

Town of Amherst



Crosswalk Review 2018

Introduction

There are currently 177 crosswalks within the Town of Amherst. Requests for additional crosswalks or improvements to existing pedestrian crossing controls are reviewed by the local Traffic Authority. The Traffic Authority for the Town is the Chief of Police. Section 90(1) of the Motor Vehicle Act provides the authority for the Traffic Authority to *“...establish and designate and may maintain, or cause to be maintained, by appropriate devices, marks or lines upon the surface of the highways, crosswalks at intersections where, in their opinion, there is particular danger to pedestrians crossing the highway, and at such other places they may deem necessary.”*

In 2017 during the review of a request for a crosswalk, it became clear there was a lack of consistency in application of pedestrian crossings within the Town. The Traffic Authority was tasked by Council to conduct a review of the current process to oversee the application of pedestrian crossing controls, the process used to assess requests for crosswalks and provide a report to Council with findings and recommendations. Upon presentation to Council the process would seek public engagement and feedback.

A Crosswalk Review Committee was subsequently formed. Members of the Committee were Chief Ian Naylor, S/Sgt Scott White, Aaron Bourgeois Public Works Operations Manager, and Brandon Leblanc. (Brandon Leblanc is an engineering student enrolled at Universite de Moncton, employed with the TOA during the summer of 2017)

OBJECTIVES

The Committee was to assess the existing crosswalks within the Town and provide recommendations on the retention, removal, installation of new crosswalks, and the type of pedestrian controls. The Committee was responsible to develop a set of criteria based on best practices. The criteria is to take into consideration local priorities, values, and goals.

PROCESS

Each location was viewed through a site visit and through the use of Google Maps. An evaluation sheet was completed for each location. Data collected by the evaluation sheets included description of the location, # of lanes, speed limit, vehicle and pedestrian volume estimates, school zone (Y/N), markings and signage.

The committee assessed each location using the data collected, the *Transportation Association of Canada (TAC) Pedestrian Crossing Control Guide*, and the criteria developed by the committee.

Legislation – the Motor Vehicle Act

Defining a Crosswalk

A crosswalk is defined by the Nova Scotia Motor Vehicle Act as *“that portion of the roadway ordinarily included within the prolongation or the connection of curb lines and property lines at intersections or any other portion of a roadway clearly indicated for pedestrian crossings by lines or other markings on the surface.”* It can be interpreted from this definition and Section 125 of the ACT “unmarked” **crosswalks exist at every intersection** and that pedestrians have the right of way in these locations.

Despite the provision that crosswalks exist at every intersection, there are areas where additional devices and markings are helpful, both to draw driver attention to a crosswalk and to encourage pedestrians to cross at a preferred location.

Section 125 – Pedestrian and Vehicle Rights of Way

125 (1) Where pedestrian movements are not controlled by traffic signals,

- (a) the driver of a vehicle shall yield the right of way to a pedestrian lawfully within a crosswalk or stopped facing a crosswalk;
or
- (b) where the traffic on a highway is divided into separate roadways by a median, the driver of a vehicle shall yield the right of way to a pedestrian lawfully within a crosswalk or stopped facing the crosswalk on the roadway on which the vehicle is travelling.

(2) Where a vehicle has stopped at a crosswalk to yield to a pedestrian pursuant to subsection (1), it is an offence for the driver of any other vehicle approaching from the rear to overtake and pass the stopped vehicle.

(3) A pedestrian shall not leave a curb or other place of safety and walk or run into the path of a vehicle that is so closely approaching that it is impractical for the driver of the vehicle to stop.

(4) Where a pedestrian is crossing a roadway at a crosswalk that has a pedestrian-activated beacon, the pedestrian shall not leave a curb or other place of safety unless the pedestrian-activated beacon has been activated.

(5) A pedestrian crossing a roadway at any point other than within a crosswalk shall yield the right of way to vehicles upon the roadway.

(6) This Section does not relieve a pedestrian or a driver of a vehicle from the duty to exercise due care. 2007, c. 45, s. 9.

