



City of
Peterborough

To: Members of the General Committee

From: W.H. Jackson, Director of Utility Services

Meeting Date: February 26, 2018

Subject: Report USTR18-002
Implementation of a Crossing Guard on Kawartha Heights
Boulevard at Denure Drive

Purpose

A report to recommend a crossing guard be employed at the intersection of Kawartha Heights Boulevard at Denure Drive.

Recommendation

That Council approve the recommendation outlined in Report USTR18-002 dated February 26, 2018, of the Director of Utility Services, as follows:

That a school crossing guard be implemented at the intersection of Kawartha Heights Boulevard and Denure Drive during the A.M. school admission time and the P.M. school dismissal time.

Budget and Financial Implications

The implementation of a crossing guard on Kawartha Heights Boulevard at Denure Drive will cost approximately \$9,800 per year, funds for which should come from the General Contingency for 2018. In future years, the cost will be funded through the Crossing Guard annual operating budget. The implementation of school crossing infrastructure including sidewalk ramps, pavement markings and signage will cost approximately \$4,000, funds for which should come from the Capital Levy Reserve for 2018.

Background

In response to resident concerns, staff undertook a review of the intersection of Kawartha Heights Boulevard and Denure Drive with respect to the need for a crossing guard.

School Crossing Guard Assessment

The role of a crossing guard is to direct and supervise the movement of persons across a public road by creating necessary gaps in traffic to provide safe passage at a designated school crossing, as defined in the Highway Traffic Act.

In 1992, representatives from the Ontario Traffic Council (OTC) and the Ontario Ministry of Transportation (MTO) collaborated to prepare a report to standardize the implementation of school crossings. This document titled “School Crossing Review 1992” has been used as a guideline by municipalities across the province and laid the foundation for the development of the “OTC School Crossing Guide, 2006” and the recent release of the updated “OTC School Crossing Guard Guide, May 2017”.

The goal of this guide is to promote consistency across the province in the application and management of school crossings to improve safety. The guide provides a step-by-step analytical approach to determine if a school crossing guard should be provided at a specific location. The key factors used to assess the need for a crossing guard depend on the proposed location of the crossing. School crossing locations are categorized as listed below:

- At Signalized Intersections,
- At All-Way Stop Controlled Intersections,
- At Minor Street Stop Controlled Intersections,
- At Pedestrian Signals,
- At Pedestrian Crossovers,
- At Mid-block Locations and;
- At Roundabouts

Kawartha Heights Boulevard at Denure Drive

Site Details

Kawartha Heights Boulevard is a two-lane high capacity collector road running from Brealey Drive in the west to Lansdowne Street in the south. Denure Drive is a two-lane collector road running north-south from Kawartha Heights Boulevard in the south to Ireland Drive in the north. The intersection of Kawartha Heights Boulevard and Denure Drive is a T-intersection with a stop sign and a painted crosswalk on Denure Drive. There are sidewalks on all sides of the intersection, and both roads have a speed limit of 50 km/h. A sketch of the area is shown in Appendix A – Proposed School Crossing Location. Students regularly cross at this location on route to James Strath Public School.

The proposed school crossing on Kawartha Heights Boulevard at Denure Drive is categorized as a Mid-block location. A Mid-block location is defined as a location where students casually cross a main street on their way to and from school where there are no pavement markings and/or no school crossing signs. At this type of location, vehicles have the right-of-way and students must wait for a safe gap in traffic before proceeding to cross the road. The School Crossing Guard Warrant at Mid-block Locations uses the following four key factors in determining the need/justification for a school crossing guard:

- Collision History,
- Student Crossing Volume,
- Gap Study and;
- Other Environmental Conditions potentially affecting safety.

A detailed description and site specific data is presented in Appendix B - Kawartha Heights Boulevard School Crossing Guard Study Analysis

Crossing Guard Warrant Mid-block Location

The Crossing Guard Warrant Mid-block Location considers two conditions, Condition A and Condition B. Condition A requires a minimum of 15 students crossing and 50% or more of all 5-minute intervals surveyed to have 3 or fewer safe gaps. If Condition A criteria are not satisfied, a crossing guard may still be warranted if the Condition B criteria is met. Condition B requires a minimum of 5 students crossing, 50% or more of all 5-minute intervals surveyed to have 3 or less safe gaps and at least one environmental condition satisfied. Table 1 below shows the results of the Crossing Guard Warrant Mid-block Location for the proposed school crossing on Kawartha Height Boulevard at Denure Drive.

