

Use of Flashing Lights and Stop Arms for School Buses

Technical Report

Traffic Engineering

Roads

The City of Calgary

May 14, 2014

EXECUTIVE SUMMARY

This report summarizes safety and operational issues related to the use of flashing red lights and bus-mounted stop signs for school buses within the city of Calgary. A review of current practice in other urban municipalities in Alberta, Saskatchewan, and Ontario and in the United States (US) was completed. During the past 20 years there have been two documented collisions involving children being struck while crossing near a school bus in the City of Calgary (September 17, 1998 and March 13, 2014).

In summary, the rationales for prohibition of use of flashing red lights and bus-mounted stop sign in an urban setting are as follows:

- There are frequent opportunities for safe crossing of roadways at intersections in an urban setting;
- Traffic Safety Act – Alberta mandates the right of way to the pedestrians at uncontrolled crossings, which provides ample crossing opportunities at marked mid-block crosswalks; and
- Stopping traffic when a school bus loads or unloads would result in impacts to vehicular traffic flow.

State laws in US mandating the use of flashing red lights and the stop arms on school buses were intended to increase the safety of the passengers. However, a number of negative safety results of the operation were observed due to non-compliance with the law by motorists. In one survey in the US, 108,000 school bus drivers reported 85,279 violations by motorists in a single school day. Similar violations have resulted in a number of fatalities (e.g. six fatalities in the 2011-2012 school year in the US) of children in different states of US.

Options for bylaw revision are as follows:

1. Maintain existing bylaw and continue to prohibit the use of flashing red lights and bus mounted stop signs during loading and unloading of school buses in urban setting.
2. Amend the bylaw to allow the use of flashing red lights and bus-mounted stop sign.

Based on the potential negative impacts of allowing the use of flashing red lights and bus-mounted stop signs in an urban setting, and the safety issues experienced in other urban jurisdictions within Canada and US due to non-compliance to the law, it is suggested that the bylaw (Calgary Traffic Bylaw 26M96) continue to prohibit the use of flashing red lights and bus-mounted stop signs. It is also recommended that the Schedule “L” of Calgary Traffic Bylaw 26M96 be reviewed and updated if required.

It is suggested that the pick-up/drop-off locations of school buses be reviewed annually with the school board in order to ensure safety of the pick-up/drop-off locations.

Any speed reduction when passing school buses would result in a safety improvement over the current operations. Reduced speed increases the drivers' cone of vision and reduces the likelihood of a collision as well as the severity level of a collision should it occur. Therefore, it is recommended that a public awareness campaign be contemplated to increase public awareness to slow down while passing a school bus during its loading/unloading operation.

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1.0 INTRODUCTION

This report summarizes safety and operational issues related to the use of flashing red lights and bus-mounted stop signs for school buses within the City of Calgary. This issue was examined in 1999 by the Transportation Department and reported to the Council via the S.P.C. on Transportation, Transit and Parking; a summary of item TTP99-06 is included in Appendix A. An update to the previous summary has been completed to review current practice in other urban municipalities in Alberta, Saskatchewan and Ontario. The current practices in selected states in the United States (US) were also reviewed as a part of this exercise. Based on the review, an expanded discussion on pedestrian crossing safety associated with the loading/unloading of school buses in an urban setting is included in this report.

During the past 20 years there have been two documented collisions involving children being struck while crossing a roadway near a school bus in the City of Calgary (September 17, 1998 and March 13, 2014). The most recent collision occurred in the community of Kincora when a student ran across the road in front of a bus to a relative who had parked on the opposite side of the road. There were no sight distance obstructions, other than the bus, and a safe crossing location at the intersection is available near the bus stop. The police investigation noted that the driver was not exceeding the speed limit, but 'should have slowed down a bit more', and that the child ran into the side of the car and was struck by the rear-view mirror. The injury was a minor concussion. This collision may have been prevented if the relative had not parked in a location which encouraged crossing the road in front of the school bus.

Transportation Department of the City of Calgary has completed a review of the existing bylaw (Calgary Traffic Bylaw 26M96) and current practices in other jurisdictions with a view to improving safety of the students during the loading/unloading of school buses. The objective of this report was to review the safety effects of the flashing red lights and stop arms on school buses and recommend any amendment(s) to the Calgary Traffic Bylaw 26M96 to improve the safety of the students during the loading and unloading of school buses in urban settings.

