginia	Implement traffic calming treatments (i.e. curb extensions, traffic circle) to improve safety
	6b	Sunset Blvd at Edgemont Blvd	Conduct separate study on intersection safety/treatments
	6c	Lorraine Avenue at Lewister Road	Install a stop sign to improve intersection safety
7. Bike racks	7a	School grounds	Provide more bicycle racks in the upper and lower grounds
8. Traffic restrictions	8a	Lorraine Avenue (cul-de-sac)	No stopping 8:30a to 9:30am and 2:30 to 3:30 to prevent pick-ups and drop-offs in the cul-de-sac
8. Program / In-class Initiatives	8a		<ul style="list-style-type: none"> - Participate in TransLink's TravelSmart program for elementary schools - Pursue rideshare initiatives/education through online carpooling networks (https://online.ride-share.com/en/my/) and information at www.travelsmart.ca - Issue announcements/reminders to parents on safety improvements and/or changes in traffic rules, as well as information on safe routes to school - Promote in-class education promoting walking, cycling and traffic safety including "walking field trips", in conjunction with the RCMP and ICBC - Include information on the school website on safe routes to school / active transportation - Consider promoting a 'Park and Walk' or Walking School Bus from Eldon Park parking Lot to the school entrance - Promote (or continue to promote) bike/walk to school events such as bike to school week, Winter Walk Day, IWalk with contests and prizes with related in-class activities - Consider a traffic safety patrol program, can acquire safety training from BCAA

Figure 3.9: Improvement Options – Cleveland Elementary



4.0 ROSS ROAD ELEMENTARY

4.1 Context

Ross Road Elementary is located on Bushnell Place, south of Ross Road in Lynn Valley. The school provides instruction to over 500 students from Kindergarten through Grade 7. Ross Road is a dual-track school that offers an English Program and French Immersion Program from Kindergarten to Grade 7.

The surrounding neighbourhood is predominantly a low to medium-density residential neighbourhood, and enjoys a close proximity to the services and amenities of the Lynn Valley Town Centre. The school's catchment area for the English language program is bounded by Mountain Highway to the west, Lynn Creek to the east, East 27th Street and Hastings Creek to the south, and Ross Road and Westover Road to the north.



4.2 Demographics

Ross Road Elementary had a student enrollment in the 2010-2011 school year of 525 students. As shown in Table 4.1, the school has the highest proportion of students enrolled in French Immersion of the three schools in this study, with nearly two-thirds (64%) of the student population enrolled in the French Immersion program.

Table 4.1: Student Enrollment by Program

Program	Number of Students	Proportion of Students
English	188	36%
French Immersion	338	64%
<i>Total</i>	<i>526</i>	<i>100%</i>

Ross Road Elementary has a significant number of students who live beyond a reasonable walking distance to the school, as shown in Figure 4.1. However, the majority (52%) of Ross Road students actually live within 800 metres (approximately ten minute walking distance) from the school, as noted in Table 4.2. In contrast, less than half (48%) of students live further than a ten minute walking distance (800 metres), while only 18% of students live further than a twenty minute walking distance (1,600

metres). As will be discussed further below, the distances that students travel to school has significant implications for travel patterns to Ross Road Elementary.

Figure 4.1: Ross Road Elementary Student Location



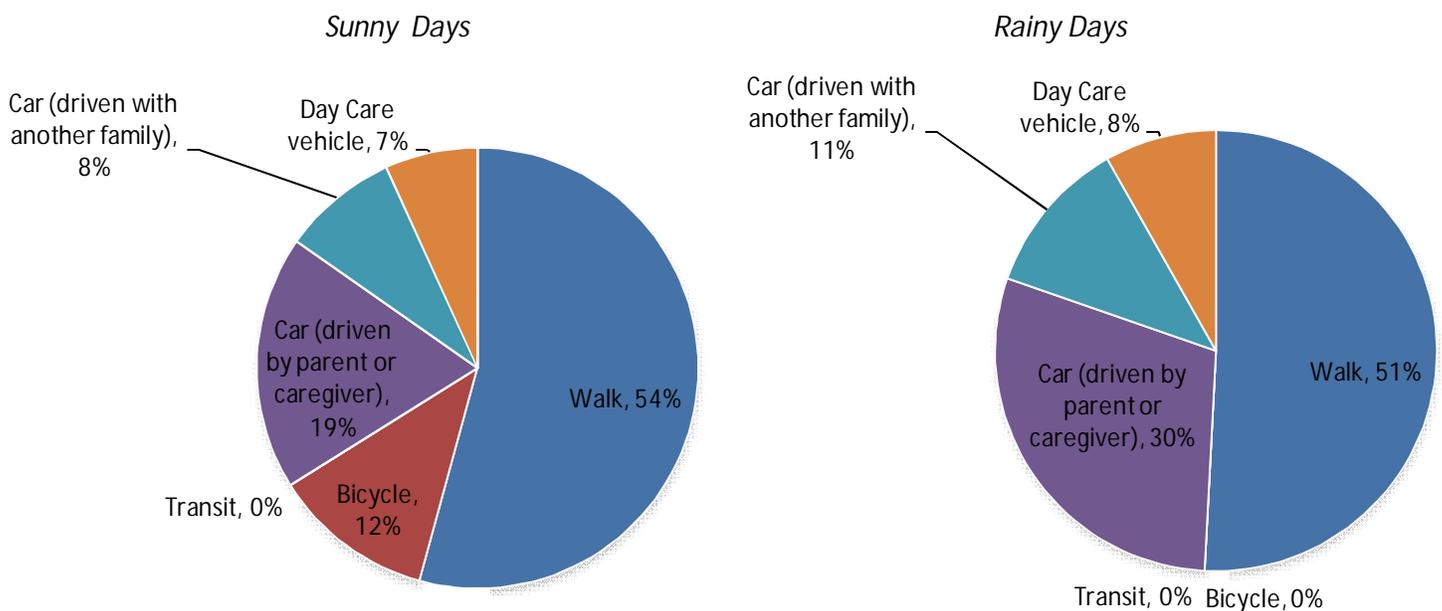
Table 4.2: Student Enrollment by Distance from School

Distance From School	Proportion of Students
< 400 metres	20%
400 – 800 metres	32%
800 – 1200 metres	17%
1200 – 1600 metres	13%
>1600 metres	18%
Total	100%

4.3 Travel Patterns

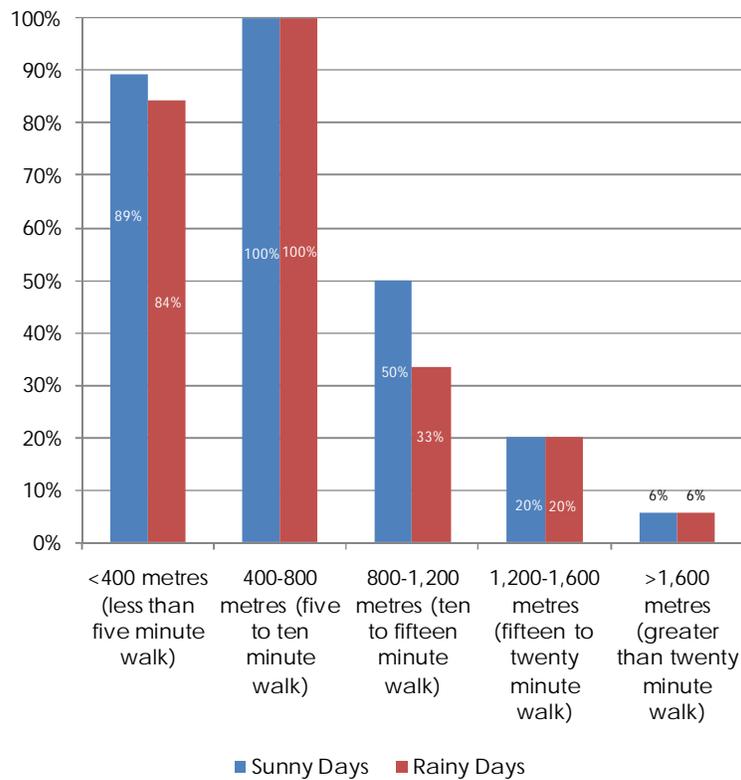
The results of the on-line survey indicated that the majority of students walk to school on both dry or sunny days (54%) and on rainy days (51%). In fact, as shown in Figure 4.2, the proportion of trips to school by walking is significant, even on rainy days. Ross Road Elementary also has a significant proportion of students (12%) who bicycle to school on sunny days. Of particular note is that there is a relatively low proportion of students who are driven to school by their parent or caregiver. In addition to a higher proportion of walking and cycling trips to Ross Road is partially accounted for by respondents indicating they use more varied transportation option, most notably vehicles driving with another family and day care vehicles.

Figure 4.2: Mode Share to Ross Road Elementary on Sunny and Rainy Days



As shown in Figure 4.3, the overwhelming majority of students who live within approximately 800 metres (roughly a ten minute walk) walk to school on both sunny and rainy days. This is particularly significant due to the fact that the majority of students live within 800 metres of the school. The percentage of students who walk to school decreases significantly beyond a ten minute walking distance, particularly on rainy days.

Figure 4.3: Walking Mode Share to School Based on Distance to School



4.4 Transportation Initiatives

Ross Road Elementary has already taken steps to promote active transportation and manage traffic movements and improve safety conditions at the school. The school promotes Bike to School week through providing incentives (i.e. class pizza rewards) and getting students to make awareness posters. The District implemented a one-way traffic loop that is in effect during peak hours in order to streamline traffic movements. Ross Road school newsletters often promote awareness about the one-way traffic loop, designated pick-up/drop-off locations, safety awareness, and reminders about no idling and blocking driveways. The school has a valet program to ensure smoother and safer traffic movements, where students are dropped off near the school entrance and then escorted into the school grounds by student volunteers. Parent volunteers also help to direct traffic and ensure safety and efficiency during the morning peak period.

4.5 Existing Conditions

This section describes existing transportation conditions in the area around Ross Road Elementary school. This includes a summary of existing access points, road network characteristics, pedestrian facilities, bicycle facilities, transit services and facilities, parking, drop-off and pick-up zones, and safety.

4.5.1 Access Points

The main entrance to Ross Road Elementary is located on Bushnell Place. Students can also access the school through the Allan Road cul-de-sac, which backs onto the school property, as well as through a trail that connects to East 27th Street to the south of the school.

4.5.2 Road Network

Road Classifications

As shown in Figure 4.4, there are a number of collector and arterial roads near Ross Road Elementary. Lynn Valley Road and Mountain Highway are classified as major arterial roads, with a primary function to support traffic movement of all types of vehicles. Ross Road is currently classified as a minor arterial road, which also has a primary function to support traffic movement on roads with 3,000 – 10,000 vehicles per day. However, as part of the District's Transportation Plan, Ross Road is being considered to be reclassified as a collector road to better reflect its existing traffic volumes of approximately 3,700 vehicles per day and because a previously planned extension of Ross Road is not longer being considered. Other roads currently classified as collector roads near the school include Bushnell Place, Hoskins Road, Allan Road north of Ross Road, East 27th Street west of Viewlynn Drive, and Viewlynn Drive. All remaining roads near the school are classified as local roads.

Intersections

Key intersections in close proximity to the school include Bushnell Place at Kilkenny Road, Bushnell Place at Ross Road, and Kilkenny Road at Hoskins Road.

4.5.3 Pedestrian Facilities

Sidewalks

The majority of the streets in the area around Ross Road Elementary have a sidewalk on at least one side of the street. This is largely a reflection of the number of collector and arterial roads in the area around the school. Hoskins Road south of Ross Road has sidewalks on both sides of the street. Ross Road, Bushnell Place, Kilkenny Road, Allan Road north of Ross Road, and Hoskins Road north of Ross Road all have sidewalks on one side of the street.

Trails

The forested area to the south of the school property contains a trail network that facilitates the movement of students from the southern neighbourhoods. There is a short trail connection from East 27th Street, and also a longer trail that runs along Hastings Creek, with connections to some of the adjacent residential areas. The trail has steep topography in areas, is well-maintained, and is unsigned at the trailheads. The trail from East 27th Street is well used by students and parents walking in and out with their children.

