



Memorandum



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To: **City of Delta** Date: **April 16, 2026**

Reference: **Holly Elementary Pedestrian Safety Review** Project No.: **34583**

From: **Borg Chan, M.Sc., P.Eng., PTOE, RSP1 and Varsha Miriam Joseph, M.Eng., E.I.T.**

1.0 Introduction

1.1 Background

The City of Delta (the City) retained ISL Engineering and Land Services (ISL) to undertake a pedestrian safety review for the Holly Elementary School along 62 Street in Ladner, South Delta. The City is commissioning this traffic operations and safety review focusing on pedestrian crossings near Holly Elementary School to evaluate potential enhancements for pedestrian safety.

Holly Elementary School is situated at 62 Street near Ladner Trunk Road (approximately 300 m south). 62 Street functions as a collector road north of Holly Park Drive and continues as a local road south of Holly Park Drive, with one travel lane in each direction. Ladner Trunk Road is classified as an arterial road with two travel lanes in each direction. As part of the 2025/2026 Adult Crossing Guard Program, the City provides funding to the school district for adult crossing guard near Holly Elementary School to enhance safe crossings for students and parents.

1.2 Study Intersections

The study area covers pedestrian crossings at two study intersections: Ladner Trunk Road at 62 Street (a 4-legged intersection controlled by a traffic signal with pedestrian signal phasing at all legs) and 62 Street at Holly Park Drive (a 3-legged, westbound stop-controlled intersection with a marked raised crosswalk at the north leg). It is understood that Rectangular Rapid Flashing Beacons (RRFB) has recently been installed at the marked crosswalk in 2025. **Figure 1.1** illustrates the aerial view of the study intersections.



Figure 1.1 Study Area and Intersections

1.3 Methodology

In order to complete the pedestrian safety review, the following tasks were undertaken:

- Conducted a field review with City staff to confirm the existing configuration and identify current challenges.
- Reviewed intersection collision history for five years (2020-2024) of claim data provided by Insurance Corporation of BC (ICBC).
- Reviewed speed data provided by the City to determine whether speeding issues are prevalent.
- Reviewed signal timing plan at the intersection of 62 Street and Ladner Trunk Road to determine any potential pedestrian safety concerns.
- Identified the potential safety issues and developed proposed feasible improvement measures.
- Completed the technical memo to summarize all study findings.



2.0 Field Review

Field reviews were conducted in the morning of Wednesday, March 11, 2026 and afternoon of Thursday, March 12, 2026, by ISL traffic / road safety engineer and support staff, during the student's pick-up and drop-off times to observe the existing traffic conditions in the area as well as pedestrian activities with existing transportation facilities. ISL staff also met with the principal of Holly Elementary School (with City staff in attendance) and spoke with the crossing guard to understand any pedestrian safety concerns. **Figure 2.1** presents some site photographs at the study intersections.



Northbound 62 Street at Ladner Trunk Road



Southbound 62 Street at Ladner Trunk Road



Eastbound Ladner Trunk Road at 62 Street



Westbound Ladner Trunk Road at 62 Street



Speed hump along 62 Street (Facing southbound)



RRFB crossing at 62 Street and Holly Park Drive

Figure 2.1 Field Review Photographs (Part 1)

Based on discussions with the school principal, no obvious road safety issues were identified and reported. On the other hand, the crossing guard noted safety concerns regarding vehicle speeding along Ladner Trunk Road and insufficient crossing times across the east and west legs at Ladner Trunk Road are noted during students travelling to and from the school.



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From the field review, the following observations were also noted (**Figure 2.2**):

- The student's pick-up and drop-off zone is located at dedicated area within the school premises, and no associated vehicles were noticed to park or stop along the City's roads. As a result, the potential traffic and pedestrian safety issues to the nearby road network are minimal.
- Overhead primary and secondary far-side signal heads were installed for all approaches with 300-millimetre lenses and yellow backboards as well as tertiary signal heads for Ladner Trunk Road; therefore, the driver's visibility to traffic signal should be adequate.
- Northbound left-turn queue at the intersection of 62 Street and Ladner Trunk Road exceeds the available storage length during the student's pick-up and drop-off times, resulting in queue spillback; however, they can usually be clear in one cycle.
- The pavement markings were clear during the daytime even with the cloudy and rainy conditions.
- Street lighting is provided at the four corners of the signalized intersection and along Ladner Trunk Road and 62 Street. Although no nighttime field review was conducted at this study, it is expected that the lighting conditions should be sufficient.
- The school pathway to 62 Street is not directly aligned with the marked crosswalk and the crosswalk pavement on the east side of 62 Street is located at the corner radius with Holly Park Drive, which may place pedestrians within the path of turning vehicles.