Section 125 sets out the following requirements for drivers and pedestrians:

Drivers:

- Stop for pedestrians crossing a crosswalk or stopped at a crosswalk waiting to cross.
- The Act recognizes there will be times when it is impractical for the driver to stop the vehicle is due to close proximity when a pedestrian first arrives at the crosswalk.







Pedestrians:

- Have a responsibility to assess whether an approaching vehicle is so close it is impractical for the driver of the vehicle to stop. If so they shall not walk into the path of the vehicle.
- Where a pedestrian walk light, amber flashing lights, or other "*pedestrian-activated beacon*" is present they shall not cross at a crosswalk unless it is activated.
- May cross a street at any location where there is no crosswalk but must yield the right of way to approaching vehicles. It is a common belief that unless you cross a street at an intersection you are jay walking. This is incorrect. If you can cross without requiring a vehicle to slow down, stop or swerve to avoid you can legally cross the street.

Regulatory Signage



Uniform use of regulatory signs is very important to notify the driver of the presence of a marked crosswalk. These signs are detailed in the Nova Scotia Traffic Signs Regulations and are shown below. To ensure uniformity and consistency, the use of regulatory signs for crosswalks other than those shown below is not permitted.

Table 2: Regulatory Signs

		The <i>Pedestrian Crosswalk</i> sign (RA-4) is black on white and is used to indicate the location of a pedestrian crosswalk. The sign is installed on both sides of the road (RA-4L on the left side, RA-4R on the right side) such that the pedestrian symbol on each sign is walking toward the centre of the road. On two-way roads, the signs are mounted back-to-back such that they appear the same from each approach.
		The <i>School Crosswalk</i> sign (RA-3) is black on white and is used to indicate the location of a school crosswalk. The sign is installed on both sides of the road (RA-3L on the left side, RA-3R on the right side) such that the pedestrian symbol on each sign is walking toward the centre of the road. On two-way roads, the signs are mounted back-to-back such that they appear the same from each approach.
		The <i>Pedestrian Crosswalk</i> overhead sign (RA-5) is white on black and is used to indicate the location of a pedestrian crosswalk in areas where shoulder mounted signs alone are not considered to be adequate. Two signs are installed for each crosswalk, centered over the approach lane. These signs are internally illuminated and also cast down-lighting positioned just ahead of the crosswalk area for each vehicular approach to illuminate pedestrians.

WARNING SIGNS

The Warning signs used for crosswalks in Nova Scotia are as follows:

		The <i>Pedestrian Crosswalk Ahead</i> sign (WC-2) is black on yellow and is typically installed where there is limited visibility of the crosswalk area or in advance of a crosswalk where overhead signs are used. Normally, only the WC-2R sign is installed on right side of the road such that the pedestrian symbol on the sign is walking toward the centre of the road. On one-way or divided streets, the WC-2L may also be installed on the left side or in the median.
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Criteria

“A complete street is one that adequately provides for all road users, including bicyclist, pedestrians, transit riders and motorists, to the extent appropriate to the function and context of the street. Knowing and understanding desire lines (i.e., the walking paths that pedestrians will choose from an origin to a selected destination) that are typically created by land use type and location, roadway cross section and geometry, and traffic control devices can lead to effective and safer management of vehicular and pedestrian traffic.”¹

A general criteria for all crosswalks can be summarized as follows:

- A marked crosswalk is deemed required where traffic volumes are so high that there are not enough gaps in the traffic stream to allow pedestrians to cross safely in a timely manner.
- Marked crosswalks are not installed at locations with restricted sight distance or in close proximity to signalized intersections.
- Mid-block crosswalks are installed only when absolutely necessary.

The committee developed a set of criteria which was used in this review, and the committee is recommending it be used by the Traffic Authority as a decision support tool going forward.

The **Transportation Association of Canada (TAC)** “*Pedestrian Crossing Control Guide*”, was referenced in the development of the criteria.

TAC is a not-for-profit membership association. The TAC does not set standards; establish regulations or work to influence government policy. The information provided in the Guide is not mandated requirements; it is recommended guidelines developed through the review of best practices.