Figure 4.4: Ross Road Elementary Road Network Classification

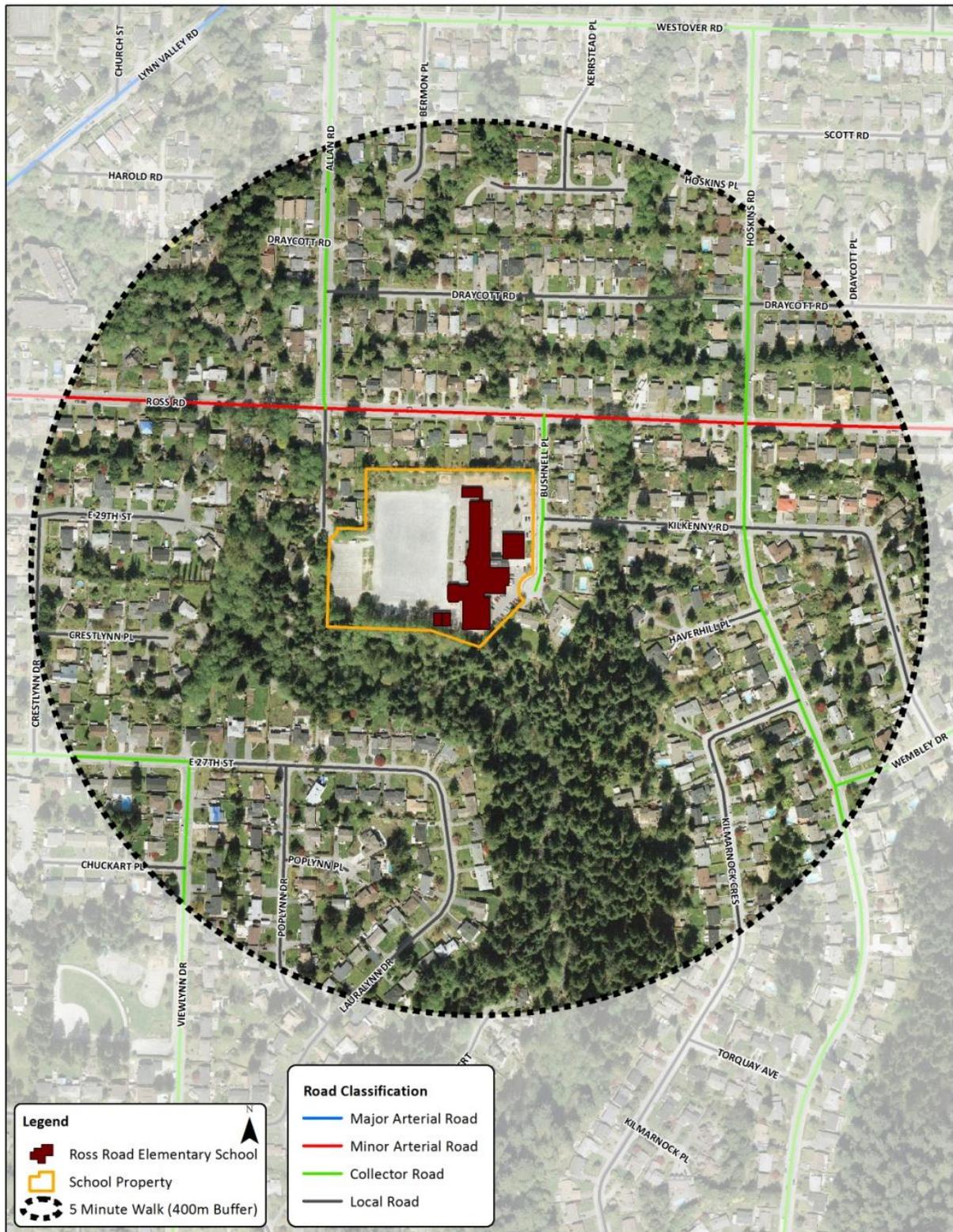
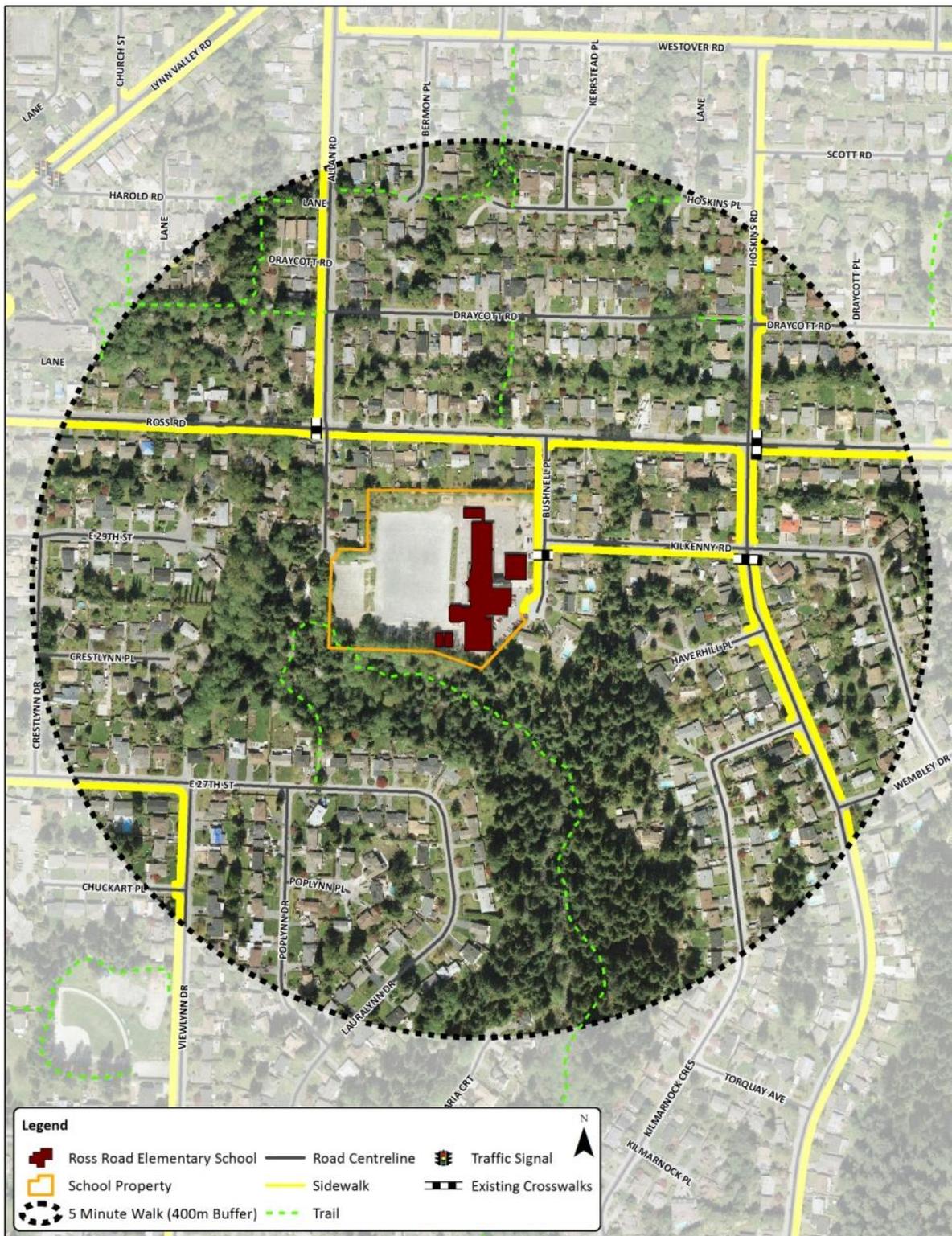


Figure 4.5: Ross Road Elementary Existing Pedestrian Facilities



Crosswalks

Marked crosswalks are provided at several locations, including the south side of the Bushnell Place and Kilkenny Road intersection, west side of the Allan Road and Ross Road intersection, and the south side of the Kilkenny Road and Hoskins Road intersection.

4.5.4 Bicycle Facilities

Bicycle Routes

The District's 2011 draft Bicycle Master Plan identifies bicycle routes on East 27th Street, Viewlynn Drive, and Lynn Valley Road. Trails in Hastings Creek are not amenable to cyclists due to the steep topography and presence of stairs and steep embankments.

Bicycle Racks

There are four bicycle racks at Ross Road Elementary. One rack is located in the front of the building near the playground, which is used mainly by the students in the primary grades. This bicycle rack is considerably newer than the other racks, and as such is in very good condition. Field observations were made in early June during both the morning and afternoon peak period, and the front rack was observed to be in high use (over 15 bicycles per day) on sunny days, with bicycles also locked to a nearby tree because of lack of space. The other three bicycle racks are located in the rear of the building, and are primarily used by older students. These racks were also observed to be very well used, with approximately 20 to 30 bicycles per day. In addition to the formal bicycle parking, the chain 'fence' that separates the rear play area from the gravel field as an informal bicycle parking was also observed to be a popular parking spot for bicycles. In total, approximately 40 to 50 bicycles were observed to be parked on the school grounds during fair weather days in June. While this may have been due to sunny weather, it was also noted that the school had promoted Bike to School Week the previous week, with daily prizes for the class with the most participants. This may have effectively encouraged more students to use bicycles even after Bike to School week finished.

4.5.5 Transit Facilities

Ross Road and Hoskins Road are the nearest transit corridors to Ross Road Elementary, served by the 229 route. Descriptions of this route and other nearby transit routes are as follows:

- *#229 West Lynn, Phibbs Exchange, Lonsdale Quay* – This bus operates on Hoskins Road, with the closest bus stop at the intersection with Kilkenny Road. The frequency of Route #229 is every 30 minutes, except during the evening peak hour period when the bus operates every 15 minutes.

- #228 *Lonsdale Quay* – Operates every 15 to 30 minutes during peak hours, and every 30 minutes during non-peak hours. Provides service between Lonsdale Quay and Upper Lynn Valley, with service on Lynn Valley Road.
- #209/210 *Vancouver* – Offers peak hour service every 10 to 15 minutes, with non-peak hour service every 30 minutes. Provides service between Upper Lynn Valley and downtown Vancouver, with service on Mountain Highway.
- #255 *Capilano University/Dundarave* – Provides service via Mountain Highway, Lynn Valley Road and Marine Drive between Dundarave in West Vancouver and Capilano University in eastern North Vancouver. Morning peak hour service is provided every 30 minutes and evening peak hour service is every 15 minutes. Non-peak hour service is offered every 30 minutes.

4.5.6 Parking

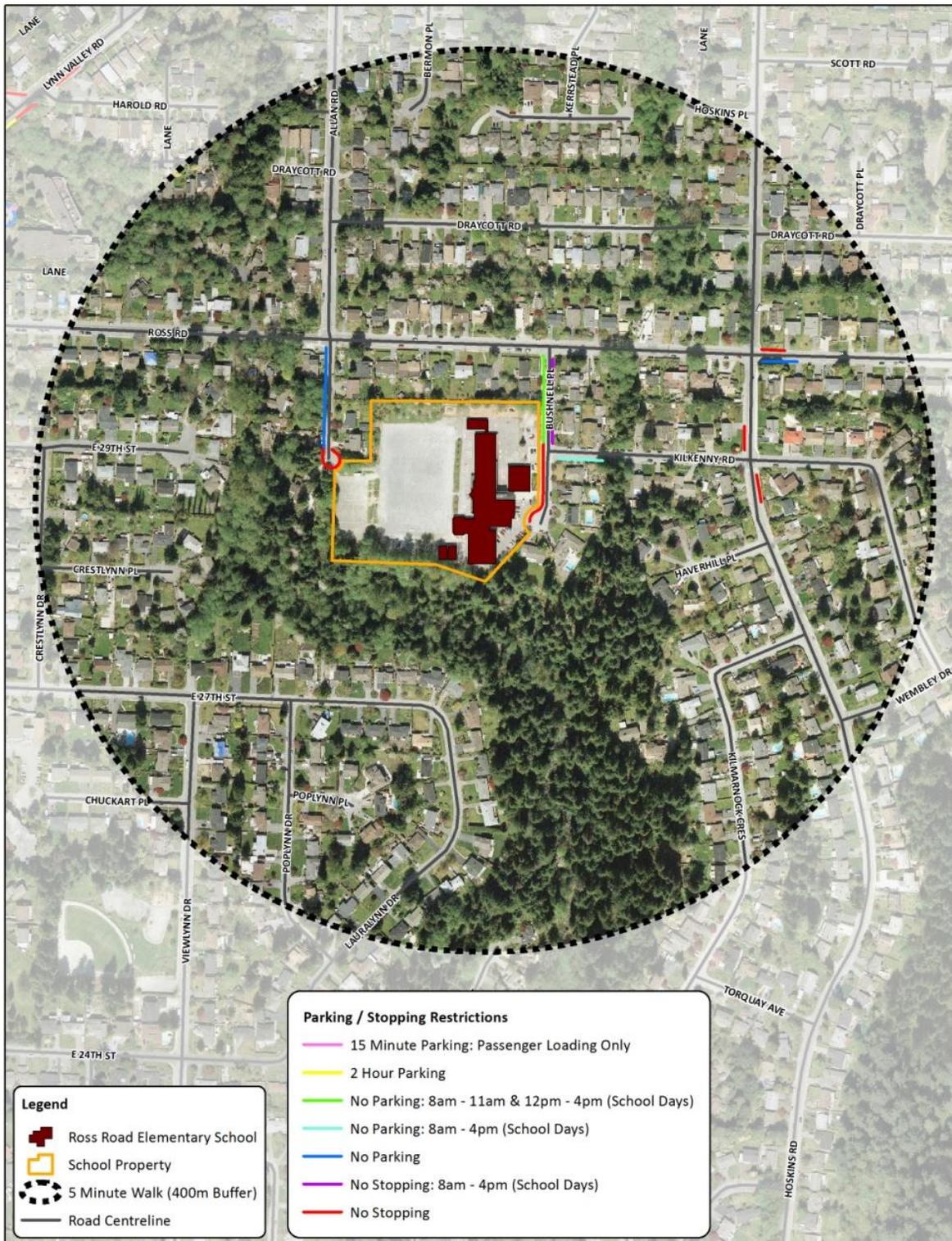
Off-Street Parking

Ross Road Elementary has two lots available for staff parking only with a total of 28 parking spaces. The primary lot, which has an entrance off of the Bushnell Place cul-de-sac, has 22 parking stalls, while the secondary lot has 6 stalls. There is no preferential parking, except one stall for disabled parking in the primary lot. The demand for the parking spaces is primarily from the school staff, of which Ross Road has approximately 26 full-time equivalent (FTE) teachers and administrators, approximately 12 office and support staff members, and additional student services members on staff. Both of the parking lots were observed to be at or near capacity on multiple occasions, suggesting the current parking lot supply may not sufficiently meet staff parking demands.

On-Street Parking

As shown in Figure 4.6, on-street parking is not permitted any time on the west side of Allan Road south of Ross Road. Parking is not permitted during school hours (8:00am to 4:00pm) on the south side of Kilkenny Road east of Bushnell Place, and on the west side of Bushnell Place north of Kilkenny Road. In addition, there is no stopping or parking permitted on the east side of Bushnell Place, in order to enforce the one-way traffic loop that is in place during peak hours. Parking is permitted on both sides of all other streets.

Figure 4.6: Ross Road Elementary Parking and Stopping Restrictions



4.5.7 Drop-off Zones

In the morning drop-off period, Ross Road Elementary has implemented a successful “valet” parking program on the west side of Bushnell Place, which allows parents to drive their children to the front of the school where a student volunteer will escort those students dropped off to the school entrance. This avoids parents having to park and walk in with their children, and allows for more efficient traffic movements on Bushnell Place and Kilkenny Road. In both the morning and afternoon, many parents use Kilkenny Road and Ross Road for drop-offs and pick-ups. In the afternoon, there is much more parking activity occurring on Kilkenny Road, with cars lining up on along almost the entire length of both sides of the road. As well, parents were observed to park on Allan Road, which causes considerable congestion in the narrow roadway.