Table 1: Crossing Guard Warrant Mid-block Location

Condition A	15 or more students	✓	Satisfied	If both Condition A
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	<p>cross during a crossing period. and;</p> <p>At least 50% of all 5-minute intervals contain 3 or fewer safe gaps during the same crossing period.</p>	<p><input type="checkbox"/> Not Satisfied</p> <p>✓ Satisfied</p> <p><input type="checkbox"/> Not Satisfied</p>	<p>criteria are satisfied, a crossing guard is warranted.</p> <p>A crossing guard is warranted under Condition A</p>
Condition B	<p>5 to 14 students cross during a crossing period. and;</p> <p>At least 50% of all 5-minute intervals contain 3 or fewer safe gaps during the same crossing period. and;</p> <p>At least one Environmental Condition was satisfied at the requested crossing location.</p>	<p><input type="checkbox"/> Satisfied</p> <p><input type="checkbox"/> Not Satisfied</p> <p><input type="checkbox"/> Satisfied</p> <p><input type="checkbox"/> Not Satisfied</p> <p><input type="checkbox"/> Satisfied</p> <p><input type="checkbox"/> Not Satisfied</p>	<p>If all three Condition B criteria are satisfied, a crossing guard is warranted.</p>
If neither Condition A nor Condition B are satisfied, a crossing guard is not warranted.			

A total of 16 students were observed crossing Kawartha Heights Boulevard during the A.M. school admission time. In addition, 57% of all 5-minute intervals contained 3 or fewer safe gaps for students to cross. These two criteria together meet Condition A of the Crossing Guard Warrant Mid-block Location and as such a crossing guard is warranted without the need to further consider Condition B on Kawartha Heights Boulevard at Denure Drive.

Timeline

If the above recommendation for a crossing guard on Kawartha Heights Boulevard at Denure Drive is approved, it is estimated that it would be implemented in June 2018 to provide sufficient time to construct new concrete sidewalk ramps and to hire a new crossing guard.

Summary

The crossing guard review supports the need for a school crossing on Kawartha Heights Boulevard at Denure Drive. The implementation of a crossing guard will create the necessary safe gaps in traffic to allow students to cross Kawartha Heights Boulevard.

Submitted by,

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Attachments:
Appendix A: Proposed School Crossing Location
Appendix B - Kawartha Heights Boulevard School Crossing Guard Study Analysis

Map showing the proposed school crossing location on Kawartha Heights Boulevard and Denure Drive. The map includes the following details:

- Streets:** SUMAC ST, DENURE DR, KAWARTHA HEIGHTS BLVD, WINTERGREEN IL, WINTERGREEN CRT.
- Proposed School Crossing:** Indicated by a yellow sign with a black silhouette of a school bus and children, labeled "SCHOOL CROSSING (TYP)".
- Existing School Crossing:** Indicated by a yellow sign with a black silhouette of a school bus and children, labeled "SCHOOL CROSSING AHEAD (TYP)".
- Stop Signs:** Red octagons with the word "STOP" in white, labeled "STOP".
- Bus Stop:** A red octagon with the word "BUS STOP" in white, labeled "BUS STOP".
- North Arrow:** A compass rose indicating North (N).

Appendix B – Kawartha Heights Boulevard–School Crossing Guard Study Analysis

The School Crossing Guard Warrant Mid-block Location uses the following four key factors in determining the need/justification for a school crossing guard:

- Collision History,
- Student Crossing Volume,
- Gap Study and;
- Other Environmental Conditions affecting safety.

Collision History

A crossing guard may be approved regardless of the outcome of the gap study or the number of students regularly crossing, if an average of more than two vehicle-pedestrian collisions per year occurred over the last three years and those collisions are susceptible to correction by a crossing guard.

A review of the collision history at Kawartha Heights Boulevard and Denure Drive revealed only one single motor vehicle collision outside of the intersection in the past three years and no vehicle-pedestrian interaction was involved. A school crossing guard is not warranted at the intersection of Kawartha Heights Boulevard and Denure Drive based on collision history.