The main objective of the guide is to promote uniformity across the country with respect to the approach used in the provisions of pedestrian crossing control. This is done through the development of a decision support tool to assist in the decision making process when:

1. Establishing the need for controlling the traffic to enable pedestrians to cross the roadway safely.
2. Identifying the type of traffic control device that would be most suitable for the location.

The TAC Guide provides a set of **seven guiding principles** to assist the decision-making process. **The goal is that when providing pedestrian crossing control, the professional will choose the device that meets all or most of these guiding principles.**

While safety of all road users is the paramount goal, professionals are often challenged to find **the balance among the guiding principles when designing the road systems.**

¹ TAC Pedestrian Control Guide 2012

It is recommended that the guiding principles be met during the decision-making process, while still taking into considerations the **priorities, values, and specific goals of each jurisdiction.**

7 - Guiding Principles²

Safety - This is the key objective in providing pedestrian crossing control and other supporting facilities and devices. It is fundamental that the road system protect pedestrians and other vulnerable road users by achieving a high level of compliance from drivers, bicyclists and pedestrians, and by minimizing pedestrian exposure to vehicular traffic. To address pedestrian control problems, it is important to understand their characteristics and the potential role of pedestrian crossing control devices in collision prevention.

Delay – Delay experienced by pedestrians attempting to cross the road should be carefully managed. As pedestrian delay increases, the likelihood of pedestrians making risky or non-compliant crossings also increases. This reduces the efficiency and safety of crossing for both pedestrians and vehicle occupants. Pedestrian delay increases as traffic volume increases because crossing opportunities become less frequent.

Equity – The demographics of the pedestrian population as well as the mix of road users at different time periods should be considered, and crossing facilities and control devices should be designed accordingly. As the population changes, a “design pedestrian” should be considered to ensure the accessibility of all road users and not only those with good visual, mental, and physical capabilities. The design pedestrian will determine the walking and crossing speeds for the planning and design of these facilities. Furthermore, establishing equal access to the system by providing for the movement of people as for vehicular traffic is fundamental.

Expectancy - The presence of a pedestrian crossing system should not violate driver expectancy, thereby increasing the likelihood of drivers responding to situations correctly and quickly. The crossing location and any waiting or crossing pedestrian should be clearly visible. In the event that driver expectancy is not met, driver workload and visual limitations may result in drivers not noticing a pedestrian until it is too late. The positive guidance approach should be used in design, considering driver limitations and expectations. This approach has four traits: primacy (signs are placed according to the importance of their information, and in such a way as to present the driver with information when and where it is essential); spreading (information is given in small amounts to reduce the information load on the driver); coding (color and shape coding of traffic signs); and redundancy (information is repeated)

Consistency - The approach to pedestrian crossing facilities and control should be consistent and uniform across the transportation system. Consistency helps ensure that installations and devices are recognized, comprehended, and used effectively by all road users.

² TAC Pedestrian Control Guide 2012

Connectivity - Effective crossing opportunities should be provided to ensure system connectivity for pedestrians, while considering driver workload and expectation, proximity to other crossings, and the safety of pedestrians. Facilitating connectivity between crosswalks and sidewalks, and/or trail networks involves understanding and monitoring “*pedestrian desire lines*”, which evolve as a function of land use, the location of pedestrian generators and attractors, and **proximity to existing crossing facilities**. (emphasis added)

“Pedestrian Desire Line: Preferred pedestrian travel routes based on convenience of movement from one location to another. These are affected by local land uses like homes, schools, parks, commercial establishments, and others.”

Pragmatism – Consider the practical issues or consequences associated with the provision of pedestrian crossing control. The pragmatic selection of pedestrian crossing control devices involves consideration of costs, effectiveness of the device in local conditions, ease of installation and maintenance of the device, particularly in winter, when maintenance due to snow and ice can be challenging. The professional must realize that when a device is provided it should be functional year-round, unless it is intended to be used only temporarily.