4.5.8 Safety

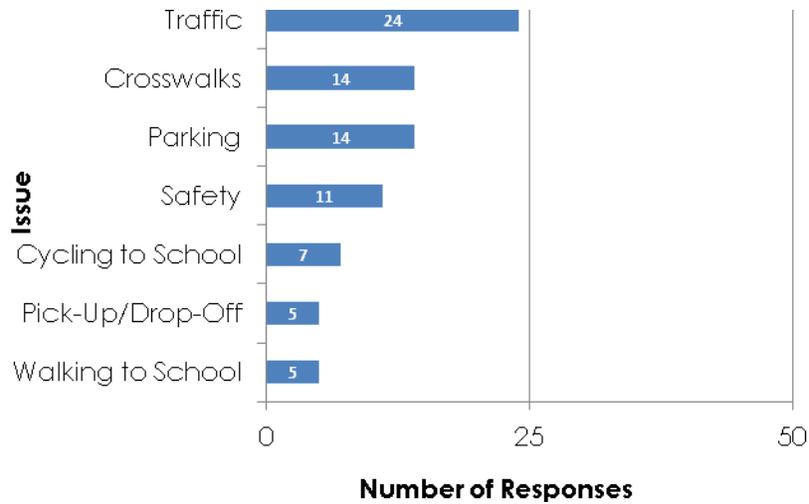
ICBC collects and maintains statistics for all reported collisions in British Columbia. The collision data classifies reported collisions based on the type of reported collision as follows: fatality, injury, material damage (above \$1,000), and material damage (under \$1,000), and also includes reported collisions involving pedestrians or cyclists. ICBC collision data was reviewed for all roads within approximately 400 metres of Ross Road Elementary for the past five years (2006 to 2010) to identify overall collision frequencies around the school. Overall it was found that collisions around schools are not very common, and those that do occur are generally relatively minor and do not usually involve pedestrians or cyclists. The highest number of reported collisions was found at the Ross Road and Hoskins Road intersection, followed by Ross Road between Allan Road and Bushnell Place, and Bushnell Place south of Kilkenny Road. It should be noted that the majority of reported collisions around the school (93%) only involved material damage. 7% of the reported collisions did result in an injury, most of which occurred along Ross Road and at the Ross Road and Hoskins Road intersection. No reported collisions were noted to have involved cyclists, and one collision over this period was noted to have involved a pedestrian along Ross Road.

4.6 Issues

This section describes transportation and safety issues that have been identified to date at Ross Road Elementary based on the on-line survey responses, field visits, and existing conditions summary in the previous section.

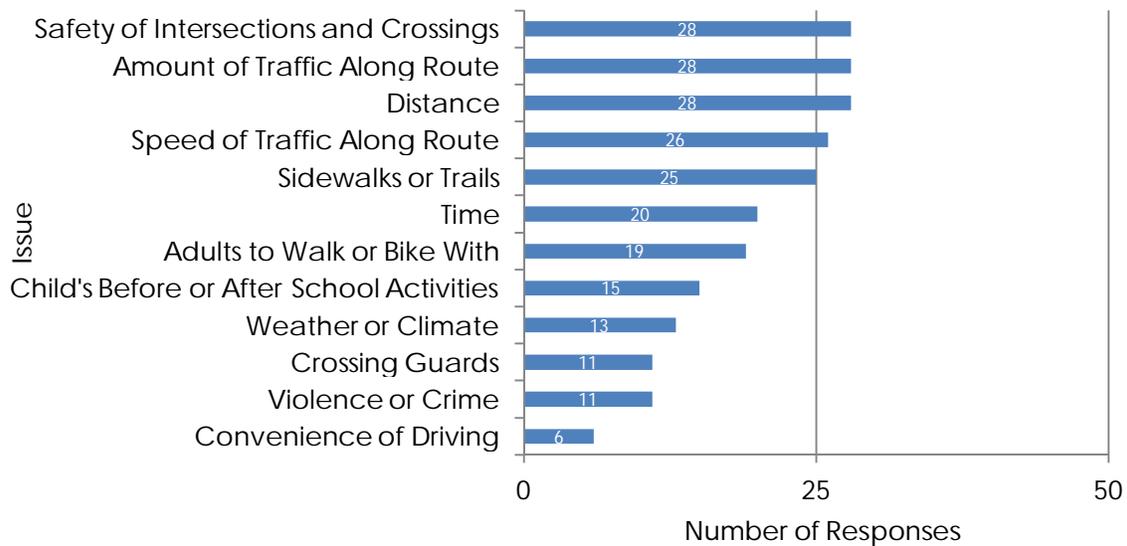
The on-line survey asked respondents to identify which issues present safety concerns getting their children to and from school. As shown in Figure 4.7, the primary safety concerns identified by survey respondents were related to traffic, crosswalks, and parking.

Figure 4.7: Ross Road Elementary Reported Safety Concerns



As noted in previous sections, the on-line survey also asked respondents to identify the key transportation issues affecting the decision to allow their children to walk or bicycle to or from school. As noted in Figure 4.8, the most significant issue identified by survey respondents for Ross Road Elementary was the safety of intersections and crossings, followed by traffic volumes, distance to school, and traffic speeds.

Figure 4.8: Ross Road Elementary Transportation Issues



Specific transportation and safety issues that have been identified to date around Ross Road Elementary include:

- *Speeding* is perceived as an issue on Ross Road , Lynn Valley Road, and Mountain Highway;
- *Missing sidewalks* on several streets, including the north side of Ross Road, north side of Kilkenny Road, east side of Bushnell Road, and both sides of East 27th Street;
- *Intersection safety* on Ross Road at Hoskins Road;
- *Traffic volumes* during drop-off and pick-up periods, particularly along Ross Road;
- *Pick-up and drop-off in the Allan Road cul-de-sac* presents issues regarding safety, congestion, and blocked driveways due to the narrow width of Allan Road
- *Driver behavior*, including vehicles not following traffic regulations, such as parking in no-parking areas, double parking, and blocking of driveways.

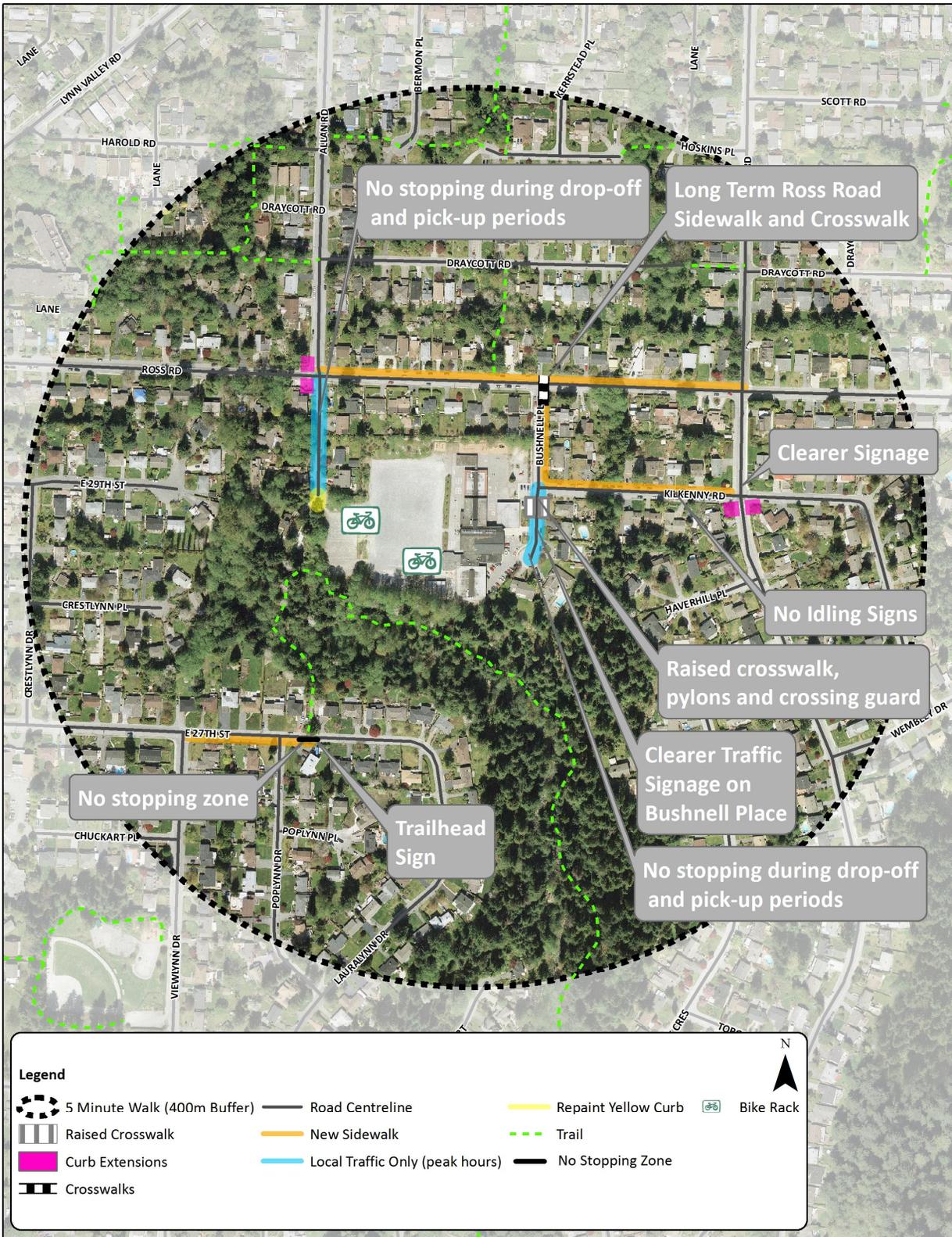
4.7 Improvement Options

The existing conditions and issues at Ross Road Elementary School were assessed, and opportunities were identified to introduce improvements to enhance safety of walking and cycle routes to the school grounds. Table 4.3 below describes the recommended improvement options proposed to the Ross Road PAC, DNV, and NVSD for potential inclusion in the final school safety implementation strategy (discussed further in Section 5.0). Figure 4.9 shows the location of these improvement options.

Table 4.3: Improvement Options – Ross Road Elementary

Improvement Type		Location	Description
1. Curb Extensions	1a	Ross Road at Allan Road	Upgrade temporary curb extension to permanent curb extension on northwest corner of intersection to reduce pedestrian crossing distance and improve pedestrian visibility
	1b	Kilkenny Road at Hoskins Rd.	Provide curb extensions on south side of intersection at marked crosswalk to reduce pedestrian crossing distance
2. Sidewalks	2a	Ross Road	Construct sidewalk on north side between Allan Road and Hoskins Road to improve pedestrian safety and accessibility
	2b	Bushnell Place	Construct sidewalk on east side to improve pedestrian safety and accessibility
	2c	Kilkenny Road	Construct sidewalk on north side to improve pedestrian safety and accessibility
	2d	East 27 th Street	Extend existing sidewalk on south side of East 27 th street to connect sidewalk to trail
3. Marked Crosswalks	3a	Ross Road at Bushnell Place	Provide new marked crosswalk, only in conjunction with sidewalk improvements on Bushnell Place/Ross Road (2a/2b)
	3b	Bushnell Place at Kilkenny Road	Upgrade existing marked crosswalk to raised crosswalk and/or introduce pylons at marked crosswalk to discourage vehicles from entering cul-de-sac and improve pedestrian safety
	3c	East 27 th Street	Implement no stopping zone to trail head to improve visibility
4. Signage	4a	Bushnell Place	Simplify amount of signs
	4b	Kilkenny Road at Hoskins Rd	Provide clearer signs (i.e. "no left-turn during peak hours")
	4c	Entrance to East 27 th trail	Provide wayfinding signs at trailheads to improve visibility
	4d	Kilkenny Road	Provide "No idling" signs
5. Painted Curbs	5a	Allan Road cul-de-sac	Repaint yellow curb to make no-parking restrictions more visible
6. Traffic Restrictions	6a	Allan Road (cul-de-sac)	Local traffic only during peak hours to restrict vehicles in cul-de-sac and improve pedestrian safety
	6b	Bushnell Place (cul-de-sac, south of Kilkenny Road)	Local traffic only during peak hours to restrict vehicles in cul-de-sac and improve pedestrian safety
7. Crossing Guard	7a	Crosswalk at Bushnell Place/Kilkenny Road	Designated crossing guard to school entrance
8. Bicycle Infrastructure	8a	School grounds	Additional racks near Allan Road entrance, replace existing racks at rear of school (south grounds)
9. Programs/In-Class Initiatives	9a		<ul style="list-style-type: none"> - Participate in TransLink's TravelSmart program for elementary schools - Pursue rideshare initiatives/education through online carpooling networks (https://online.ride-share.com/en/my/) and information at www.travelsmart.ca - Issue announcements/reminders to parents on safety improvements and/or changes in traffic rules, as well as information on safe routes to school - Include information on the school website on safe routes to school / active transportation - Promote in-class education promoting walking, cycling and traffic safety including "walking field trips", in conjunction with the RCMP and ICBC - Consider promoting a Walking (or Cycling) School Bus Program - Promote (continue to promote) in bike/walk to school events such as bike to school week, Winter Walk Day, IWalk with contests and prizes with related in-class activities - Consider a traffic safety patrol program, potential for BCAA to support with safety training

Figure 4.9: Improvement Options – Ross Road Elementary



5.0 IMPLEMENTATION

5.1 Priorities

The recommended implementation strategy for Braemar Elementary, Cleveland Elementary and Ross Road Elementary is organized into the time frame of short-term and medium-long term. Short-term implementation strategies for each school are described in Tables 5.1, 5.3 and 5.5, and medium-long term strategies are outlined in Table 5.2, 5.4 and 5.6.

Priorities were identified by the DNV and School District staff in conjunction with PAC representatives at each school. Short-term priorities were identified as the most pressing and effective improvements that will significantly improve conditions and community livability in the near future. Short-term implementation of engineering infrastructure generally includes high priority sidewalk construction, installation of curb extensions, installation of bicycle racks, and/or the implementation of local traffic restrictions. Several programmatic initiatives are also included in the short-term strategies, such as a valet program, walking school bus or park and walk programs, and participation in TransLink's TravelSmart program – many of which can be undertaken by the school administration and/or School District. Further, short-term recommendations include incorporating in-class activities, such as active field trips or activities from Canadian safe routes to school organizations, in order to educate students on safety and active transportation. Enforcement, an activity often carried out by District bylaw officers, is also included in the short-term strategy, as it is necessary to ensure compliance to new parking and traffic restrictions.