Figure 2.2 Field Review Photographs (Part 2)



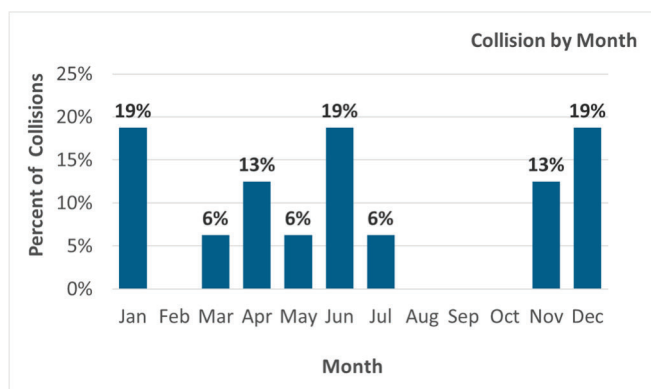
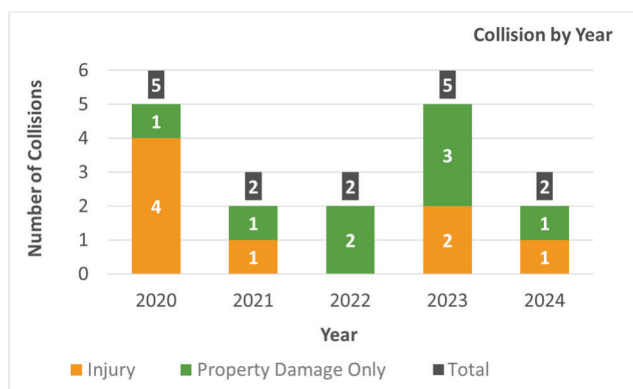
3.0 Collision Analysis

3.1 Ladner Trunk Road and 62 Street

The City provided the information for ICBC claims in the 5-year period between January 1, 2020 and December 31, 2024 for the intersection of Ladner Trunk Road and 62 Street. A total of 18 collisions were recorded at the study intersection for the 5-year period. After a thorough review of the claim descriptions, 16 collisions were determined to be relevant to the purposes of this study, as other two collisions occurred outside the study intersection.

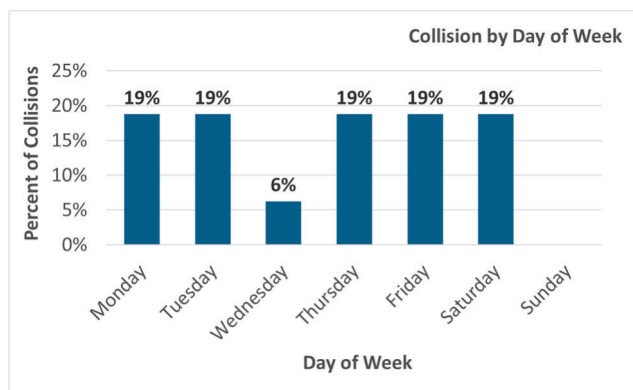
A summary of the findings is presented below, followed by charts illustrating the temporal distribution of collisions (**Figure 3.1**). According to the distributions:

- 50% (8 collisions) resulted in injuries, while the rest 50% (8 collisions) involved property damage only (PDO).
- No fatal collisions occurred during the 5-year study period.
- No pedestrian or cyclist involved collisions occurred during the 5-year study period.

