

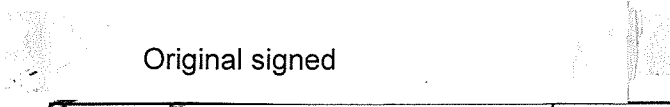
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PO Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Halifax Regional Council
November 16, 2004

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY: Original signed


Ken Reashor, P.Eng., Traffic Authority

DATE: November 4, 2004

SUBJECT: Crosswalk and Crossing Guard Criteria and Approvals

INFORMATION REPORT

ORIGIN

September 7, 2004 Halifax Regional Council meeting, item 10.2.2.

BACKGROUND

Councillor McInroy requested a staff report that addresses the criteria required for the evaluation and approval of crosswalk installations and the evaluation and approval process associated with crosswalk guards. The Councillor noted that currently there are two different processes: the manner in which the pedestrians are counted is done differently with respect to the installation of crosswalks than it is with the evaluation for crosswalk guards. Councillor McInroy noted there may be some other criteria as well that needs to be harmonized. In addition to the actual statistics, he also asked that staff identify a process that would allow some flexibility when one criterion is greatly exceeded while another is not quite met so it would not necessarily mean that the approval is not granted. Councillor McInroy stated the matter that brought this issue to his attention was the removal of a crosswalk guard on Deerbrooke Drive in Cole Harbour, which is heavily used by children and located on a turn in the street.

It was moved by Councillor McInroy and seconded by Councillor Cooper that staff review and provide a report regarding crosswalk and crosswalk guard criteria and approval processes, and, further that the matter of the reinstatement of the crosswalk guard at Deerbrooke Drive be referred to the Traffic Services Review Committee for an early reconsideration of the removal of the guard and further that the RCMP be asked to continue to monitor that crosswalk until the Committee deals with the matter. Motion was put and passed unanimously.

DISCUSSION

The evaluation and approval of marked crosswalk installations in the Core Service Area of HRM is based on the Transportation Association of Canada (TAC) "Pedestrian Crossing Control Manual" warrant model which the HRM Traffic Authority formally adopted for use in February 2004. An Information Report (attached) entitled "Traffic Warrants for Crosswalks" was submitted for the Halifax Regional Council meeting of February 17, 2004 and was recently discussed at a presentation to Council on October 5, 2004.

The criteria used in determining the assignment of school crossing guards in HRM is discussed in the attached Information Report entitled "School Crossing Guard Criteria" which was originally submitted to Council at its November 5, 1996 meeting. The information in this report was derived from a draft version of what eventually became the TAC Pedestrian Crossing Control Manual.

The criteria for the installation of marked crosswalks in the HRM Core Service Area and the criteria for the placement of school crossing guards in HRM are both presently contained within the TAC Pedestrian Crossing Control Manual. Although the criteria are somewhat different, they are not mutually exclusive and there is no requirement that they be harmonized because the suggested minimum school crossing criteria for assigning adult crossing guards counts the number of elementary school children needing supervision and not the total number of pedestrians crossing. Minimum traffic volumes for crossing guards are given in the TAC manual as a range from 300 to 500 vehicles per hour during the peak pedestrian periods, whereas minimum school crossing flows may vary from 20 to 60 children per hour. This allows different jurisdictions across Canada to determine which level of service they are prepared to accept, while still maintaining some uniform national standards. A large municipal unit with higher traffic volumes may choose to use a higher minimum, while smaller municipalities may decide that a lower minimum is economically feasible. Regardless of which minimum is ultimately chosen, it is important to apply the accepted criteria consistently and fairly so that the decisions are defensible.

Deerbrooke Drive - Crosswalk Guard

With regard to referring the matter of the reinstatement of the crosswalk guard at Deerbrooke Drive to the Traffic Control Review Committee for reconsideration, this issue does not qualify for review by that committee. The Terms of Reference for the Traffic Control Review Committee as presented to Regional Council in an Information Report on January 28, 2003 refer specifically to Traffic Authority decisions dealing with traffic control devices. The existing midblock marked crosswalk

on Deerbrooke Drive at the walkway was installed by the Province in 1984. The decision to add or remove a crossing guard comes under the jurisdiction of the Halifax Regional Police and not the Traffic Authority.

BUDGET IMPLICATIONS

There are no budget implications.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

There are no recommended alternatives.

ATTACHMENTS

Copy of Information Report "Traffic Warrants for Crosswalks"
Copy of Information Report "School Crossing Guard Criteria"

Additional copies of this report, and information on its status, can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by:



Original Signed

Vaughn Perrin, Traffic Analyst, 490-4822

Halifax Regional Council
November 5, 1996

TO: Mayor Fitzgerald and Members of Regional Council

RECEIVED


OCT 14 1996

SUBMITTED BY:

K. R. Meech, Chief Administrative Officer

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION SERVICES
TRAFFIC & PLANNING

Original signed

 Vincent J. MacDonald, Chief of Police

DATE: October 31, 1996

SUBJECT: SCHOOL CROSSING GUARD CRITERIA

INFORMATION REPORT

ORIGIN

The original request for this information was raised during the 1996/97 Operating Budget review by Councillor Hendsbee on August 23, 1996.