Medium and long-term priorities are targeted more specifically on infrastructure improvements. These improvements are which are not perceived to be critical immediately, but would further enhance and improve the environment for walking and cycling of routes after short-term priorities are implemented. Programmatic recommendations, such as in-class education opportunities, promotion of bike/walk to school initiatives, and school announcements to parents on traffic rules and safe routes are intended to carry on from the short-term into the medium and long-term time frame in order to establish a continued focus on healthy and safe travel behaviors. Random enforcement by the District's bylaw officers is also recommended on an on-going basis into the medium and long-term.

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 Education
 Encouragement
 Enforcement
 Evaluation

Table 5.1: Short-Term Improvements – Braemar Elementary

Recommended Improvements	Responsibility			
	DNV	NVSD	School	Other
Evergreen Place, between Everglade Place and Mahon Avenue: Construct sidewalk on the north side (65m)	✓			
Engage in the TravelSmart program (TransLink) for elementary schools		✓	✓	✓
Pursue opportunities for in-class education such as active field trips, and Active and Safe Routes elementary classroom activities		✓	✓	
Issue announcements/reminders to parents on traffic rules and/or safety improvements			✓	
Evergreen Place: Potential valet program, with drop-offs occurring and student volunteers escorting dropped-off students to the school entrance			✓	
Promote a Walking (or Cycling) School Bus program		✓	✓	
Promote events (and/or continue to promote) such as bike/walk to school week, Winter Walk day, IWalk club, with contests and class prize incentives			✓	
Calder Place cul-de-sac: Implement traffic restrictions - "Local Traffic Only" 8:30am to 9:30 am and 2:30pm to 3:30pm (2 signs)	✓			
Consider a traffic safety patrol program			✓	
Bylaw officer enforcement upon changes to parking / traffic regulations	✓			
Evaluate if safety improvements are achieving goals and if adjustments are required	✓	✓	✓	

Table 5.2: Medium and Long-Term Improvements – Braemar Elementary

Recommended Improvements	Responsibility			
	DNV	NVSD	School	Other
Mahon Avenue at Evergreen Place: Curb extensions on northwest and southwest corner	✓			
Mahon Avenue at Evergreen Place: Raise crosswalk at existing crosswalk on north leg	✓			
Delbrook Avenue at Evergreen Place: Curb extensions at existing marked crosswalk	✓			
Continue in-class safe routes/active transportation learning activities		✓	✓	
Yearly promotion of walk/cycle to school events		✓	✓	
West Braemar Road/Calder Avenue trail: Complete paved trail and trim vegetation		✓	✓	
Crossing guard (in absence of valet program) and pylons during the school day			✓	
Evergreen Place: Install "No U-Turn" signs in conjunction with bylaw enforcement (2 signs)	✓			
Evergreen Place (south side): Implement "No Parking" restrictions 8:30am to 9:30 am, 2:30 pm to 3:30 pm (4 signs)	✓			
Everglade Place: Implement traffic restrictions "Local Traffic Only" 8:30 am to 9:30 am, 2:30 pm to 3:30 pm (2 signs)	✓			
Random enforcement checks on a on-going basis by bylaw offices	✓			
Evaluate if safety improvements are achieving goals and if adjustments are required	✓	✓	✓	

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Table 5.3: Short-Term Improvements – Cleveland Elementary

Recommended Improvements	Primary Responsibility			
	DNV	NVSD	School	Other
Eldon Road at Bracknell Place: Raise existing crosswalk	✓			
Eldon Road (in front of school entrance): Raise existing crosswalk	✓			
Ruby Avenue at Hillcrest Avenue: Raise existing crosswalk	✓			
Install a stop sign at Loraine Avenue and Lewister Road (1 sign)	✓			
Engage in the TravelSmart program (TransLink) for elementary schools		✓	✓	✓
Pursue opportunities for in-class education such as active field trips, Active and Safe routes to school elementary classroom activities		✓	✓	
Issue announcements/reminders to parents on traffic rules and/or safety improvements			✓	
Promote (and/or continue to promote) events such as bike/walk to school week, Winter Walk day, IWalk club, with contests and class prize incentives		✓	✓	
Install more bicycle racks on the school grounds		✓	✓	
Consider a park and walk or Walking School Bus program from the Eldon Park parking lot to the entrance of Cleveland Elementary entrance		✓	✓	
More frequent/prominent 30 km/hr signs around Eldon Park (Ruby Ave)	✓			
Consider a traffic safety patrol program			✓	
Bylaw officer enforcement upon changes to parking / traffic regulations	✓			
Evaluate if safety improvements are achieving goals and if adjustments are required	✓	✓	✓	

Table 5.4: Medium and Long-Term Improvements – Cleveland Elementary

Recommended Improvements	Responsibility			
	DNV	NVSD	School	Other
Eldon Road at Capilano Road: Curb extensions on south side of intersection (existing marked crosswalk)	✓			
Eldon Road at Bracknell Place: Curb extensions on east side of intersection at existing marked crosswalk	✓			
Bracknell Place: Construct sidewalk on the east side (60m)	✓			
Mount Crown Road: Construct sidewalk on south side of road to Lewister Road (150m)	✓			
Mount Crown Road: Consider no stopping zone at trail entrance	✓			
At Pelly Road / Virginia: Implement traffic calming treatments	✓			
At Edgemont Boulevard: Conduct separate study on intersection safety/treatments	✓			
Continue in-class safe routes/active transportation learning activities		✓	✓	
Yearly promotion of walk/cycle to school events		✓	✓	
Mount Crown Road: Install "No U-Turn" signs at intersection with Lewister Road (2 signs)	✓			
Random enforcement checks on an ongoing basis for traffic/parking violations	✓			
Mount Crown Road: Install wayfinding sign at trailhead to school (1 sign)	✓			
Evaluate if safety improvements are achieving goals and if adjustments are required	✓	✓	✓	

Engineering
 Education
 Encouragement
 Enforcement
 Evaluation

Table 5.5: Short-Term Improvements – Ross Road Elementary

Recommended Improvements	Primary Responsibility			
	DNV	NVSD	School	Other
Ross Road at Allan Road: Upgrade temporary curb extension to permanent curb extension on the northwest corner of intersection; at the existing sidewalk	✓			
Engage in the TravelSmart program (TransLink) for elementary schools		✓	✓	✓
Pursue opportunities for in-class education such as active field trips, Active and Safe routes to school elementary classroom activities		✓	✓	
Issue announcements/reminders to parents on traffic rules and/or safety improvements			✓	
Promote (and/or continue to promote) events such as bike/walk to school week, Winter Walk day, IWalk club, with contests and class prize incentives		✓	✓	
School Grounds: Install additional bicycle racks near Allan Road entrance, and replace existing racks at the rear of school (south grounds)		✓	✓	
Promote a Walking School Bus program		✓	✓	
Allan Road (cul-de-sac): Implement traffic restrictions - "Local Traffic Only" during 8:30am to 9:30 am and 2:30pm to 3:30pm (2 signs)	✓			
Consider a traffic safety patrol program			✓	
Simplify signs in drop-off and pick-up area (8 signs)	✓			
Bylaw officer enforcement upon changes to parking / traffic regulations	✓			
Evaluate if safety improvements are achieving goals and if adjustments are required	✓	✓	✓	

Table 5.6: Medium and Long-Term Improvements – Ross Road Elementary

Recommended Improvements	Responsibility			
	DNV	NVSD	School	Other
Ross Road: Construct sidewalk between Allan Road and Hoskins Road (360m)	✓			
Ross Road at Bushnell Place: New marked crosswalk in conjunction with sidewalk improvement	✓			
Kilkenny Road at Hoskins Road: Curb extensions on south side of intersection, at existing marked crosswalk	✓			
Kilkenny Road: Construct sidewalk on north side (165m)	✓			
Bushnell Place: Construct sidewalk on east side (80m)	✓			
Bushnell Place at Kilkenny Road: Upgrade crosswalk to raised crosswalk	✓			
Continue in-class safe routes/active transportation learning activities			✓	
Yearly promotion of walk/cycle to school events		✓	✓	
East 27 th Street: New marked crosswalk to trail head	✓			
East 27 th : Extend existing sidewalk on south side of street to connect to trail	✓			
Continue in-class safe routes/active transportation learning activities		✓	✓	
Yearly promotion of walk/cycle to school events		✓	✓	
Wayfinding signs at the entrance of East 27 th trail	✓			
Bushnell Place/Kilkenny Road: Crossing guard at crosswalk to school entrance			✓	
Bushnell Place cul-de-sac: "Local Traffic Only" restrictions 8:30am to 9:30 am, 2:30 pm to 3:30 pm	✓			
Allan Road cul-de-sac: Repaint yellow curb	✓			
Kilkenny Road at Hoskins Road: "No-left turn" signs during peak hours onto Kilkenny Road	✓			
Kilkenny Road: Install "No idling" signs	✓			
Random enforcement checks on an ongoing basis for traffic/parking violations	✓			
Evaluate if safety improvements are achieving goals and if adjustments are required	✓	✓	✓	

5.2 Cost Estimates

Cost estimates for short-term priorities are outlined in Table 5.7, and costs for medium and long-term priorities are outlined in Table 5.8. Cost estimates have been developed only for projects which are primarily the responsibility of the District of North Vancouver and which involve capital expenditures. Cost estimates are based on unit costs for each treatment and include a 20% contingency, but exclude HST. The approximate cost to implement the short-term priorities at each school is approximately \$61,500, as summarized in Table 5.7. The approximately cost for medium- and long-term priorities at each school is approximately \$350,000, as summarized in Table 5.8.

Table 5.7: Cost Estimates for Short-Term Priorities

Measure	Unit Cost	Braemar		Cleveland		Ross Road		Total	
		Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost
Sidewalks	\$300/m	65m	\$19,500					65m	\$19,500
Raised crosswalks	\$7,500			3	\$22,500			3	\$22,500
Curb extensions	\$5,000					1	\$5,000	1	\$5,000
Signs	\$250	2	\$500	5	\$1,250	10	\$2,500	17	\$4,250
Sub-Total			\$20,000		\$23,750		\$7,500		\$51,250
Contingency (20%)			\$4,000		\$4,750		\$1,500		\$10,250
Total (Including Contingency)			\$24,000		\$28,500		\$9,000		\$61,500



Table 5.8: Cost Estimates for Long-Term Priorities

Measure	Unit Cost	Braemar		Cleveland		Ross Road		Total	
		Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost
Sidewalks	\$300/m			60m	\$18,000	605m	\$181,500	665	\$199,500
Raised crosswalks	\$7,500	1	\$7,500			1	\$7,500	2	\$15,000
Painted crosswalks	\$500			2	\$1,000	2	\$1,000	4	\$2,000
Curb extensions	\$5,000	6	\$30,000	6	\$30,000	2	\$10,000	14	\$70,000
Signs	\$250	8	\$2,000	3	\$750	8	\$2,000	19	\$4,750
Sub-Total			\$39,500		\$49,750		\$202,000		\$291,250
Contingency (20%)			\$7,900		\$9,950		\$40,400		\$58,250
Total (Including Contingency)			\$47,400		\$59,700		\$242,400		\$349,500



Appendix A

Summary of Survey Results



MEMORANDUM

date: July 12, 2011
 to: Tegan Smith, Jerry Guspie
 cc: Erica Geddes
 from: Brian Patterson
 file: 1333.0017.01
 subject: **District of North Vancouver (DNV) / North Vancouver School District#44
 2011 School Safety Review
 Summary of On-Line Survey Results**

The District of North Vancouver (DNV) and the North Vancouver School District #44 (NVSD) are conducting a school safety review and developing a Safe Routes to School Plan for Cleveland, Braemar and Ross Road Elementary Schools. The purpose of this study is to identify current transportation issues and opportunities around each school; to develop recommendations to improve the safety and access to schools; and to promote healthy and active modes of transportation to school such as walking and cycling.

In order to understand current travel patterns and identify transportation issues and opportunities, the DNV and NVSD developed an on-line survey for parents to complete. The survey was posted on-line at www.surveymonkey.com/s/SchoolSafetyReview. An overview of the study and invitation to complete the survey was e-mailed by the Principal of each school to parents in early June, 2011. The survey was available on-line between June 10 and June 24, 2011. This memorandum summarizes the results of the on-line survey.

1.0 SURVEY RESPONSE SUMMARY

1.1 Response Rate

As shown in **Table 1**, 160 responses to the survey were received, including 61 responses from Braemar Elementary parents, 63 responses from Cleveland Elementary parents, and 36 surveys from Ross Road Elementary parents. The survey included a question asking respondents to indicate how many students attended the school. Taking the number of students per household into account, the surveys received represented over 250 students at the three schools, or approximately 17% of the student enrolment at the schools.