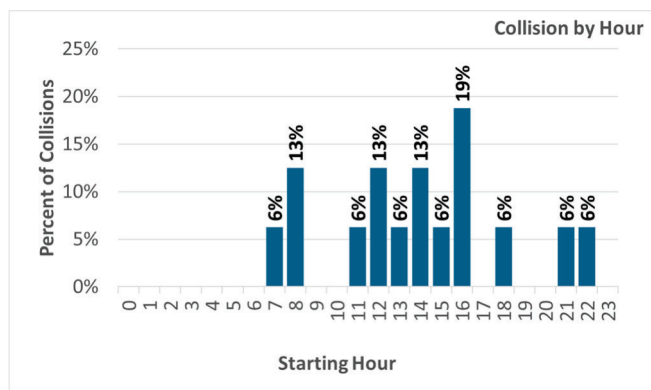


Yearly: The annual collision frequency averaged 3, with 2020 and 2023 both recording the highest numbers of collisions (5). In 2020, 4 of 5 reported collisions resulted in injuries – indicating a notable spike in both collision frequency and severity.

Monthly: Approximately 50% of all collisions occurred during the winter months (November to January). January, June, and December account for the highest monthly share (19%), while no collisions occurred in February and August to October.



Daily: On average, weekdays accounted for 16% of collisions per day, compared to 9% per day on weekends. No collisions occurred on Sundays.



Hourly: During students' pick-up and drop-off times between 7:00 and 9:00, and between 15:00 and 17:00, 19% and 25% of all collisions occurred, respectively.

Figure 3.1 Temporal Distribution of Collisions at the intersection of Ladner Trunk Road and 62 Street

Following a detailed review of each reported ICBC claim, a collision diagram (**Figure 3.2** next page) was prepared to visually depict the type, severity, direction, and location of each incident as well as the distribution of collision types. Key findings from the collision diagram were also discussed.