The use of flashing red lights and bus-mounted stop sign effectively creates a mid-block crossing, and is used primarily in rural settings where no crosswalks are provided. In the urban setting, however, crossing opportunities at intersections are frequent as either unmarked or marked crosswalks. Bus stop locations are generally near an intersection. Provision of adequate sight distance at intersections results in improved visibility of pedestrians as compared to mid-block locations where sight distance limitations may exist due to the geometry of the roadway or on-street parking. Drivers are also more likely to expect pedestrians at an intersection or crosswalk as opposed to a mid-block location. Introduction of a mid-block crossing when a school bus is loading or unloading may also create a false sense of security and decreased pedestrian vigilance which would in turn place children at an increased

risk if stop compliance is low. Drivers may not notice the stop arm and/or the flashing red lights in a busy urban setting due to higher driver workload compared to the rural setting, where driver workload is much lower.

Allowing children to cross the road at mid-block locations contradicts what students are taught about traffic safety (i.e., to cross the road at the intersections and painted cross-walk) at school. Again, children (students) may rely on stop arms and flashing red lights instead of paying attention to the oncoming motor vehicles before crossing the road. Overall children (students) may develop a false sense of safety that all the drivers will stop when the stop arm and/or the red-flashing lights are activated; however, some drivers may not stop even when the stop arm is down and the flashing red lights are activated.

Stopping traffic for school buses to load or unload would frequently occur during peak traffic times. The need to stop near an intersection may be unexpected, particularly if the flashing red lights and bus-mounted stop sign are not visible to vehicles at the end of a queue of stopped traffic; this may lead to an increase in rear-end collisions and further traffic flow impacts.

Enforcement of the requirement to stop for a school bus with flashing red lights and a bus-mounted stop sign may be difficult due to the transient nature, in time and space, of the requirement to stop.

2.0 JURISDICTIONAL REVIEW

2.1 City of Calgary

The existing City bylaw, Bylaw Number 26M96, reads as follows with respect to school buses:

SCHOOL BUSES

38. (1) The operator of a vehicle bearing the sign “School Bus” shall not activate the alternately flashing red or yellow lights on the vehicle while loading or unloading passengers on a highway in the City except on those highways listed in Schedule “L” of this Bylaw.
- (2) The requirement under the Act for the operator of a school bus to make a mandatory stop at a railway crossing not controlled by a traffic control signal shall not apply to such uncontrolled crossings within the corporate limits.

The Schedule “L” of the bylaw should be reviewed and updated if required in order to ensure the safe operation of the school buses on the highways.

It is of paramount importance to ensure the safety of the pick-up/drop-off locations of the school buses for the safety of the students. The pick-up/drop-off locations of the school buses should be reviewed annually with the school board in order to ensure safe loading/unloading operation of the school buses.

It is important to note that the current Alberta Use of Highway and Rules of the Road Regulation (Section 71 and Section 72) and Driver's Guide (Section 8) differentiate between the use of alternate flashing amber (yellow) lights and alternately flashing red lights. When passing a school bus with alternately flashing amber lights drivers must reduce the speed of the vehicle so that if it passes the school bus it does so in a cautious manner. When flashing red lights are displayed drivers must stop, unless traveling in the opposite direction of the bus on a divided roadway.

Traffic Safety Act – Alberta mandates the right of way to the pedestrians at uncontrolled marked pedestrian crossing.

Traffic Safety Act – Alberta

Yielding to pedestrians 41(1)

A person driving a vehicle shall yield the right of way to a pedestrian crossing the roadway within a crosswalk.

Pedestrians' right of way 93(1)

At a place where there is a crosswalk, a pedestrian has, unless otherwise directed by a peace officer or a traffic control device, the right of way over vehicles for the purpose of crossing the roadway within the crosswalk.

According to Alberta Traffic Safety Act 1(d) "crosswalk" means

- (i) that part of a roadway at an intersection included within the connection of the lateral line of the sidewalks on opposite sides of the highway measured from the curbs or, in the absence of curbs, from the edges of the roadway, or
- (ii) any part of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by signs or by lines or by other markings on the road surface.