Table 1: Survey Response Summary

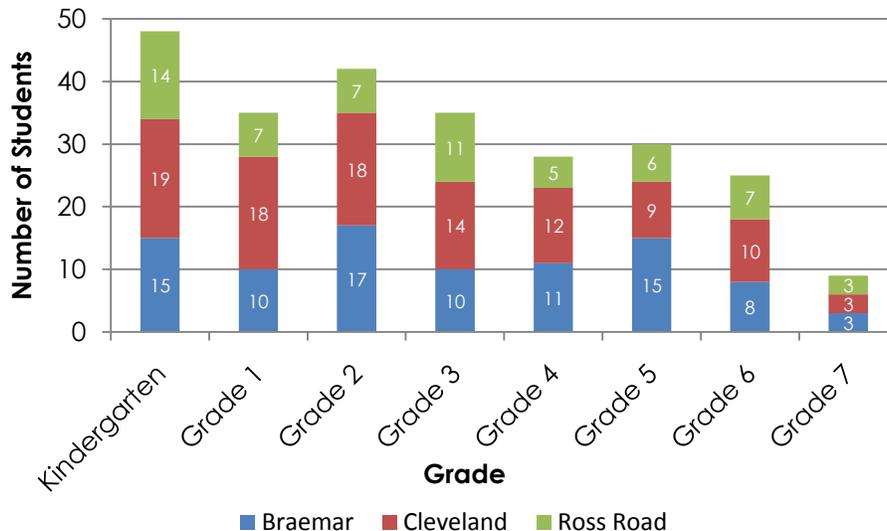
	Number of Surveys Received	Number of Students Represented	Number of Students Enrolled (2010/11)	Survey Participation Rate
Braemar Elementary	61	89	503	17.7%
Cleveland Elementary	63	103	486	21.2%
Ross Road Elementary	36	60	529	11.3%
Total	160	252	1,518	16.6%



1.2 Grade Level

As shown in **Figure 1**, the majority of the students represented in the survey were primary students, with nearly two thirds (64%) of responses representing students between Kindergarten and Grade 3. The lowest response was among students in Grade 7, which is not surprising given that those students will no longer attend their respective elementary school in the coming school year.

Figure 1: Grade Level of Students Represented in Survey, by School



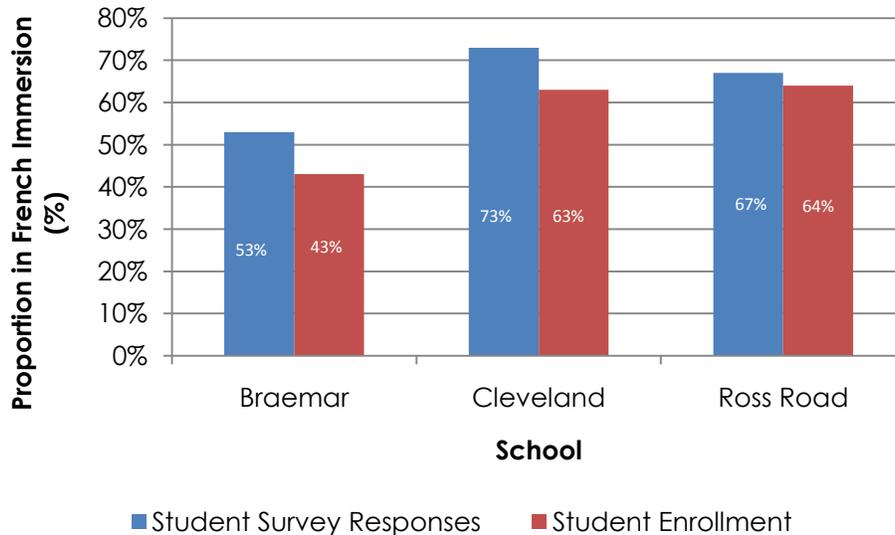
1.3 French Immersion

The NVSD has established catchment areas for all English schools in North Vancouver. However, Braemar, Cleveland and Ross Road Elementary schools also offer French Immersion programs, with a significant amount of the student population enrolled in those programs. As shown in **Figure 2**, 43% of Braemar Elementary students, 63% of Cleveland Elementary Students, and 64% of Ross Road Elementary students are enrolled in French Immersion programs, respectively. This has significant implications for travel patterns to and from these schools, as the NVSD does not have specific catchment areas for French Immersion, and students tend to travel further distances for French immersion and therefore are more likely to drive. As a result, the survey asked respondents to indicate whether students are enrolled in French Immersion, and the survey summary examines the differences in travel patterns between students enrolled in French Immersion and the English programs.

As shown in **Figure 2**, the survey responses reflected a high proportion of French immersion students, as approximately 65% of students represented in the survey are in French Immersion. It should be noted that French immersion students were slightly overrepresented in the survey results compared to the enrolment levels.



Figure 2: Proportion of French Immersion Students

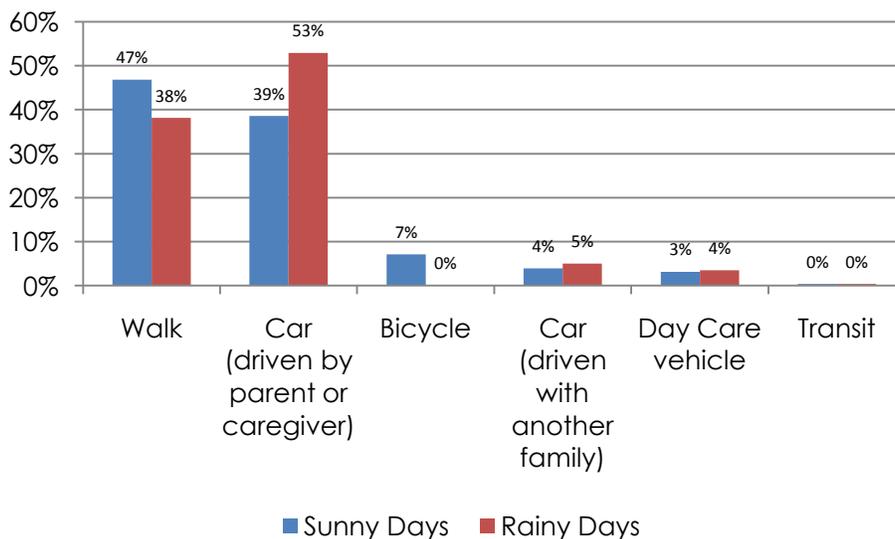


2.0 TRAVEL PATTERNS

2.1 Mode Share

The survey asked respondents to indicate how their children typically travel to and from school. In recognition of the fact that travel patterns can vary considerably based on weather, the survey asked respondents to indicate their typical mode of transportation on both dry or sunny days, and on rainy days. As shown in **Figure 3**, on dry or sunny days walking is the primary form of transportation, accounting for 47% of all trips to school, followed by car travel with a parent or caregiver (39%). On rainy days, car travel with a parent or caregiver was the most common form of transportation (53%), although walking still accounts for 38% of all trips.

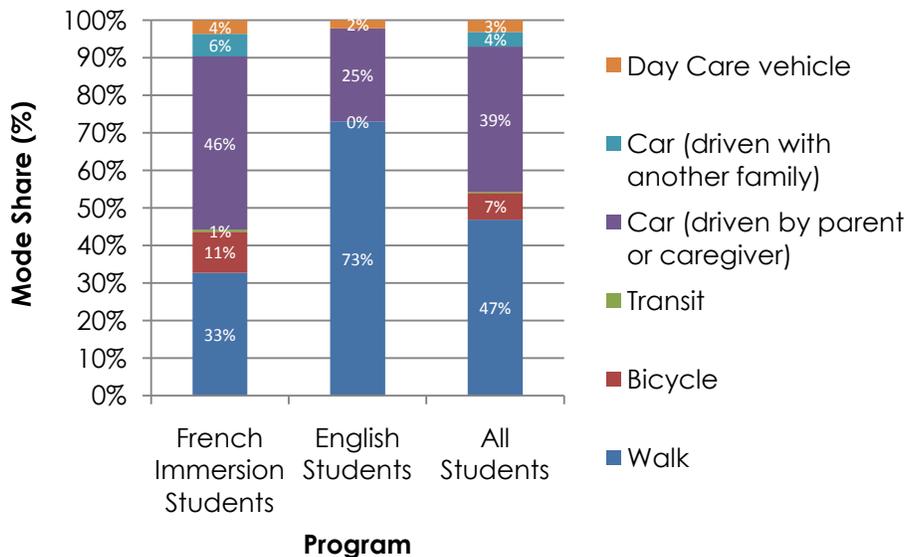
Figure 3: Mode Share To School on Sunny and Rainy Days (All Schools)





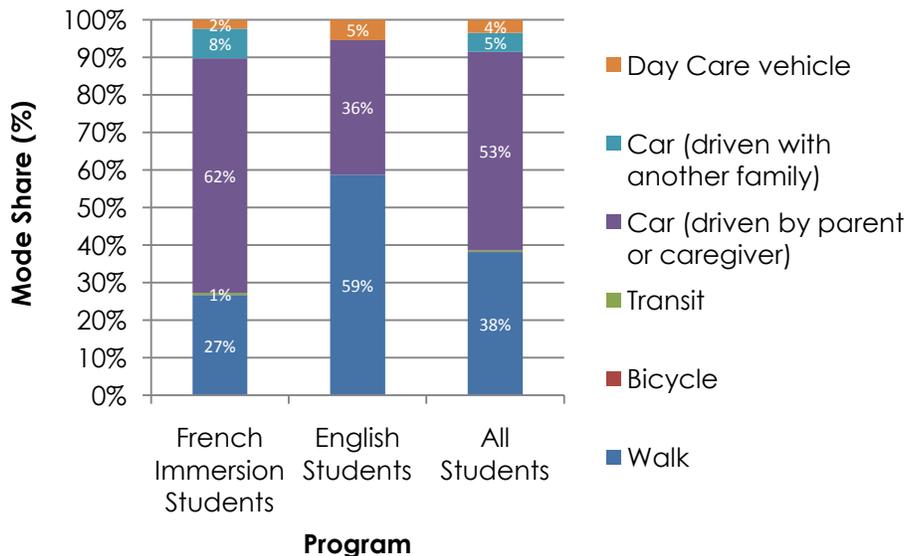
In recognition of the significant proportion of students enrolled in French Immersion, mode shares were also calculated for French Immersion students as compared to English students. As shown in **Figure 4**, on sunny days, although nearly half of all students (47%) walked to school, nearly three quarters (73%) of English program students walked to school, compared to one third (33%) of French Immersion students.

Figure 4: Mode Share to School for English and French Immersion Students on Dry or Sunny Days (All Schools)



As shown in **Figure 5**, on rainy days, more than half of all English students (59%) walked to school, while over a quarter of all French Immersion students (27%) walked to school.

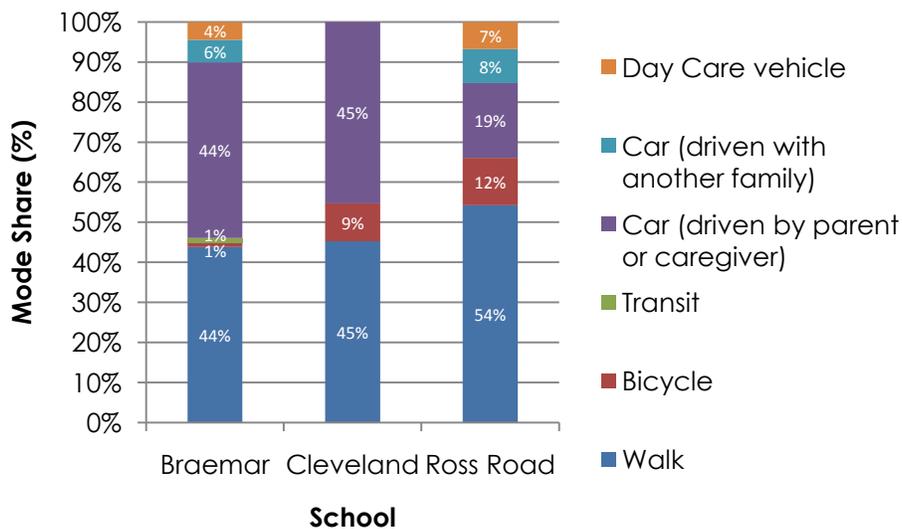
Figure 5: Mode Share to School for English and French Immersion Students on Rainy Days (All Schools)





There are also significant variations in travel patterns among each of the three schools. As shown in **Figure 6**, on sunny days walking accounted for 44% and 45% of trips to school at Braemar and Cleveland Elementary schools, respectively; and accounted for 54% of trips to school at Ross Road Elementary. A significant number of students were also driven by parent or caregiver at Braemar (44%) and Cleveland (45%), but accounted for significantly less trips at Ross Road Elementary (19%). While bicycle trips only accounted for 1% of trips to Braemar Elementary, they accounted for 9% and 12% of trips to Cleveland and Ross Elementary schools, respectively.

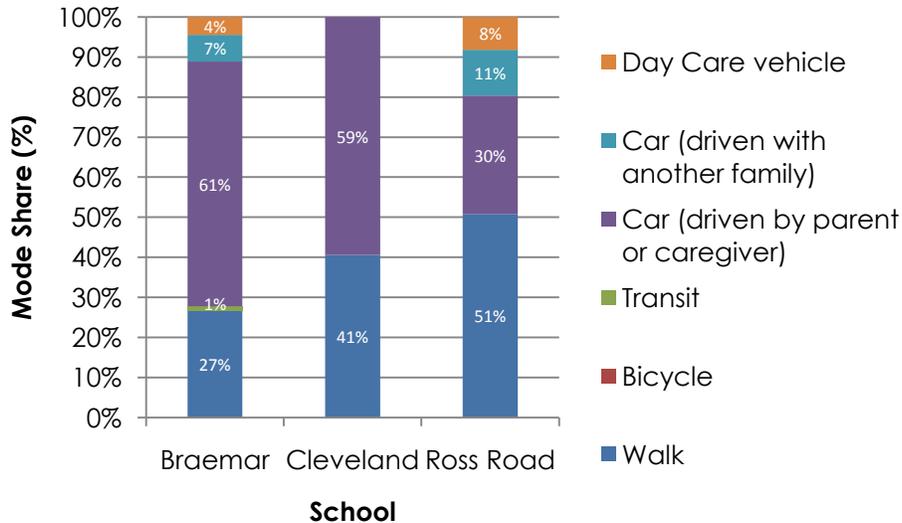
Figure 6: Mode Share to School on Dry or Sunny Days, by School



On rainy days, the number of walking trips dropped most significantly at Braemar Elementary, from 44% of trips on sunny days to 27% of trips on rainy days. There was less change at Cleveland Elementary (45% of trips on sunny days compared to 41% of trips on rainy days) and Ross Road Elementary (54% of trips on sunny days compared to 51% of trips on rainy days). Car trips with a parent or caregiver were the most common form of transportation on rainy days at both Braemar and Cleveland, with 61% and 59% of trips respectively, but accounted for only 30% of trips at Ross Road Elementary. Bicycles were not used at all on rainy days.