Local Criteria

The following charts list the local criteria used to help guide the assessment process to determine the need for a pedestrian crossing control. Each criteria has been assigned a letter or number. An explanation is provided for each criteria and the applicable “*guiding principle(s)*” is listed in **bold**.

The first chart lists criteria which may support a pedestrian crossing control, while the second lists criteria which may NOT support a pedestrian crossing control.

CRITERIA TO RETAIN/INSTALL A PEDESTRIAN CROSSING CONTROL

A.	Through highway joining sidewalks	Connectivity. Required to cross a street which is through highway (no Stop or Yield sign) to continue accessing the sidewalk. i.e. Rupert @ Agnew, Regent @ Agnew, Lusby St @
B.	Senior's facility	Equity. Recognition of increased mobility issues in seniors which may require additional time to cross a street, i.e. – Centennial Villa
C.	Youth facility	Equity. Children/youth are higher risk pedestrians. Locations designed/used for events for children/youth see an increased number of children/youth, along with an increase of vehicle traffic during events, which in turn increases the pedestrian crossing risk. (YMCA, Little League, Sponge Park, Splash Park)
D.	School Zone	Equity. Similar to C above. Significant pedestrian and vehicle volumes at start and end of school day. The "School Zone" may include more than the area within the school zone signage. Each school has been assessed to determine the area to be designated.
E	Event Site (within designated radius)	Safety. Significant pedestrian and vehicle volumes at locations where events are held can increase pedestrian risk. Locations considered include the Amherst Stadium, Curling Club, Little League field.

F	High vehicle volumes	Delay. Locations with the highest traffic volumes. Downtown core, South Albion St, Robert Angus Drive. High vehicle volumes can increase pedestrian delays.
G	Multi Lane or complex intersections	Safety. The more complex an intersection the more distractions for drivers and pedestrians. The more distractions the greater the risk for errors. Examples: 6 way stop @ East Pleasant/Croft. Robert Angus Dr @ Church. (3 lanes on Robert Angus Dr. flashing red light and stop signs.)
H	3 and 4 Way Stops to connect sidewalks	Connectivity. Crosswalks installed to join sidewalks. Must be sidewalk at each end. i.e. Hickman @ Cornwall, Cornwall @ Anson, Spring @ Church, Spring @ Willow.
I	Designated Downtown Zone	<p>Connectivity. Crosswalks in the downtown do meet the minimum pedestrian and vehicle volumes. While some crosswalks are less than 100 meters from another traffic control device, (traffic control device includes other crosswalks, and controlled intersections) the historical pedestrian desire lines support a need for system connectivity.</p> <p>Church @ Prince Arthur</p> <p>Church @ Victoria</p> <p>Victoria @ Lawrence</p> <p>Victoria @ Havelock</p> <p>Victoria @ TD Trust</p>

J	Traffic lights with Pedestrian Control Lights	Consistency. Crosswalks are installed at all locations with pedestrian control lights.
K	Pedestrian volumes (<i>15 adult units per hour or 100 over 7 hours</i>)	Consistency/Delay. The TAC guide provides a “ <i>Decision Support Tool</i> ” (DST) to assist in assessing whether a site is a candidate for a pedestrian crossing. The DST provides recommended minimums for pedestrian and vehicle volumes.
L	Vehicle volumes (<i>1,500 per day</i>)	Consistency/Delay. The TAC guide provides a “ <i>Decision Support Tool</i> ” (DST) to assist in assessing whether a site is a candidate for a pedestrian crossing. The DST provides recommended minimums for pedestrian and vehicle volumes.

CRITERIA TO REMOVE EXISTING OR DENY REQUEST FOR A PEDESTRIAN CROSSING CONTROL

1.	Crosswalk ends at curb. No sidewalk	Connectivity. Crosswalk that starts at a sidewalk but ends at the side of the road.
2.	Pedestrian volumes (<i>less than 15 adult units per hour or 100 over 7 hours</i>)	Delay. The TAC guide provides a “ <i>Decision Support Tool</i> ” (DST) to assist in assessing whether a site is a candidate for a pedestrian crossing. The DST provides recommended minimums for pedestrian and vehicle volumes.