Therefore, Traffic Safety Act – Alberta mandates the right of way to the pedestrians even at uncontrolled crossings, which provides ample crossing opportunities at intersections and/or marked crosswalks. Therefore, it is not necessary to create a controlled crossing with the use of flashing red lights and/or the stop arm on school buses during loading and unloading.

2.2 Traffic Laws and Bylaws in Different Jurisdictions of Canada

A rigorous review of the traffic laws and bylaws in other jurisdictions of Canada was completed as a part of this exercise.

The following sections present the summary of associated laws and bylaws in the selected municipalities in Alberta, Saskatchewan, and Ontario.

2.3 Other Urban Municipalities in Alberta

Traffic bylaws in a selection of other Alberta urban municipalities were reviewed and are as follows:

City of Edmonton (Bylaw 5590)

SCHOOL BUS LIGHTS

83 A person operating a school bus shall not activate the alternately flashing lights or the stop arm on a highway unless the highway is one designated as permitting this activity.

City of Red Deer (Bylaw No. 3186/97)

OPERATION OF SCHOOL BUSES

100 No person shall activate the flashing red lights or stop arms of a school bus on any highway where such highway has been constructed with curbs and gutters.

City of Lethbridge (Bylaw 4122)

B/L 4122 1614 No person shall activate alternating flashing lights and
9/1/86 stop arms on a school bus upon any highway in the City of Lethbridge where that highway has a posted speed limit of 50 kilometres or less.

All of the reviewed bylaws in Alberta consistently prohibit the use of flashing red lights or the use of the stop arm with some exceptions based on specific designation of the roadway, the posted speed or the physical characteristics of the roadway.

2.4 Urban Municipalities in Saskatchewan

Traffic bylaws in some urban municipalities of other provinces within Canada were reviewed as a part of this exercise. The summary is presented below:

City of Regina (Bylaw No. 9900)

SCHOOL BUS SAFETY LIGHTS

28 No person shall activate the safety lights or stop sign on a school bus when loading or unloading passengers.

City of Saskatoon (Bylaw No. 7200)

SCHOOL BUS SAFETY LIGHTS

32(1) Notwithstanding Section 22 of *The Traffic Safety Act*, the driver of a school bus shall not use the safety lights on the bus while operating the bus within the corporate limits of the City of Saskatoon.

2.5 Urban Municipalities in Ontario

Bylaws of a few selected urban municipalities in Ontario (City of Toronto, City of London, and City of Waterloo) were reviewed. It was found that these urban municipalities do not have a bylaw in effect prohibiting the use of overhead flashing red lights and the stop arm on school buses during loading and unloading of passengers. The Highway Traffic Act regulated by the Ministry of Transportation, Ontario mandates the usage of the overhead flashing red lights and the stop arm on school buses during the loading and unloading of passengers:

HIGHWAY TRAFFIC ACT (Ontario) – RELATING TO SCHOOL BUSES

Section 175 (6) Subject to subsection (9), every school bus driver:

- a. Who is about to stop on a highway for the purpose of receiving or discharging children or receiving adults who have developmental disabilities, shall actuate the overhead red signal-lights on the bus.
- b. As soon as the bus is stopped for a purpose set out in the clause (a), shall actuate the school bus stop arm; and
- c. While the bus is stopped for a purpose set out in clause (a) on a highway, shall continue to operate the overhead red signal-lights and stop arm until all passengers having to cross the highway have completed the crossing.

2.6 Summary of Jurisdictional Reviews within Canada

The review of the laws and bylaws in other jurisdictions within Canada provided mixed results. The City of Regina and the City of Saskatoon prohibit the use of flashing red lights and/or the stop arm on school buses during loading and unloading of passengers within the city limits which is consistent with the City of Calgary and other municipalities in Alberta with some exceptions based on specific designation of the roadways. However, the municipalities in Ontario that were included in the jurisdictional review (the City of Toronto, the City of London, and the City of Waterloo) allow the usage of the flashing red lights and the stop arm on the school buses during loading and unloading of children (students) by virtue of the Highway Traffic Act regulated by the Ministry of Transportation, Ontario.