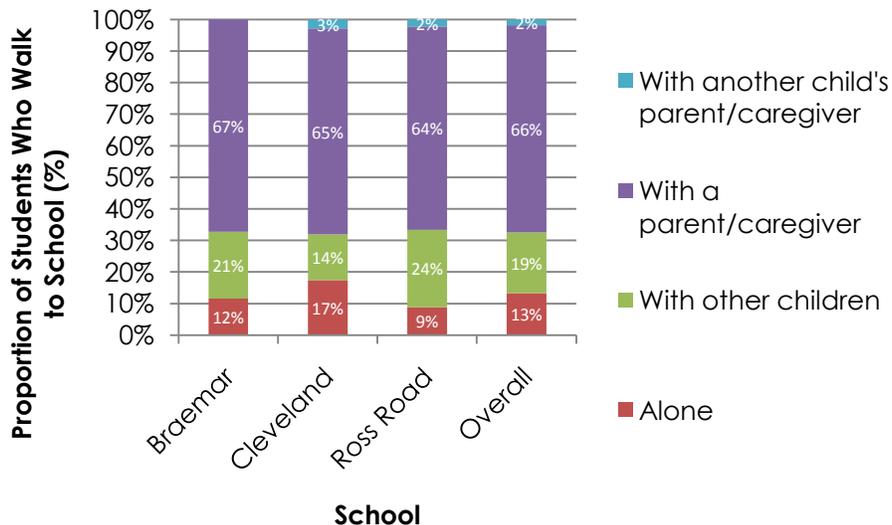
Figure 7: Mode Share to School on Rainy Days, by School



2.2 Walking Companions

Respondents were asked to indicate who their children walked to school with, if they typically walked to school. As shown in **Figure 8**, over two-thirds of students who walk to school do so with a parent or caregiver (68%), while 19% of students walk with other children, and only 13% walk alone.

Figure 8: Who Students Walk to School With

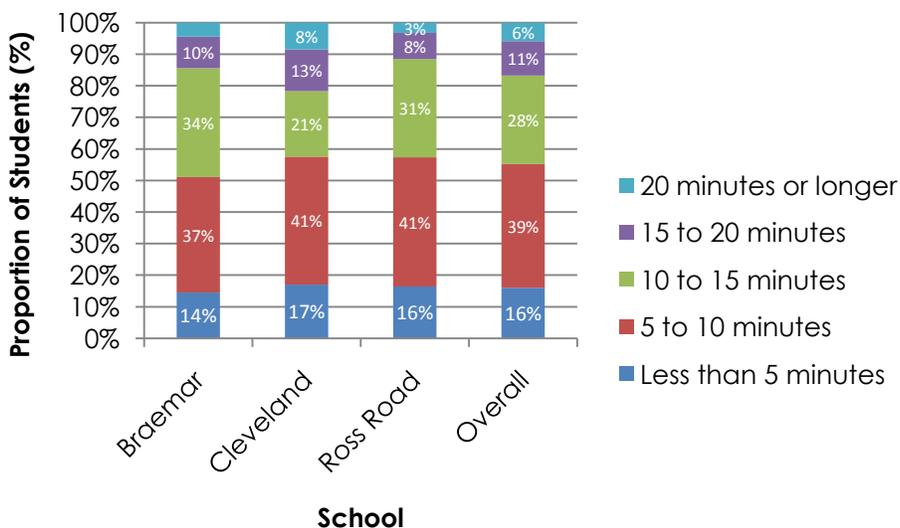




2.3 Travel Time

Respondents were asked to indicate how long their trip to and from school typically takes. As shown in **Figure 9**, over half of all trips (55%) are less than 10 minutes long, with a further 28% between 10 and 15 minutes long. Only 17% of trips are 15 minutes or longer.

Figure 9: Travel Time to School



2.4 Permission to Walk or Bicycle to School

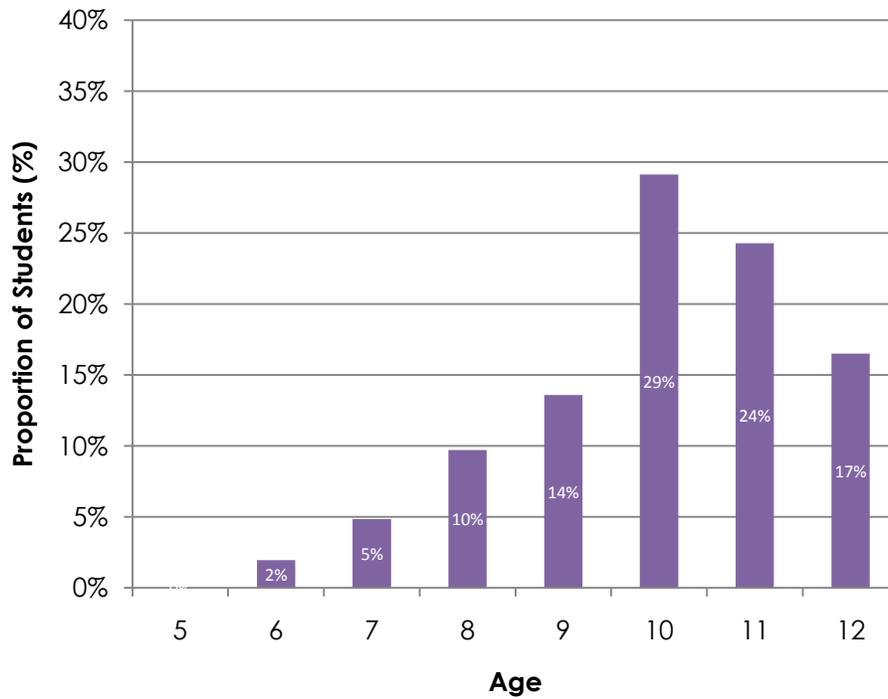
Overall, approximately 55% of students have asked their parents for permission to walk or bicycle to school in the past year. This ranged from 39% at Braemar Elementary to 63% at Cleveland Elementary and 69% at Ross Road Elementary.

2.5 Age to Walk Alone

Respondents were asked to indicate at what age they would allow their children to or from school walk alone. Over a third (35%) of respondents indicated that they didn't know. As shown in **Figure 10**, among those respondents who did provide a response, over two thirds (70%) said they would not allow their children to walk alone until they were at least 10 years old.



Figure 10: Age Parents Will Allow Children to Walk to School Alone

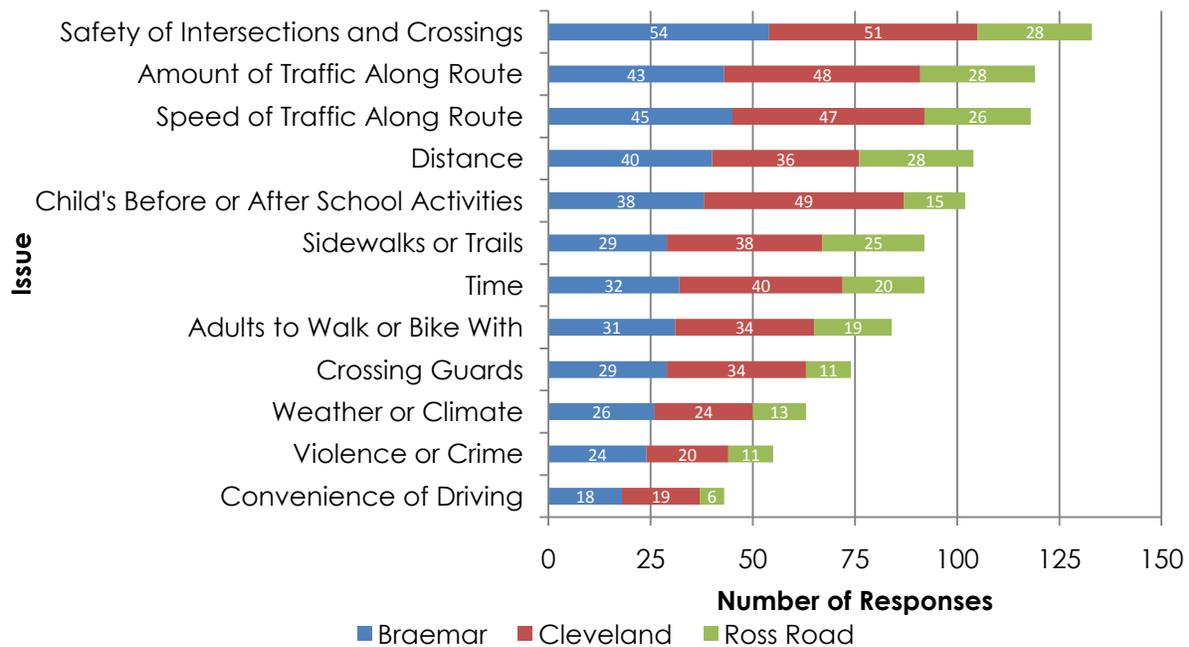




3.0 TRANSPORTATION ISSUES

Respondents were asked to indicate which issues affect their decision to allow their children to walk or bicycle to school and to check all the issues that applied. As shown in **Figure 11**, the three top rated issues were factors that can be addressed through this study, including safety of intersections and crossings, traffic volumes and traffic speeds. The least reported issues were convenience of driving, violence or crime, and weather or climate.

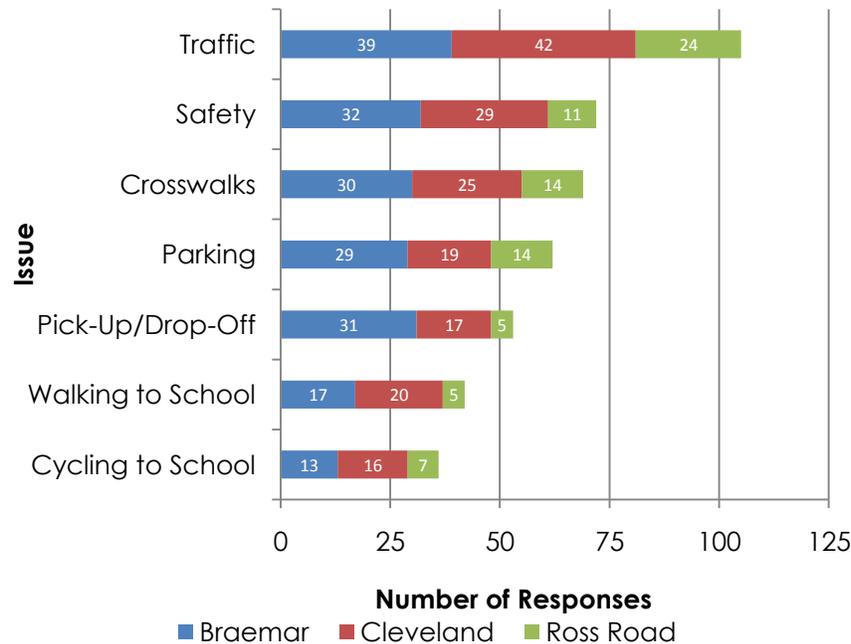
Figure 11: Transportation Issues



Respondents were asked to identify which issues present safety concerns getting their children to and from school. As shown in **Figure 12**, traffic was overwhelmingly identified as the most significant safety concern, followed by safety and crosswalks.



Figure 12: Safety Concerns



Respondents were also asked to describe their safety concerns. The following sections summarize the comments received from parents at each school and, for the most part, are shown verbatim.

3.1 Braemar Elementary

a. Speeding

- People driving way too fast on Mahon Avenue.
- Parents aren't paying attention, they speed, they drop their kids in the middle of the road so that dashing kids into and out of roads is a constant hazard.
- Parents race up St. James Road to drop off kids.
- Cars have trouble stopping.
- Many people speed on Evergreen Place, but primarily the morning drop-off is coordinated with my departure for work.
- Cars driving at excessive speed on Delbrook Avenue at Saville Crescent.
- People still drive too fast near the school.

b. Sidewalks / Crosswalks

- No sidewalks.
- St. James Road does not have sidewalks.
- There is no sidewalk on east side of school.
- Crosswalk or 4 way stop needed at Osborne Road and Calder Avenue, and Evergreen Place and Calder Avenue.
- Delbrook Avenue crosswalk is very dangerous.
- Crossing at Saville Crescent and Delbrook Avenue. Corner is blind and traffic goes quickly. A light would help, with warning flashers before the corner.
- Delbrook Avenue at Saville Crescent: a pedestrian controlled intersection is needed there; the cars do not see/pay attention to the crosswalk.



- Delbrook Avenue and Saville Crescent crosswalk is not visible to traffic coming down Delbrook Avenue until the last second.
- I am concerned about the speed & volume of traffic on Delbrook Avenue. I feel there should be a crosswalk with a stop light, or flashing light at Delbrook Avenue and Saville Crescent / Silverdale Place.
- Would like to see crossing guard at Queens Road and Mahon Avenue. If they had this they almost always would walk to school. Sadly they don't and I have seen too many close calls.
- There are no sidewalks on Calder Avenue cul-de-sac, or on Evergreen Place where we are now parking.
- No sidewalk or crosswalk.
- Calder Avenue has no sidewalks and is extremely busy with cars.
- Queens Road crosswalk is very dangerous, as are drop off/pick up areas.
- The overwhelming issue is the safety of crossing Lonsdale Avenue without a crosswalk. We have written to the District many times to install a crosswalk, but they will not.

c. General Safety

- Traffic & safety.
- Streets are narrow, parents ignore traffic rules.
- Safety is the primary concern.
- Looking for a safe environment.
- Traffic speed endangers pedestrians.

d. Cul-de-sacs

- Calder Avenue cul-de-sac traffic.
- Block off all of Calder Avenue from Evergreen Place to the stairs.
- Parents continue to drive in the cul-de-sac(s) where children are walking to get to school.
- No parking permit on west side of school on cul-de-sac.
- Recently Mahon Avenue and Everglade Place Cul-de-sac were closed off and it made traffic worse than before.
- The traffic is terrible at the Calder Avenue cul-de-sac now.
- People often do not obey stop signs. The same parents use the cul-de-sac, even with new regulations. The new trick is to park in residents' driveways to wait for children.

e. Bus

- Bus service takes too long.

f. Parking

- Not enough parking spots.
- No area near a school entrance to drop off when large projects are being transported to school, for child's school project.
- Not enough parking so I can drop off/pick up my children as we live too far away to walk/bike to school - 5K.
- Parking can be difficult.
- The biggest problem is people parking their cars where they shouldn't and blocking traffic at drop-off and/or pick-up time.

g. Traffic

- Busy area where we drop off and pick up.
- It's crazy near Balmoral School, cars pulling out without signaling and parking/stopping right near the intersection.