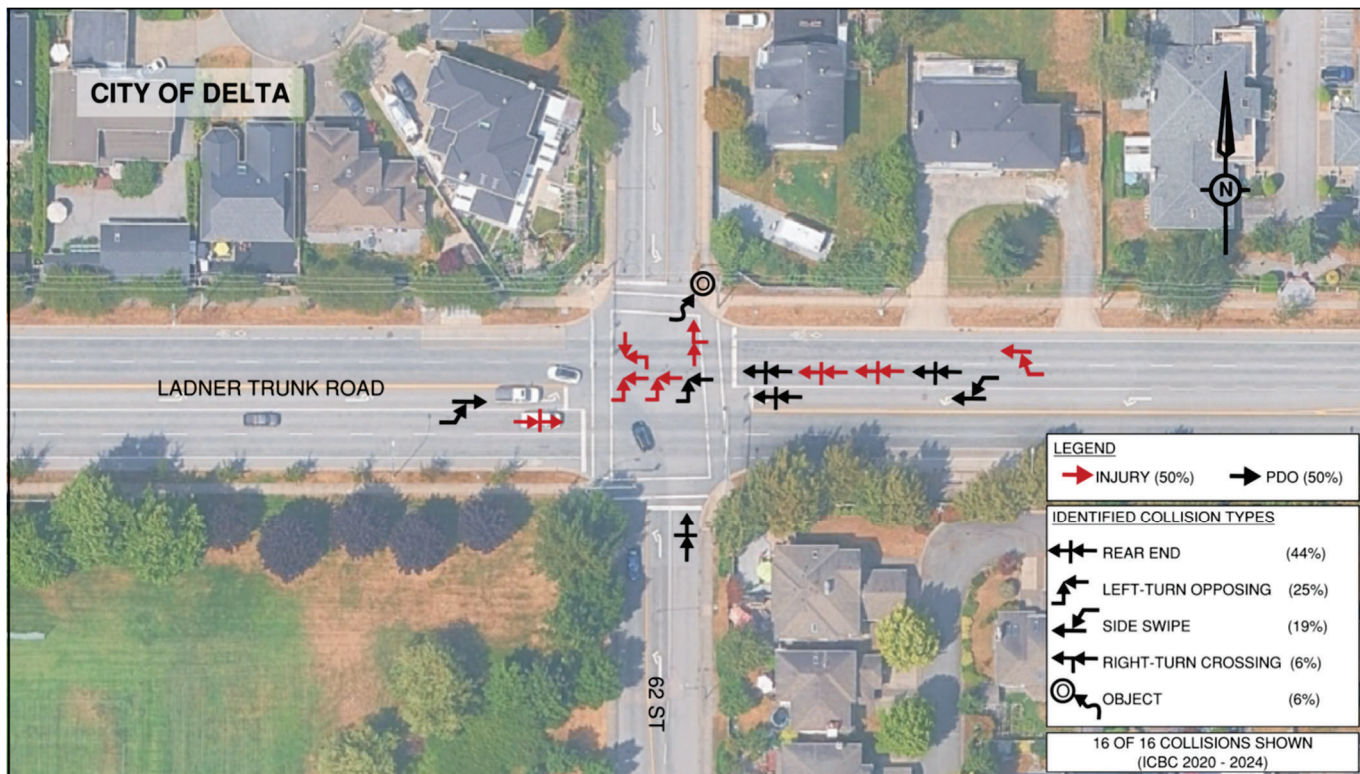


Table 3.1 Collision Diagram (ICBC, 2020-2024)

- **Rear-end collisions** accounted for 44% of all collisions (7 incidents), with approximately 43% of all rear-end collisions resulting in injuries. Five of the rear-end collisions occurred in the westbound direction, and one each in the eastbound and northbound directions. Contributing factors include vehicle speeding and distracted driving along Ladner Trunk Road.
- **Left-turn opposing collisions** were reported as the second most common type (25%), with 4 incidents with 75% resulted in injuries: 3 between eastbound left and westbound through movements, and 1 between northbound left and southbound through movements. Contributing factors include failure to stop at red light or yield to oncoming traffic.
- **Side Swipe collisions** accounted for 19% of all collisions, totaling 3 incidents with 33% resulted in injuries, 2 of which occurred while vehicles changed lanes into the left-turn lane and 1 into the right-turn lane.
- **Other collision types** included one right-turn crossing incident and one hit-an-object collision involving a fire hydrant.

3.2 62 Street and Holly Park Drive

The City also provided the ICBC claims data near the stop-controlled intersection, which only recorded two collisions in 5-year period. The details of these collisions are:

- **Rear-end collision:** A vehicle towing a boat on 62 Street was struck at the rear when the boat became unhitched while going over a speed hump.
- **Cyclist collision:** A vehicle travelling northbound on 62 Street made a left turn into the parking lot adjacent to Holly Park and struck a cyclist travelling on the sidewalk.



4.0 Surveyed Traffic Volumes and Speed Data Review

The City provided surveyed traffic and speed data separately for eastbound and westbound movements along Ladner Trunk Road, and combined data for northbound and southbound movements along 62 Street, and was collected from February 18 to 27, 2026. **Figure 4.1** summarizes the traffic volumes and speed data review, including detector locations and information on total vehicles analyzed, average speed and 85th percentile speed for 10-day survey period. It is expected that higher vehicle operating speed increases the risk and severity of collisions.



Figure 4.1 Traffic Volumes and Speed Data Review

From the traffic volumes and speed data review, the following observations were made:

- Based on the 10-day survey, the average one-way traffic volumes on Ladner Trunk Road are about 2,860 (westbound) and 4,190 (eastbound) vehicles per day while the average two-way traffic volume on 62 Street is 2,380 vehicles per day.
- The eastbound and westbound directions along Ladner Trunk Road exhibited similar average speeds (56 to 57 kilometres per hour – km/h) and 85th percentile speeds (64 km/h). Both surveyed speeds exceeded the posted speed limit of 50km/h.
- Higher operating speeds observed along Ladner Trunk Road could be influenced by its proximity to Highway 17A, west of 62 Street, creating a transition environment where drivers maintain faster speeds as they enter or exit the corridor.
- The average speed (34 km/h) and 85th percentile speed (41 km/h) along 62 Street exceeded the “playground zone” speed limit of 30 km/h. However, the data were collected throughout the day, including time outside the dusk-to-dawn periods when the reduced speed limit may not be in effect, which may bias the results.