However, the need for flashing red lights and/or the stop arms on school buses during loading and unloading of students in the municipalities of Ontario can be explained by the differences in Ontario's Highway Traffic Act and Alberta's Highway Traffic Safety Act.

Highway Traffic Act - Ontario rules of the road indicate that when a pedestrian is about to step from the side of the road onto the roadway, there are fundamentally two distinct categories of pedestrian crossings. The crossing may be either:

1. A controlled crossing - where vehicles are required to stop or yield to traffic legally in the intersection, which includes pedestrians, or
2. An uncontrolled crossing - where pedestrians must wait for safe gaps in traffic, sufficient for them to cross the roadway.

An uncontrolled crossing is a crossing that does not have any traffic control measure to provide a dedicated pedestrian right-of-way. Pedestrians must wait for a safe gap sufficient to fully cross the roadway or for vehicles to stop before crossing. In accordance with Ontario's Highway Traffic Safety Act, protected pedestrian crossings in the Province of Ontario are only at locations where vehicles are controlled by any of the following: traffic signals, intersection pedestrian signals, mid-block pedestrian signals, pedestrian crossovers, stop signs, yield signs or school crossings when an adult school crossing guard is supervising the crossing¹.

Table 1 summarizes those conditions where there are controlled crossings and those that are uncontrolled.

¹ *Ontario Traffic Manual – Pedestrian Crossing Facilities (2010)*.

Table 1 – Controlled and Uncontrolled Crossings¹

Controlled Crossings	Uncontrolled Crossings
<ul style="list-style-type: none"> • Traffic Control Signals • Intersection Pedestrian Signals • Pedestrian Crossover • STOP Sign • YIELD Sign • Designated School Crossing with Crossing Guard 	<ul style="list-style-type: none"> • Mid-block Crossings (in the absence of traffic control signals, intersection pedestrian signals or pedestrian crossover) • Designated School Crossing (in the absence of a crossing guard and without other forms of control such as traffic control signals, intersection pedestrian signals, pedestrian crossover, STOP signs or YIELD signs) • Marked Crossing (at intersection in the absence of STOP or YIELD signs)

The types of controlled crossing and the pertinent right-of-way rules as proclaimed in the Highway Traffic Safety Act – Ontario are presented in Appendix B.

Therefore, in the province of Ontario, it is the shared responsibility between the pedestrians and drivers at the uncontrolled crossings i.e. the pedestrians do not have the right of way at uncontrolled crossings (see Table 1). If a driver is approaching an uncontrolled crossing and a pedestrian is already at the crossing and trying to cross it (i.e. the pedestrian has not yet begun crossing), the driver is not lawfully required to yield to the pedestrian. However, if the pedestrian has already started crossing the intersection, the driver does have to yield. The pedestrian, however, has to make sure that there is a safe gap in the traffic before starting to cross.

The discussion above reveals that because of the pedestrians not having the right of way at the uncontrolled crossing, the use of flashing red lights and/or stop arms on school buses during loading and unloading of students (children) is justified in order to provide a controlled crossing to the students in the municipalities of Ontario.

However, in contrast to the province of Ontario, the Traffic Safety Act – Alberta mandates the right of way to the pedestrians at uncontrolled marked pedestrian crossing. This provides ample crossing opportunities to pedestrians at intersections and/or marked crosswalks. Therefore, it is not necessary to create a controlled crossing with the use of flashing red lights and/or stop arms on school buses during loading and unloading as it is necessary in Ontario.

2.7 Urban Municipalities in United States (US)

Traffic laws and bylaws in selected urban municipalities (New York City, the City of San Jose, the City of San Francisco, and the City of San Diego) in the US were also reviewed. The use of flashing red lights and stop arm on school buses during loading and unloading of passengers is mandated by state laws in these urban municipalities. The state laws in New York and California regarding the use of flashing red lights and stop arms on school buses are presented below:

Vehicle and Traffic Law – New York State

Article 29 & Section 1174(b)

The drivers of school buses, when receiving or discharging passengers who must cross a public highway, street or private road, shall instruct such passengers to cross in front of the bus and the driver thereof shall keep such school bus halted with red signal lights flashing until such passengers have reached the opposite side of such highway, street or private road. Whether such passengers are crossing such highway street or private road or discharging to the same side of such highway, street or private road, the driver of such bus shall keep such school bus halted with red signal lights flashing until such passengers are at least fifteen feet from the bus and either off the highway, street or private road or on a sidewalk.