- Traffic and older children from surrounding schools.
- Too many cars try to get too close to the school for drop off.

h. Other

- Crossing Lonsdale Avenue is a nightmare, crossing Windsor Road at Andre Piolat School can be very tricky too.
- Cars stopping in the middle of street / more bike safety training would be good).

3.2 Cleveland Elementary

a. Sidewalks/Crosswalks

- Very dangerous crosswalk at Mount Crown Road and Capilano Road.
- Crosswalk on Capilano Road and Eldon Road – needs sensor so that light will change when cars are trying to turn left onto Capilano Road.
- I just worry about my 9 year old walking in the middle of the street.
- Crosswalks: Montroyal Boulevard/Handsworth Road/Edgemont Boulevard -kids must wait or walk behind. Capilano Road bike lane! may also slow cars, buffer walkers above Eldon Road.
- Crossing Capilano Road is dangerous.
- At least 3 incidents of cars running red lights/year. Cars drive into the cross walk Capilano Road and Eldon Road while the kids are crossing which is intimidating for young kids.
- My son must cross two busy intersections: Ridgewood Avenue at Paisley Road/Sunset Boulevard and Sunset Boulevard at Edgemont Boulevard. Both intersections are marked with crosswalks, but cars regularly drive through when we are waiting, especially at Ridgewood Avenue and Paisley Road. The speed of traffic on Ridgewood Avenue is also a concern.
- There are not always sidewalks on every street; we are concerned with their safety with strangers when walking/cycling without an adult.
- Crosswalks between Sunset Boulevard and Edgemont Boulevard is very dangerous.
- Heavy traffic on Eldon Road for when crossing from the stairs to the school side of the street.

b. Parking

- Hard to find parking, lots of traffic getting onto both Capilano Road and onto Sunset Boulevard, often very few pick up and drop off slots and parents get out of cars at these stops.
- If we allow cars to park on Eldon Road, we should only allow them in the school side of the road, this way children will not run out behind parked cars across the road.
- Parking near school is an issue.

c. Traffic/Safety

- Not comfortable with kids crossing street (Virginia Crescent and Sunset Boulevard) on their own yet, Handsworth Avenue traffic is pretty busy.
- Busy streets.
- Traffic and lack of a proper light at our intersection is a constant worry for us.
- I believe I have clarified that the Montroyal and Capilano Road area requires better traffic safety.
- Congestion in front and at nearby intersections.
- Too many cars backing up in driveways and turning around on the road.
- Traffic on Eldon Road presents a safety hazard for other children arriving at the school on that route.
- Major roads/intersections and traffic.



d. Speed

- The condition of Capilano Road where we walk the kids to school is extremely hazardous, particularly the section north of Eldon Road on the West side. There is no sidewalk, cars regularly speed and accelerate to pass left turning traffic at the Eldon Road intersection, and cars regularly crash into concrete barriers placed along this section of road because of excessive speed.
- Many cars still speed along Ruby Avenue and Eldon Road and many parked cars are not in proper spots and block sight lines for corner street crossings.
- Drivers going too fast once they are not directly in front of the school.
- Speed: Capilano Road/Montroyal Boulevard, above Eldon Road (cut corner, bad if kids trip/fall).
- People focusing on trying to get good parking forget to slow down and watch for kids.
- Vehicle traffic travels TOO FAST along Capilano Road and cars frequently do not stop at crosswalks for pedestrians. It is appalling.
- People drive way to fast on Sunset Boulevard and we have to cross it to get on to Ruby Avenue.

e. Driving Behaviours

- Too many parents irresponsible/inconsiderate especially for drop off.
- Parents are in a HURRY near the school, can't find parking, and do drastic things to get a spot (e.g. U-turns, 3 point turns into driveways/parking lots, park in teacher's lot, etc.).
- I would not let my kids walk alone because I don't trust the drivers who are late, inconsiderate or not paying attention.
- Parents who drive rushing in their vehicles to drop their own kids off when they are late. They are not taking into consideration that lots of kids are walking/cycling on the same streets.
- Few Parents do not obey traffic signs and often park where they are prohibited to park.
- Too many parents in cars rushing in late and too fast to drop their own children.
- Drivers in a hurry, not paying adequate attention.
- Parents ignore crosswalks, speed, park illegally, unload kids in the middle of the road, make U turns, pull into private driveways and block the sidewalks, run over traffic safety cones, etc.

f. Other

- The school should set up a drive thru/drop off mechanism (no parking).
- I'm not quite comfortable with them walking so far by themselves. Maybe next year.
- Due to 20 minutes walk to school the safety is the most important part.
- I have a 2nd child entering into Kindergarten and is too young to do "drop off" so we have no options but to walk.
- One parent always accompanies primary schoolers to class. Driving is our only option given distance.
- Cycling is a non-starter given lack of bike lanes.
- The sharp corner on Capilano Road above Eldon Road has no barricade between the road and the sidewalk, and cars drive very close to the sidewalk on that corner. There should be a barricade there.
- People don't respect the drive thru / drop of zones.

3.3 Ross Road Elementary

a. Sidewalks/Crosswalks

- Need painted crosswalks on all collector streets within 1 km of school.
- Very congested and busy/crossing Ross Road is hazardous and could use a crosswalk or stop sign.



- A crossing guard at Hoskins Road and Kilkenny Road would help younger students cross the road by themselves.
- We have no sidewalk.
- Not all the roads have sidewalks.
- Crossing guard at Ross Road and Bushnell Place would be great.

b. Trails

- Walking through the trail (creek).
- Distance and shortcuts through trails present a concern.
- The ravine can be a bit worrisome for the kids to get through.

c. Parking

- People parking where it is not legal and that prevents other drivers from seeing people in a crosswalk.
- Parked cars in a drop off zone (before it was monitored), double parked cars are an accident waiting to happen.
- Parked cars pulling out.
- When people are so focused on parking and squeezing through traffic.

d. Speed

- No 30 km/h speed limit posted on Ross Road (school zone), so people drive 50 km/h or more during school hours.
- Traffic at 50km/h and higher is too fast.
- Rushed parent drivers dropping their children off are very dangerous, even though you'd think this group would drive safely.
- Mostly concerned with Lynn Valley Road and Ross Road intersections and speed of vehicles.
- Cars drive very fast along Ross Road and many don't stop at the crosswalk.
- Cars travelling too fast and not stopping at crosswalks, drivers talking on cell phones.

e. Distance/Topography

- Distance from school.
- Unfortunately, I live at the bottom of a sign. hill in which my 6 year old son is not willing to walk.
- Distance is too great, just over 4 km for their age.

f. Traffic

- Too much traffic for them to ride along Kilkenny Road, I'd rather they walk.
- Extra traffic from parents parking on Allen to drop off even though it is not allowed.
- Huge amount of traffic on Ross Road.

g. Other

- I don't like to drive because there are too many children on the road. It is better if everyone walks or rides.

4.0 ADDITIONAL COMMENTS

Respondents were invited to provide any additional comments. Additional comments are shown below and, for the most part, are shown verbatim. However, the comments have been grouped by theme.



4.1 Braemar Elementary

a. Bus

- Bus service please.
- I have attempted to get a group interested in having a yellow bus service instituted to bring down the amount of traffic but the cost is too prohibitive.
- For students out of catchment and attending for French Immersion we need to have affordable options for a bus service.

b. Sidewalk / Crosswalks

- There needs to be a sidewalk along Calder Avenue. Traffic calmed along Norwood Avenue and St. James Road.
- Should put in a light at intersection Delbrook Avenue and Saville Crescent with flashers around corner to warn motorists as they come around the bend.
- We need to add a crossing guard at Delbrook Avenue and Silverdale Place.

c. Cul-de-sacs

- All cul-de-sacs should be closed to cars at drop off and pick up times.
- The whole part of Calder Avenue that leads to the turning circle at Braemar Elementary should be a no stopping zone. Parents are doing 3 point turns in the tiny turning circle and kids are having to skip out of the way of reversing cars.
- Not sure how effective the closing of the circle is. The congestion is just now on Evergreen Place where cars drive faster and there are too many people who seem to not be sure where to turn around, etc.
- The recent no parking signs in the Calder Avenue cul-de-sac seem to have made it more safe, but there are still concerns with no sidewalks.
- People now drop kids off at end of Calder Avenue and are backing up which endangers children more. Calder Avenue to Evergreen Place should be resident parking only.
- Even though new rules have been applied, people still drive in to the cul-de-sac. It's quite frustrating to see this.

d. Traffic

- There is already so much traffic, I worry what will happen when Balmoral School closes. To make that the location of the Community Learning Program would be a huge mistake!!!
- Increased vehicle traffic/decreased safety is partly due to District decisions (school closures, French Immersion).
- Yes, Traffic bylaw enforcement must be present.

e. Other

- We prefer walking to school, although sometimes drive due to work or other commitments.
- I am sure selling the Braemar Elementary lands and more residents will affect the traffic with more concern for children's safety.
- Make some short stay/ drop off areas available.
- Quit trying to solve a problem by pretending that people will magically decide to walk or bike to school.
- Way too difficult to access school. Especially as stairs make stroller use very difficult!
- We would LOVE to have alternative to driving our kids to school!
- The kids at Balmoral School are inconsiderate when we walk home - we have to walk off the sidewalk and onto the road to get past them.



4.2 Cleveland Elementary

a. Sidewalks/Crosswalks

- There are ten children under the age of 12 that live in houses along the West side of Capilano Road north of Eldon Road, a section that is without a sidewalk and is extremely hazardous. I believe it is inevitable that there will be a serious accident to a child if the safety of Capilano Road and the intersection at Eldon Road is not adequately addressed.
- Each of the sidewalks that cross Eldon Road in front of Cleveland Elementary should be raised up so as to form a large speed bump - this is effectively used in Whistler Village to calm traffic.
- Safety attendant at crosswalk would be big improvement.
- A crossing guard at Capilano Road and Eldon Road would be a fantastic addition to the community.
- I think that the crossing guards in front of the school do a great job.

b. Valet

- Many families come from out of catchment to our school and have to drive as a result. I think our school has done a good job of setting up and enforcing drop-off areas in the morning. This helps keep traffic moving and avoid congestion.

c. Driving Behaviours

- Drivers park or turn around in driveways, drive on sidewalks, double park, stop in the middle of the road to drop-off or pick up, u-turns in front of the school, etc.
- Inattentive or inconsiderate parent drivers are the problem. How do you enforce rules on people who won't follow clearly marked traffic signs? DNV Bylaw Officer is a huge help but can't be everywhere.
- Crazy people and their u-turns.

d. Parking

- Why are we allowing parents to park on both sides of Eldon Road for pickup after school and then sit in the cars until the children arrive. I thought there is supposed to be no parking during school hours.
- We don't have any safety concerns. The temporary parking enforcement at Cleveland Elementary is quite strict. However, we have no illusions about how safety would degrade if the enforcement stopped!
- The Kindergarten valet by Grade 7's was a GREAT idea this year. The day the traffic survey was done at Cleveland Elementary was not typical since there was a parent appreciation tea at 8am that changed my get-to-school pattern that day as well as many others (June 9).
- Designated drop-off areas would be good - no stopping or getting out of car-these are currently abused constantly by drivers. Having kids from out of catchment (french immersion,etc) feeds this problem.
- P-up/D-off : with a K child and baby, wish I'd 'parked' 1 min, deliver K to door, let baby sleep in sight. But NO! yet across road, others park and wait. Not fair.

e. Traffic

- Main causes of traffic are getting on to Capilano Road from Eldon Road and onto Edgemont Boulevard from Sunset Boulevard.

f. Traffic Calming

- I think some speed bumps along Ruby Avenue and Eldon Road are warranted.



- We are never quite sure whether we should ride on road or sidewalk when we get closer to the school (more drop-off/pick up traffic & more pedestrian traffic).
- Speed humps and permanent cones on side of road would help greatly. Thank you for looking at this important issue!!

g. Speed

- Several times cars have raced through without seeing kids.

h. Distance to Home/work

- We would encourage walking or biking if possible but we live too far away. Not possible to walk/bike to school regardless of age.
- Driving is linked to after school activities, walking just won't work on those days.
- If I didn't have to work downtown I would love to cycle in with the kids or walk, but my youngest is too young and I can't leave him with my eldest!

i. Other

- We should have a "walking school bus".
- I feel that this issue is extremely important. Thank you.
- What about a 'bike pool'. Kids that live near each other could ride together accompanied by one adult on a rotation basis. The social aspect is a great motivator for young kids.
- I feel quite strongly that my children should be walking or cycling as often as possible, as I believe it is good for their health (short and long term, physical and mental), but I am constantly concerned for their safety, and have sent numerous letters to DNV to request safety improvements for all who travel along the upper Capilano corridor. Some of my concerns have been addressed, but others still remain, as follows: Speed - especially at Montroyal Boulevard (where numerous vehicles have lost control just above the corner, and mounted the sidewalk) and at the curve just above Eldon Road (where kids racing downhill risk tripping/falling into traffic, and cars routinely cut the corner very tight). Stop signs at Montroyal Boulevard and Capilano Road would force traffic to slow down here, and make crossing much easier. Extending the solid barrier (on the hill above Eldon Road) down along the curve would reduce the risk of cars and children colliding. Also, I think there should be crosswalks at Montroyal Boulevard, Handsworth Avenue, and Edgewood Road, as cars routinely ignore pedestrians and pull right up (to better see opportunities for turning) but in doing so, block children from crossing safely, forcing them to either wait (often several minutes) for the intersection to clear, or to cross behind/between vehicles (dangerous - reduces visibility of kids for cars turning from Capilano Road), or to cross in front of cars, into the traffic flow on Capilano Road. A bike lane along upper Capilano Road would provide a safer route for cyclists (including numerous commuters) plus the narrowed car lane may encourage drivers to slow down, and could also provide a small buffer for kids at that dangerous curve just above Eldon Road. I look forward to seeing more children walking & cycling to school in the years to come, not only along the route my children use, but all across the North Shore. I believe the benefits of children walking/cycling to school are far-reaching, and I am grateful to you for having the foresight to do something about this.
- I have worked to promote walking to school at Cleveland Elementary. The safety of walking routes (sidewalks, crosswalks, etc.) to and from the school is a key deterrent/ concern for parents wanting to increase the frequency of walks to school. I also act as a supervisor for safety patrol. I am astonished at the poor driving/ parking habits of parents and neighbours driving past the school or dropping children off. I am concerned both for the safety of children arriving at school as well as the students serving as safety patrol guards.