5.0 Signal Timing Sheet Review

The City provided the signal timing sheet for the intersection of Ladner Trunk Road and 62 Street to assess the potential safety issues and confirm that suitable time is available for all crossing movements. The signal timing sheet is provided in **Figure 5.1**.

The following features were identified:

- Coordination along the Ladner Trunk Road eastbound–westbound direction with the adjacent intersection (at Highway 17A and 64 Street).
- Protected-permissive left-turn phasing for the eastbound, westbound, and northbound approaches.

SIGNAL TIMING SHEET

DATE ISSUED	4/11/2018		INTERSECTION	LADNER TRUNK ROAD @ 62 STREET				
CONTROLLER TYPE	ECONOLITE ASC3		LOCATION	LADNER				
CABINET TYPE	P44		SHEET NUMBER & REVISION	6421				
SEQUENCE	NEMA DUAL RING		PREVIOUS ISSUE DATE	1/17/2018				

PHASE NUMBER	1	2	3	4	5	6	7	8
PHASE SETTING	ON	ON	ON	ON	ON	ON		ON
DESCRIPTION	LTR WBLT	LTR EB	62 ST NBLT	62 ST SB	LTR EBLT	LTR WB		62 ST NB
FUNCTION								
OVERLAP								
MINIMUM GREEN	6	10	6	7	6	10		20
PASSAGE	4.0	4.0	4.0	4.0	4.0	4.0		4.0
YELLOW	3.5	3.3	3.5	3.3	3.5	3.3		3.3
RED	3.0	3.0	3.0	3.0	3.0	3.0		3.0
VEH EXTENSION	3.0	3.0	3.0	3.0	3.0	3.0		3.0
MAX VMAX II	6	27	6	25	7	27		38
TOTAL SPLITS (1,2,3,4)	13		13	31	13	33		44
MAXPLAN (5,6,7,8)								
WALK	----	7	----	7	----	7		7
PEDESTRIAN CLEAR	----	14	----	14	----	13		18
WALK	----	STEADY	----	STEADY	----	STEADY		STEADY
RECALL	NONE	C-MIN	NONE	NONE	NONE	C-MIN		NONE
MEMORY								
COORDINATION ON PHASE								
FIRST GREEN DISPLAY								
INTERSECTION FLASH								
AWF TIME [s]								
AWF TIME [s] [CH1/CH2]								
DELAY DETECTION TIMING	10 SEC DELAY TIME TO DETECTOR 1 (PHASE 4) AND DETECTOR 10 (PHASE 8)		PROGRAMMING COMMENTS					
			1 COORDINATION ON START OF YELLOW PHASE WESTBOUND/EASTBOUND					
			2 MAX PLAN 3 - MASTER INTERSECTION					
			3					
			4					
PRE-EMPTION TYPE								
DELAY TIME								
PRE-EMPTION TIME								
VOLUME LOGGING & MOES								
SCM			4.					

PED PERMISSIVE	AUTO	CYCLE (1 TO 8)							
		1	2	3	4	5	6	7	8
OFFSET (1 TO 4)		85	85	90					
		0	0	0					

TIME CLOCK SETTINGS						
TIME OF DAY	DAY OF WEEK	MAXPLAN (1 TO 8)	CYCLE (1 TO 8)	OFFSET	SERVICEPLAN	ADDITIONAL TIME CLOCK INFORMATION
00:00-06:00	MON-FRI	2				
06:00-09:00	MON-FRI	3	3	1		
09:00-15:00	MON-FRI	2				
15:00-18:00	MON-FRI	1				
18:00-24:00	MON-FRI	2				

Figure 5.1 Ladner Trunk Road and 62 Street – Signal Timing Sheet

A review of the pedestrian clearance time was conducted using crossing distances measured via aerial photograph and a standard Walking Speed (WS) of 1.2 metres per second (m/s) applied. With a part of walking routes to the school, a lower walking speed of 1.0 m/s will also be applied for children, seniors, and users with accessibility needs and longer pedestrian clearance times could be required. **Table 5.1** presents the minimum pedestrian clearance time required based on a walking speed of 1.2 m/s and 1.0 m/s for each approach.