California Law

Vehicle Code Section – 22112(c)

When a school bus is stopped on a highway or private road for the purpose of loading or unloading pupils, at a location where traffic is not controlled by a traffic officer, the driver shall, before opening the door, ensure that the flashing red light signal system and stop signal arm are activated, and that it is safe to enter or exit the school bus.

The laws and bylaws in different jurisdictions of US included in this review (New York City, the City of San Jose, the City of San Francisco, and the City of San Diego) allow the use of flashing red lights and stop arm on the school buses during loading and unloading of children. However, different states in US are currently facing stiff challenges in mandating the laws associated with the use of flashing red lights and/or the stop arm on school buses during loading and unloading of students (children).

2.8 Challenges When Use of Flashing Lights and Bus-Mounted Stop Permitted

State laws in US mandating the use of flashing red lights and the stop arms on school buses were intended to increase the safety of the passengers during the loading and unloading operation. A number of negative safety results of the operation have been observed. Most of the negative safety results were due to non-compliance with the law by motorists that led to collisions. In a survey conducted on speeding and other unsafe driving behaviours in 1997, about 99 percent of the drivers interviewed felt that the most dangerous unsafe driving behaviour was passing a school bus with its lights flashing and stop arm extended². The use of flashing red lights and stop arm on school buses provides passengers a sense of safety to cross the road at a mid-block location even though the high violation rate of stop arm and flashing red light on school buses put passengers at a high risk of severe collisions. The National Association of State Directors of Pupil Transportation Services (NASDPTS) conducted an annual survey in 2013 on the violation of stop-arm and flashing red lights on school buses in 29 states throughout the US where 23 percent of the nation's school bus drivers participated. In the survey, 108,000 school bus drivers reported 85,279 stop arm and flashing red light violations by motorists in a single school day³. Over the years the violation of stop arm and flashing red lights on school buses has resulted in a number of fatalities (e.g. six fatalities in the 2011-12 school year in the US⁴) of children (students) in different states of US. The states are facing strong challenges in mandating the laws regarding the school bus stop arm and flashing red lights on school buses. It draws passengers to mid-block locations for crossing, and becomes particularly unsafe when there is a significant violation rate of the stop arm and flashing red light on school buses.

Due to high non-compliance rate of flashing red light and stop arm on school buses, some states in US e.g. Texas, Georgia, Indiana, Iowa, South Carolina, Maryland, and New York are seriously considering the installation of cameras on stop arms of school buses. This clearly indicates that running stop arm on school buses has become a significant concern for the safety of the students (children) in US.

² *Best Practices Guide: Reducing the Illegal Passing of School Buses*, National Highway Traffic Safety Administration, USA.

³ *Motorists Still Endangering Children by Passing School Buses Illegally – Press Release: August 12, 2013*, National Association of State Directors of Pupil Transportation Services

⁴ *Kansas State Department of Education's (KSDE) Report 2011-2012*

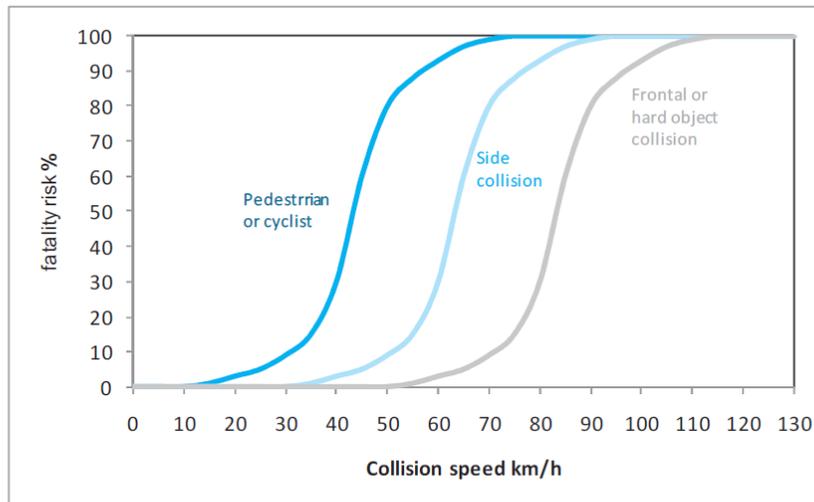
<http://www.campussafetymagazine.com/article/6-of-9-danger-zone-deaths-were-by-other-vehicles>