3.	Vehicle volumes (<i>less than 1,500 per day</i>)	Delay. The TAC guide provides a “ <i>Decision Support Tool</i> ” (DST) to assist in assessing whether a site is a candidate for a pedestrian crossing. The DST provides recommended minimums for pedestrian and vehicle volumes.
4.	Proximity within 100 meters of another traffic control device.	Expectancy. The TAC guide recommends a minimum distance between 100 and 200 meters from a crosswalk to another traffic control device. A traffic control device includes a traffic signal or another pedestrian crossing control device.
5.	NOT within school zone.	Safety. Related to item D in the criteria for retention/installation. Special consideration for installing a crosswalk
6.	Mid-block crossing	Expectancy. Crossing on a through highway that is not at an intersection. Mid-block crossings are not recommended. Drivers tend to take note of intersections as there is an expectancy of possible vehicular or pedestrian traffic.
7.	Street being crossed is at an intersection with a through highway and has a Stop or Yield sign.	Consistency. There are a large number of intersections which have a through highway with either a ‘T’ intersection or a 4 way intersection. There is no requirement to have a crosswalk to cross the street that has the traffic control device unless other criteria exist, i.e. within a school zone, event site.

8.	Inconsistent with similar locations	Consistency/Expectancy. “The presence of a pedestrian crossing system should not violate driver expectancy thereby increasing the likelihood of drivers responding to situations correctly and quickly.
9.	Other crossing within reasonable proximity	Connectivity. When crosswalks are in close proximity to one another it may eliminate the connectivity need for one of the locations.
10.	Not a street. Entrance to private property or parking lot.	Consistency/Expectancy. Crosswalks are not installed at the entrances of parking lots or private property. Drivers would not expect a crosswalk at these locations and they would be inconsistent with the application within the Town.

Findings and Recommendations

FINDINGS

A total of 177 existing crosswalks were reviewed.

The following issues were identified:

1. Lack of consistency in the application of pedestrian crossings.
2. Some crosswalks actually compromise pedestrian safety.
3. There are locations without crosswalks which meet the criteria developed by the committee.
4. Several of existing crosswalks do not meet the criteria developed by the committee.

RECOMMENDATIONS

1. Removal of 67 existing crosswalks
2. Re-location of 1 existing crosswalk
3. Installation of 6 new crosswalks
4. Zebra style crosswalks to be utilized for all crosswalks within close proximity to a school.

CROSSWALKS FOR REMOVAL

#	Location	Comments
1	Spring Street @ Regent	1,2,5
2	Lusby @ Victoria	3,5,7,8
4	Victoria @ Mill	2,8,9
5	Terrace St. @ Victoria	2,3,5,7,8
7A	Lawrence @ LaPlanche St. (South side of intersection)	8,5
7B	Lawrence @ LaPlanche St. (North side of intersection)	1,2,5,6,8
8	Lawrence @ Erncliffe	1,2,5,8
9	Lawrence – Midblock by Shear Impressions	2,4,5,6,8
10	LaPlanche – Midblock approx. 30 ft north of Dale St.	2,5,6,8
11	Dale St. @ Eddy	2,3,5,7,8
12	Eddy @ Dale	1,2,3,5,8
13	Copp Ave. @ Victoria	2,3,5,7,8
14	Victoria @ Copp Ave.	2,5,8
28	Agnew @ Regent	2,3,5,7,8
30	Agnew @ Rupert	2,3,5,7,8
39	Queen @ Academy	1,2,7,8
44	Havelock @ Clifford	1,3,5,8,9
45	Clifford @ Havelock	2,5,7,8