Table 5.1 Pedestrian Clearance Time at the intersection of Ladner Trunk Road and 62 Street

Approach / Leg	Crossing Distance	Existing Pedestrian Clearance Time	Pedestrian Clearance Time (WS = 1.2 m/s)	Pedestrian Clearance Time (WS = 1.0 m/s)
WB / North	14 m	13 s	11.7 s	14 s
EB / South	16 m	14 s	13.3 s	16 s
NB / East	26 m	18 s	21.6 s	26 s
SB / West	25 m	18 s	20.8 s	25 s

For pedestrian crossing the east and west crosswalks (i.e., NB and SB movements), the pedestrian clearance time may be constrained and inadequate under both 1.2 m/s and 1.0 m/s walking speed assumptions. The pedestrian clearance time for crossing the north and south crosswalks (i.e., EB–WB movements) appears adequate when assuming a walking speed of 1.2 m/s. Under a more conservative walking speed of 1.0 m/s, an extension of approximately 1 to 2 seconds may be beneficial to account for children, seniors, and users with accessibility needs.

6.0 Identified Safety Issues

Potential road safety issues were identified through collision analysis, a review of physical and traffic characteristics, signal timing review, and both desktop and field assessments. These key findings, along with associated photographs are presented below.



Vehicle Speeding

As close to Highway 17A, elevated vehicle speeds were observed from both speed data and field review along Ladner Trunk Road (eastbound and westbound) and 62 Street. High operating speeds increase the risk of collisions, including:

- Rear end collisions
- Right-angle collisions
- Left-turn collisions
- Pedestrian and cyclists involved collisions



Constrained Pedestrian Clearance Time

Based on Signal Timing Sheet review, it was found that pedestrian clearance time may be constrained, particularly when considering children, senior citizens, and users with accessibility needs, increasing the potential for

- Pedestrian involved collisions.



Northbound left-turn queuing exceeds storage space

During student's drop-off and pick-up periods, 62 Street northbound left-turn queue at Ladner Trunk Road exceeds the available storage length, resulting in queue spillback. This creates unexpected stopping conditions and limits available space for through traffic between left-turn queues and parked vehicles, increasing collision risks of:

- Side-swipe collisions
- Rear-end collisions



Signage placed too close to each other

The southbound "Speed Hump" and "Playground Zone" warning signs are placed in close proximity and do not meet MUTCD spacing guidelines. The placement may result in one sign obscuring the other, reducing driver awareness of the playground and school area and creating unexpected slow-down vehicles to check the sign. This could increase the risk of:

- Rear-end collisions
- Pedestrian involved collisions

7.0 Recommendations

Key recommended safety countermeasures were developed based on the safety issues identified through the field review, speed data and signal timing sheet review and collision analysis, including (**Figure 7.1** next page):

- **Install speed reader boards along Ladner Trunk Road**
Speed reader boards along both eastbound and westbound of Ladner Trunk Road would provide real-time speed feedback to drivers, encouraging compliance with the posted speed limit. Speed reader boards are effective traffic calming measures that can help reduce operating speeds, particularly near the school zones and with adult school crossing guards, thereby lowering the risk and severity of collisions.
- **Review and extend pedestrian clearance time**
Based on the Signal Timing Sheet review in **Section 5.0**, extending the pedestrian clearance time may improve safety, particularly given the nearby school and the presence of children who may require more time to cross.
- **Extend northbound left storage length**
The northbound left-turn storage could be extended based on the maximum (95th percentile) observed queue lengths during student's pick-up and drop-off periods. This would help accommodate peak demand, reduce queue spillback into through lanes, and minimize the risk of rear-end and sideswipe collisions. This extension may result in the removal of few on-street parking spaces adjacent to the extension area.
- **Relocate the "Playground Zone" sign**
The "Playground Zone" sign could be shifted north to maintain a minimum spacing of 50 m from the "Speed Hump" warning sign, in accordance with MUTCD guidelines. This would improve sign visibility and ensure drivers can clearly recognize and respond to both warnings.



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Figure 7.1 Recommended Safety Countermeasures

8.0 Closure

We trust this Technical Memorandum fulfils the City of Delta requirements. If there are any questions, please do not hesitate to contact the undersigned.

Yours truly,

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2026-04-16