The statistics presented above clearly indicates a continued lack of compliance of the flashing red light and stop arm on school buses. Therefore, mandating the use of flashing red light and stop arm cannot guarantee students safety during loading-unloading of the school buses; rather this could increase the risk of a collision by providing false notions of safety to the students while crossing the road.

3.0 RELATIONSHIP OF COLLISION SPEED AND PEDESTRIAN COLLISION SEVERITY

The relationship between pedestrian collision severity and collision speed has been proven internationally; this relationship, as shown in the Calgary Safer Mobility Plan, is presented graphically below.

The uniformity of international findings on the probability of a fatal collision as a function of collision speed is due to the physical limitations of the human body to handle the energy of a collision. This relationship illustrates that at 50 km/h there is a 20% chance of survival, compared to 30 km/h with a 90% chance of survival.



Source: Wramborg, P. (2005). *A New Approach to a Safe and Sustainable Road Structure and Street Design for Urban Areas*. Paper presented at Road Safety on Four Continents Conference, Warsaw Poland.

Any speed reduction when passing school buses would result in a safety improvement over the current operations. Reduced speed not only increases the drivers' cone of vision and reduces the likelihood of a collision, but also reduces the severity level of a collision should it occur. In this case during loading/unloading of a school bus, reduced speed of the approaching vehicles would significantly reduce the likelihood of a severe collision should a child run out from in front of a bus. Therefore, it is recommended that a public awareness campaign be contemplated to increase public awareness to slow down while passing a school bus during its loading/unloading operation.

4.0 CONCLUSIONS

Based on the potential negative impacts of allowing the use of flashing red lights and bus-mounted stop signs in an urban setting, and the safety issues experienced in other urban jurisdictions within Canada and US due to non-compliance to the law, it is suggested that the use of the flashing red lights and bus-mounted stop signs continue to be prohibited during the loading/unloading operation of school buses in urban setting.

5.0 RECOMMENDATIONS

1. It is recommended that Calgary Traffic Bylaw 26M96 continue to prohibit the use of flashing red lights and bus-mounted stop signs;
2. The Schedule “L” of Calgary Traffic Bylaw 26M96 should be reviewed and updated if required;
3. It is recommended that the pick-up/drop-off locations of school buses be reviewed annually with the school board in order to ensure safety.
4. It is suggested that a public awareness campaign be contemplated to increase public awareness to slow down while passing a school bus during its loading/unloading operation.

APPENDIX A – TTP99-06

S.P.C. ON TRANSPORTATION, TRANSIT AND PARKING TTP99-06 FLASHING LIGHT POLICY - SCHOOL BUSES

ISSUE:

1999 FEBRUARY 09

A review of the current on and off loading procedures for buses and, specifically, whether there needs to be a change in the legislation with regards to the use of alternating flashing lights.

RECOMMENDATIONS:

That:

1. No changes be made to the Traffic Bylaw concerning alternating flashing lights on school buses and
2. The Transportation Department embark on an education program directed at motorists related to safe practices around school buses loading or unloading.

COMMISSIONER'S COMMENTS:

Commissioner Ward concurs with this report.

BACKGROUND:

At the 1998 September 28 Council meeting the following motion was adopted: . . . that, with respect to Commissioners' Report TTP98-42, the Administration prepare a report on the recent school bus incident on Erin Woods Drive, with input from Calgary Police Service, Calgary Board of Education, and the school bus operator, and make recommendations on whether the flashing light policy needs to change, or not, and any other actions which would prevent further such actions.

Alderman Ceci prepared this motion as a result of a 1998 September 17 pedestrian accident that occurred on Erin Woods Boulevard. The student exited the bus onto the south side of Erin Woods Boulevard S.E. and then ran north in front of the parked bus without looking. The student then ran into an eastbound vehicle.