#	Location	Comments
46	Havelock @ Belmont	1,2,5,8
47	Belmont @ Havelock	3,5,7,8
49	Agnew @ Havelock	2,3,5,7,8
52	Havelock @ Princess (North side only)	5,8,9
53	Princess @ Havelock	5,7,8
55	King @ Havelock	3,5,7,8
56	Ratchford @ Havelock	3,5,7,8
57	Ratchford @ Acadia	3,5,7,8
59	Acadia @ Four Father's Library	2,5,6,8
60	Prince Arthur @ Acadia (West side only)	2,5,8,9
61	Acadia @ Prince Arthur	2,4,5,7,8
63	Robie @ Church	3,5,7,8
64	Belmont @ Church	3,5,7,8
66	Clifford @ Church	3,5,7,8
69	Queen @ Church	3,5,7,8
71	Dickey @ Church	3,5,7,8
73	Beacon @ Church	3,5,7,8
80	Church @ East Pleasant (North side only)	1,3,5,8,9
83	Academy @ East Pleasant	2,3,5,7,8
84	Charles @ East Pleasant	2,3,5,7,8
89	Croft @ Spring X 2	2 Crosswalks. 1 on north side and 1 on south side of intersection

X 2		2,3,5,7,8
#	Location	Comments
95	Albion @ Spring	1,5,8
96	Queen @ Albion	3,5,7,8,
97	Albion @ Queen	1,2,5,8,
101	Ottawa @ South Albion	3,5,7,8
102	Admore @ South Albion	3,5,7,8
103	Edgewood @ South Albion	3,5,7,8
107	Clinton @ South Albion	2,5,7,8
119	Chamberlain @ Newton	1,2,5,8
121	Hickman @ Mission St. (North side only)	1,9
122	Mission @ Hickman (West side only)	1,3,9
127	Minto @ Hickman	2,3,5,7,8
128	Hickman @ Minto	2,4,5,9
129	Dundonald @ Hickman	2,3,5,7,8
139	Crescent @ Albion	3,5,7,8
147	Maple @ East Victoria	3,5,7,8
158	Acadia @ Victoria	5,7,8
160	Herbert @ Victoria	3,5,7,8
161/ 162	Private Entrance @ 122/131 East Pleasant	Former sight of Highland View Regional Hospital. 2,3,5,8,10
163	Entrance to Superstore @ South Albion X 2	5,8,10 1st is lane next to Tim Horton's. 2nd is entrance and exit lanes, main entrance by Mobil gas bar.

#	Location	Comments
165 X6	South Albion private property Entrances, Cumberland Honda, Old Bordertown, Wendy's/Tim Hortons	2 @ Cumberland Honda. 2 @ former Border Town building. 2 @ Tim Horton's 10

NEW CROSSWALKS

#	Location	Comments
86	Croft @ Beacon	C, E Little League field access.
87 X2	Beacon @ Croft	C,E Little League Field access.
166	Cornwall @ Anson	H
168	Dickie @ Rupert	H
n/a	Elmwood @ Willow (West side)	H

ZEBRA PATTERN

#	Location	Comments
16	Willow @ Entrance of EB Chandler School	School Zone
17	Willow @ Townend	School Zone
18	Entrance to ARHS and Geomatic Center @ Willow	School Zone
19	Entrance to ARHS @ Willow (Entrance to Bus Lane)	School Zone
20	Willow @ East Pleasant	School Zone
21	Donald @ Dickey (South Side)	School Zone
22	Donald @ Dickey (North Side)	School Zone
23	Entrance to EB Chandler @ Dickey	School Zone
32	Charles @ Dunlap	School Zone
33	Academy @ Dickey	School Zone
34	Dickey @ Academy	School Zone

35	Dickey @ Charles	School Zone
36	Charles @ Dickey	School Zone
37	Davison @ Queen	School Zone
38	Davison @ Spring	School Zone
39	Queen @ Academy	School Zone
40	Academy @ Queen	School Zone
41	Academy @ Spring	School Zone
42	Spring @ Havelock	School Zone
43	Havelock @ Spring	School Zone
65	Church @ Belmont	Dance Studio (Youth Events. Through highway)
121	Hickman @ Mission	School Zone (South side of intersection only North side crosswalk recommended for removal.)
122	Mission @ Hickman	School Zone (East side of intersection only. West side crosswalk recommended for removal.)
135	Park @ Highfield	Bright Beginnings daycare