Student Crossing Volume

The student crossing volume is the number of students (JK to grade 6) crossing the road during school admission and dismissal times. The minimum student crossing volume is the minimum number of students required to consider the implementation of a crossing guard. This number is set by the municipality to ensure consistency of application, and allow municipalities to focus their resources at crossings where student utilization is higher. The School Crossing Guard Guide recommends a threshold of 40 students, however; past practice in Peterborough has established a minimum of 15 students at Mid-block locations and 25 students at signalized Intersections. These values were compared with the existing crossing guard locations in Peterborough and were found to be high at crossings where overriding environmental conditions were a safety factor. For consistency, the minimum number of students crossing in Peterborough is set at 15 students under normal conditions and 5 students where environmental conditions are identified as a safety factor.

Gap Study

The crossing guard warrant uses a gap study to determine if there are sufficient safe gaps in traffic to allow the average pedestrian to safely cross the road. The average pedestrian crossing time on Kawartha Height Boulevard is 17 seconds, based on an

average walking speed of 1.0 m/sec plus a 4.0 second reaction time. The number of safe gaps in traffic is counted for each 5-minute interval of the survey period, along with the number of students crossing the road. The survey time for Kawartha Heights Boulevard and Denure Drive was 35 minutes which represents the school crossing times and is equal to seven 5-minutes intervals.

The survey results for the gap study are presented in the **Table 2** below. The survey was conducted during both the A.M. school admission time and P.M. school dismissal time.

Table 2: Gap Study Results

AM		PM	
Percentage of 5-Minute Intervals with 3 or less Safe Gaps	Number of Students Crossing	Percentage of 5-Minute Intervals with 3 or less Safe Gaps	Number of Students Crossing
57%	16	0%	12

The Crossing Guard Warrant Mid-block Locations only requires one of the survey times (A.M. or P.M.) to satisfy the conditions presented in Table 2.

Environmental Conditions

The crossing guard warrant also considers environmental conditions that may impact pedestrian safety as part of the assessment for a crossing guard. Environmental conditions are separated into three categories: Intersection Geometry, Vehicle and Pedestrian Visibility, and Driver Behavior. Site inspections were conducted at Kawartha Heights Boulevard and Denure Drive concurrently with the A.M and P.M gap studies. The results of the site inspection for the requested crossing at Kawartha Heights Boulevard and Denure Drive are shown below in **Table 3**.

Table 3: Environmental Conditions

Intersection Geometry	Students are crossing 3 or more lanes of traffic, channelized right turn lanes, or a centre turn lane.	<input type="checkbox"/> Satisfied <input checked="" type="checkbox"/> Not Satisfied
Vehicle and Pedestrian Visibility	There are sight line limitations for vehicles or pedestrians (horizontal or vertical road curvature, trees, bus shelters/ bus stops, other) which limits visibility to less than 125 meters.	<input checked="" type="checkbox"/> Satisfied <input type="checkbox"/> Not Satisfied
Driver Behavior	Illegal driver behavior was observed during the site inspection (speeding, rolling stops, illegal u-turns, excessively aggressive driving).	<input checked="" type="checkbox"/> Satisfied <input type="checkbox"/> Not Satisfied

The site inspection identified sight line restrictions due to the horizontal road curvature, parked cars, and trees which satisfied the Vehicle and Pedestrian Visibility criteria. A number of rolling stops were also noted during the site inspection which satisfied the Driver Behavior criteria.

Warrant Evaluation

The Crossing Guard Warrant Mid-block Location considers two conditions, Condition A and Condition B. Condition A requires a minimum of 15 students crossing and 50% or more of all 5-minute intervals surveyed to have 3 or fewer safe gaps. If Condition A criteria are not satisfied, a crossing guard may still be warranted if the Condition B criteria is met. Condition B requires a minimum of 5 students crossing, 50% or more of all 5-minute intervals surveyed to have 3 or less safe gaps and at least one environmental condition satisfied.

The Kawartha Heights at Denure Drive location satisfies the minimum warrant for a crossing guard under Condition A. A total of 16 students were observed crossing Kawartha Heights Boulevard during the A.M. school admission time. In addition, 57% of all 5-minute intervals contained 3 or fewer safe gaps for students to cross.