In 1986 September, Bill 17 was introduced which amended the Provincial Highway Traffic Act as it pertained to the loading and unloading of school buses utilizing the newly introduced alternating flashing warning light system . The legislation would have required school buses to activate their flashing lights and stop arms when loading or unloading passengers within the city. However, it also provided that a municipality could pass a bylaw prohibiting the use of flashing lights and stop arms within their corporate limits. Given that pedestrians have the right-of-way at all intersections with or without marked crosswalks and the extent of pedestrian crossing protection that exists within the city (i.e . crosswalks, intersection and corridors), the use of the flashing lights and stop arms was considered superfluous.

In 1986 November Council approved an amendment to the Traffic Bylaw 40M80 whereby drivers of school buses were prohibited from activating the alternating flashing lights or stop arms on roadways within the city, except for those roadways listed in Schedule "K" of the Traffic Bylaw. The current Traffic Bylaw Section 38(l) states the operator of a vehicle bearing the sign "School Bus" shall not activate the alternating flashing red or yellow lights on the vehicle while loading and unloading passengers on a highway in the city except on those highways listed in Schedule "U" of this bylaw. Schedule "L" (see Attachment) now lists all roadways on which the alternating flashing lights are required. The list of roads in Schedule "L" where drivers of school buses would be required to activate the alternating flashing lights and stop arms was developed by the Transportation Department in consultation with the Public and Catholic School Boards and the school bus operators. Typically, the roadways listed in Schedule "U" are rural in nature, i.e. without sidewalks and pedestrian facilities usually found in an urban environment.

INVESTIGATION:

The Transportation Department contacted the Calgary Police Service, the Calgary Board of Education, the Calgary Catholic School District, the three major school bus operators and Calgary Transit for their input and all agree that the current legislation is appropriate.

There are currently 764 school bus routes in the city. On average, there are seven stops per route which means in excess of 5,000 stops in the morning and a similar number in the afternoon. If the flashing light system was activated at each and every one of these 10,000 stops, it would result in unnecessary traffic congestion.

The majority of stops are located at the far side of intersections so passengers can disembark and walk back to the intersection to cross the roadway safely.

The consensus was that the use of the alternating flashing light system should occur only on roadways that are rural in nature where pedestrian facilities, which would alert drivers to the potential presence of pedestrians, are absent. It was considered prudent to have school buses continue to activate the flashing lights and stop arms while loading/unloading passengers on all roads listed on Schedule "L".

An awareness program promoted by Alberta Transportation and Utilities addresses only the procedures to be followed by motorists encountering a school bus in rural Alberta and no mention is made of urban centres. An information brochure, produced by the Transportation Department, can be developed for educating motorists about safe practices to be followed around school buses loading or unloading in an urban area. Students are continually trained and retrained on safe procedures for loading and unloading of school buses, as well as the proper methods for crossing a roadway.

On 1999 January 19, Transportation Department and Calgary Police Service representatives met with the Erinwoods' School Council to discuss the pedestrian vehicle accident of 1998 September 17. Numerous issues were discussed to improve pedestrian safety around Erinwoods School. These concerns will be addressed through the normal procedures currently in place to deal with school issues.

The Transportation Department representative presented the existing legislation with respect to flashing school bus lights. The School Council appreciated the information

and agreed to work with the Transportation Department on safety related issues around the school.

CONCLUSION:

Most roadways in Calgary have sidewalks and pedestrian crossing protection in various forms at the nearest intersection to the school bus stop. The use of flashing lights and stop arms on school buses is not necessary on these roadways and, in fact, creates a safety hazard by stopping the traffic flow unnecessarily and by encouraging mid-block crossing.

It is important to continue with the operation of the flashing lights on all roadways listed in Schedule "L". However, the Transportation Department should embark on an educational awareness program for motorists related to safe practices to be followed around school buses loading or unloading in an urban area.