4.3 Ross Road Elementary

a. Trails

- New valet/drop-off service at Ross Road this year will help greatly but more people should walk - walking school buses would be helpful. Many people walk/could walk from the Viewlynn area taking the trail through Hastings Creek/over the bridge behind the school. This would also make a great alternate drop-off point (27th street at trail head) for people who drive but most are unaware of it!!

b. Traffic/Safety

- Car congestion around the immediate school area is my biggest safety concern.
- Ross rd is a hwy from Mountain Highway to Dempsey Road. My kids are not safe crossing in front of my house.

c. Speed

- It is very dangerous crossing Hoskins Road at Kilkenny Road due to speeding vehicles and a large/tall hedge that blocks sight of pedestrians and vehicles.
- Need to reduce speed on Ross Road. Lots of big trucks and construction vans etc. use this route and speed DAILY! Very dangerous.

d. Parking

- Cars park along Allan Road and Ross Road and doors get thrown open without any regard for people already walking on the sidewalk.

e. Crosswalk/Sidewalk

- Ross Road and Allen Road crosswalk is very difficult to see cars and cars frequently do not stop.
- There is no side walk on Ross Road.

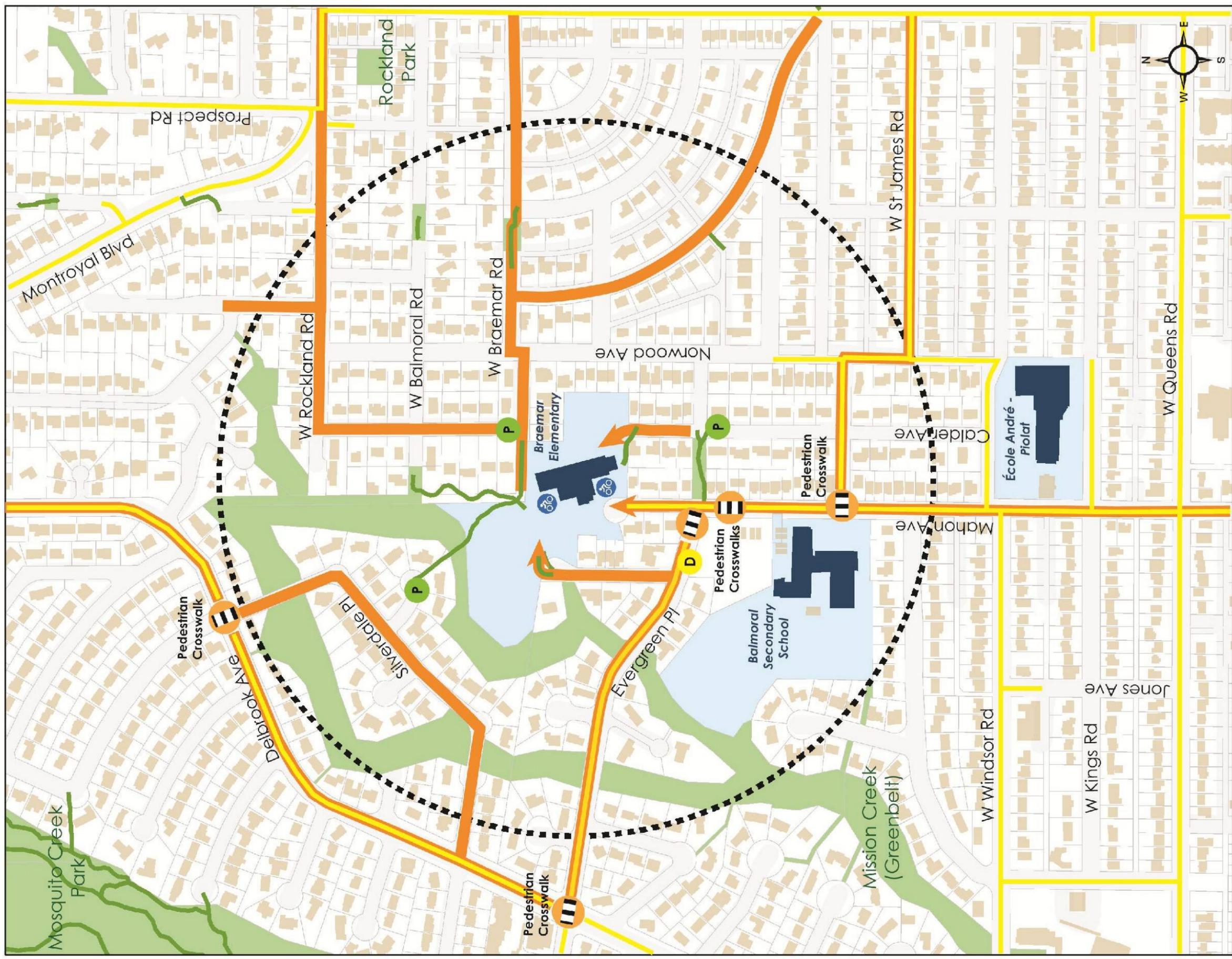
f. Traffic Calming

- Should love to see more speed bumps or roundabouts on some of these semi-busy streets - Ross Road, Frederick Road etc...
- Trees / shrubs from yards are encroaching onto sidewalks and blocking a drivers view. Is there no bylaw that prevents this? If so, why is it not enforced? (ex. corner of Ross Road & Hoskins Road).
- We chose to go to our local school in large part so kids could walk to school and have local neighborhood friends. We love that we are close enough to the school to walk.
- Ross Road is a cul-de-sac so people have to turn around in someone else's driveway all the time. Backing up sometimes cause danger to children.



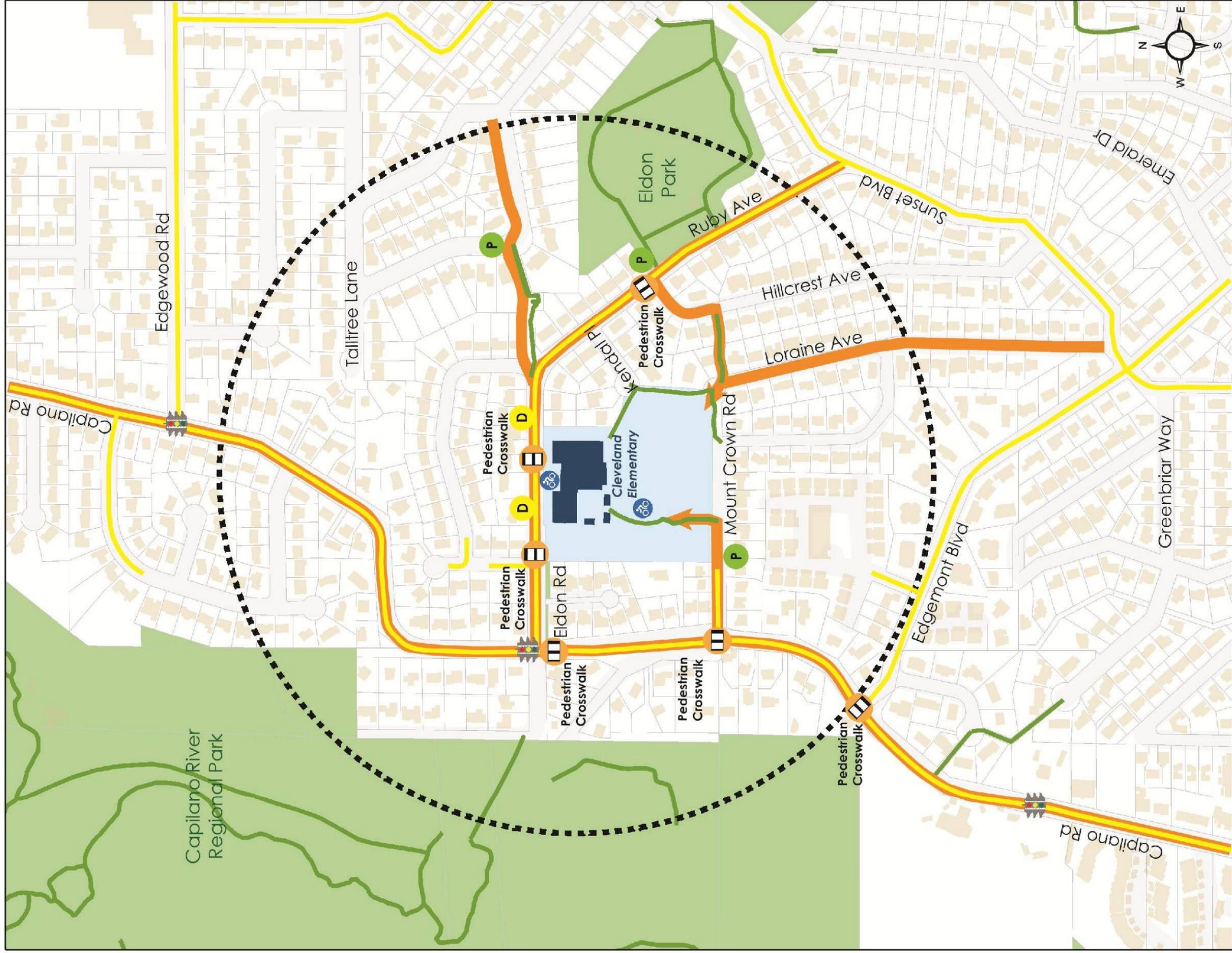
Appendix B

Safe Routes to School Maps



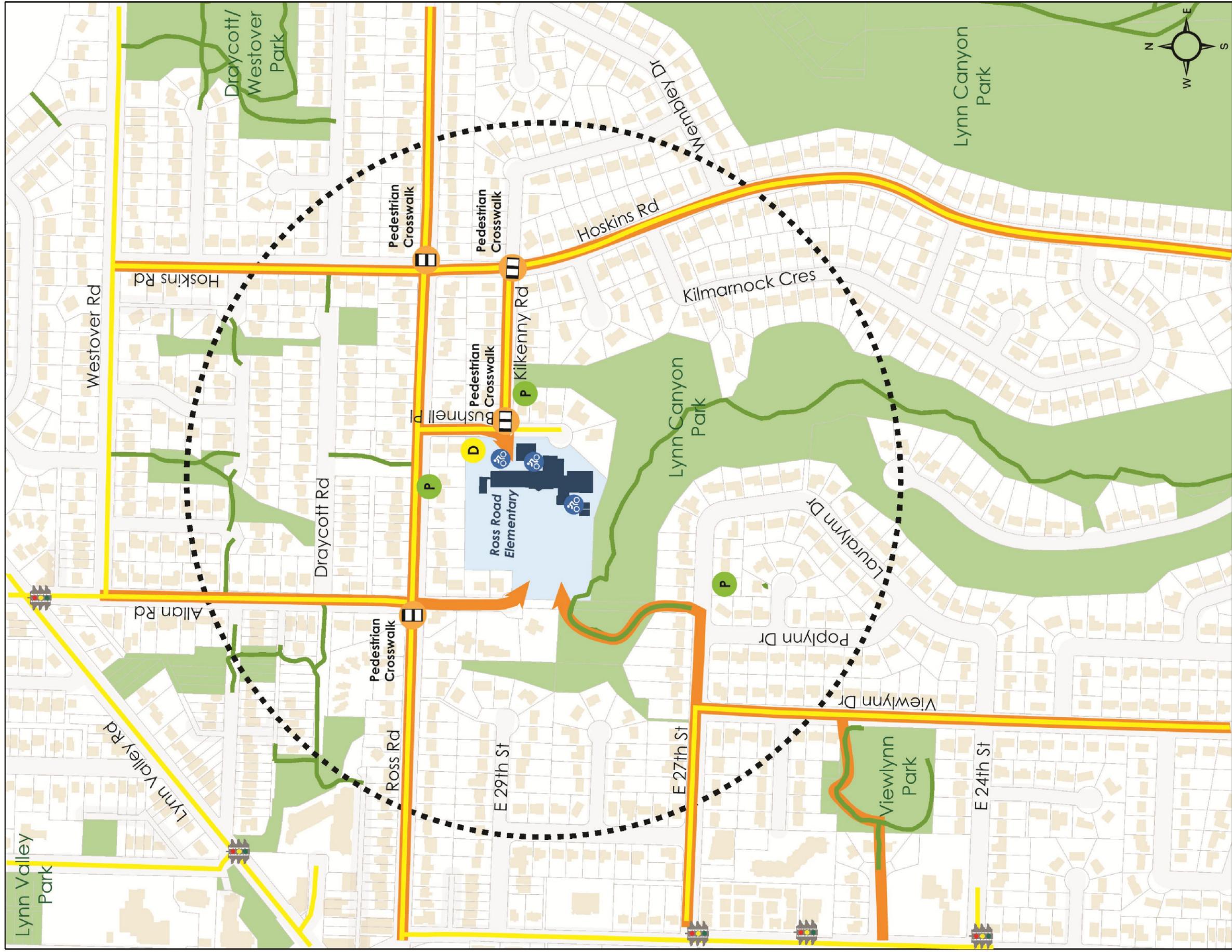
Legend

-  School
-  Park
-  Pedestrian Crossing
-  Traffic Signal
-  Park and Walk
-  Drop-Off Area
-  Bicycle Parking
-  Sidewalk
-  Best Walking Routes
-  5 Minute Walk Radius
-  Trail



Legend

-  School
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