ATTACHMENT:

Schedule "L" Bylaw 26M96



APPENDIX B – Highway Traffic Safety Act - Ontario

Highway Traffic Act – Ontario

According to the **Highway Traffic Act Section 144 – Traffic Control Signals and Pedestrian Control Signals**, a pedestrian crossing is controlled by the WALK, FLASHING DON'T WALK and the DON'T WALK indicators:

Pedestrian Crossing

(22) Where portions of a roadway are marked for pedestrian use, no pedestrian shall cross the roadway except within a portion so marked. R.S.O. 1990, c. H.8, s. 144 (22).

Pedestrian Control Signals - Walk

(26) Where pedestrian control signals are installed and show a “walk” indication, every pedestrian facing the indication may cross the roadway in the direction of the indication despite subsections (24) and (25). R.S.O. 1990, c. H.8, s. 144 (26).

Pedestrian Control Signals – Don't Walk (27) No pedestrian approaching pedestrian control signals and facing a solid or flashing “don't walk” indication shall enter the roadway. R.S.O. 1990, c. H.8, s. 144 (27).

Pedestrian Right of Way

(28) Every pedestrian who lawfully enters a roadway in order to cross may continue the crossing as quickly as reasonably possible despite a change in the indication he or she is facing and, for purposes of the crossing, has the right of way over vehicles. R.S.O. 1990, c. H.8, s. 144 (28).

According to the **Highway Traffic Act Section 140 – Pedestrian crossover, duties of driver**:

(1) Subject to subsection (2), when a pedestrian or a person in a wheelchair crossing a roadway within a pedestrian crossover,

(a) is upon the half of the roadway upon which a vehicle or street car is travelling; or

(b) is upon half of the roadway and is approaching the other half of the roadway on which a vehicle or street car is approaching so closely to the pedestrian crossover as to endanger him or her,

the driver of the vehicle or street car shall yield the right of way to the pedestrian or a person in a wheelchair by slowing down or stopping if necessary. R.S.O. 1990, c. H.8, s. 140 (1).

According to the **Highway Traffic Act Section 136 – Stop at through highway:**

- (1) Every driver or street car operator approaching a stop sign at an intersection,
- (a) shall stop his or her vehicle or street car at a marked stop line or, if none, then immediately before entering the nearest crosswalk or, if none, then immediately before entering the intersection; and
- (b) shall yield the right of way to traffic in the intersection or approaching the intersection on another highway so closely that to proceed would constitute an immediate hazard and, having so yielded the right of way, may proceed. R.S.O. 1990, c. H.8, s. 136(1).

Interpretation

Traffic includes pedestrians, ridden or herded animals, vehicles, bicycles, inline skaters, scooters and other conveyances, either singly or together, while using a highway for purposes of travel.

According to the **Highway Traffic Act Section 138 – Yield right-of-way signs:**

- (1) The driver or operator of a vehicle or street car approaching a yield right-of-way sign shall slow down to a speed reasonable for the existing conditions or shall stop if necessary as provided in clause 136 (1) (a) and shall yield the right of way to traffic in the intersection or approaching on the intersecting highway so closely that it constitutes an immediate hazard and having so yielded may proceed with caution. R.S.O. 1990, c. H.8, s. 138 (1).

Interpretation

Traffic includes pedestrians, ridden or herded animals, vehicles, bicycles, inline skaters, scooters and other conveyances, either singly or together, while using a highway for purposes of travel.

Adult school crossing guards may also provide a designated right-of-way for school children as vehicles must yield to a crossing guard. According to the **Highway Traffic Act Section 176 – School crossings:**

School crossing guard shall display sign

(2) A school crossing guard about to direct persons across a highway with a speed limit not in excess of 60 kilometres per hour shall, prior to entering the roadway, display a school crossing stop sign in an upright position so that it is visible to vehicles approaching from each direction and shall continue to so display the school crossing stop sign until all persons, including the school crossing guard, have cleared the roadway. 2005, c. 26, Sched. A, s. 29 (1).

Vehicles approaching guard displaying sign

(3) Where a school crossing guard displays a school crossing stop sign as provided in subsection (2), the driver of any vehicle or street car approaching the school crossing guard shall stop before reaching the crossing and shall remain stopped until all persons, including the school crossing guard, have cleared the half of the roadway upon which the vehicle or street car is travelling and it is safe to proceed. 2005, c. 26, Sched. A, s. 29 (1).