DISCUSSION

The criteria used for the establishment of a school crossing guard assignment is drawn heavily from a **Working Paper of the National Committee on Uniform Traffic Control** and, more specifically, from that section of the document dealing with "Pedestrian Crossing Control". The following are excerpts from that document which enunciate the concerns and considerations in this regard:

"School crossing protection is a very sensitive topic; parents frequently demand various protection measures that are not warranted and that tend to lessen the respect for controls that are warranted. One way to avoid serious complaints is to develop a uniform procedure for studying and analyzing apparent hazards at school crossings. This procedure can be used to determine the best type of protection and traffic controls required to meet the particular crossing situation.

Factors to be considered for the adult crossing guard program include traffic volume, turning movement patterns and volume, pedestrian volume, traffic control at the crossing location, urban or rural surroundings, speed limits, roadway class, accident history, number of lanes, divided or undivided highway, crosswalk width, proportion of heavy commercial vehicles, horizontal or vertical curves, environmental conditions and lighting conditions (ambient and artificial)

Generally, pedestrian delay time between adequate gaps may be considered excessive when they are less frequent than one per minute. Fewer gaps than this represent an unsatisfactory situation

Adult crossing guards are typically considered for use on arterial roadways at uncontrolled crossings, at stop sign controlled intersections and at traffic signal controlled intersections. The minimum traffic volumes may range from 300 to 500 vehicles per hour during the peak pedestrian periods, whereas minimum school crossing flows may vary from 20 to 60 children per hour.

The following criteria are suggested by the **Institute of Transportation Engineers** to determine if a particular location requires the use of an adult crossing guard. If a particular location needs control, the use of an adult crossing guard should be considered if:

1. Adult crossing guard is more feasible and economical than either a pedestrian grade separation structure or a traffic control signal specifically installed to handle the problem.
2. There are special hazards at certain signalized locations that can be properly handled only by adult supervision. These hazards include unusual conditions such as extreme fog, complicated intersections, heavy vehicular turning movements or high vehicular approach speeds.
3. A change in school routes or school districts is imminent, thus requiring protection at the location for a limited time.

When this form of control is selected to provide adequate gaps at school crossing, the following procedures could be adopted by responsible officials:

4. Adult crossing guards should be assigned to school crossings only after a study has indicated a need. The great demand for this type of control makes it essential that this procedure be strictly followed if crossing guard assignments are to be held to a minimum according to need.
5. The local traffic enforcement agency may be available for the training of adult crossing guards.

6. Adult crossing guards should not relieve children of full responsibility at school crossings. It is essential that crossing guards take advantage of their assignment to properly instruct and develop in children the ability to take care of themselves at any pedestrian crossing.

7. A police officer should protect school crossings only when no other suitable means can be employed. In most cases, police officers are in short supply, and their use for school crossing protection diverts them from other important assignments. If police officers must be used, such use should be only temporary until another solution to the problem can be developed.

Traffic signal control for school crossings is not the only remedy nor is it necessarily a safe solution. While traffic signals can effectively assign intersection right-of-way and promote the safe, orderly movement of both pedestrians and vehicles, they may not be practical in all situations, moreover, the response of various young pedestrians (kindergarten to third grade) to traffic signals is frequently so inadequate that it creates a hazard rather than a solution. In these cases, adult crossing guards should be used with the traffic signal control. Although adult guards are primarily assigned to assist elementary age children going to and from school, this should not preclude the use of adult guards for junior high or high school where dangerous traffic situations exist or where the criteria for the adult guard is met.”

The following criteria is utilized in making a decision in establishing a school crossing guard point:

- ▶ geographical conditions; number of traffic lanes, visibility of intersection, etc.
- ▶ accident experience and traffic enforcement statistics pertaining to location being considered
- ▶ overall general traffic flow
- ▶ traffic volume
- ▶ age and volume of students
- ▶ existing traffic signage
- ▶ traffic speeds
- ▶ if appropriate, local police concerns of location (R.C.M.P. and HRPS)
- ▶ input from Traffic and Planning or Department of Transportation
- ▶ budget availability.

As can be noted in the document, there are a number of variables involved in the assessment of any requests for a crossing guard and, although they are varied, it is the opinion of staff that, if each location is properly reviewed, a clear recommendation can be forwarded.

BUDGET IMPLICATIONS

If the numbers of school crossing guards remain at their existing level there would be no impact on the budget; however, it should be noted that, if there are future requests for additional guards, those costs can vary throughout the various communities within the Region in amounts between \$4,000 to \$8,200 per additional guard.

Further information regarding the contents of this report may be obtained by contacting Inspector David C. Murphy, Police Services, at 490-5042. For additional copies or for information on the report's status, please contact the office of the Municipal Clerk at 490-4210 (Tel) or 490-4208 (Fax).

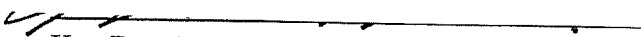


PO Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Halifax Regional Council
February 17, 2004

TO: Mayor Kelly and Members of Halifax Regional Council

Original Signed

SUBMITTED BY: 
Ken Reashor, P.Eng., Traffic Authority

DATE: February 6, 2004

SUBJECT: Traffic Warrants for Crosswalks

INFORMATION REPORT

ORIGIN

Halifax Regional Council meeting of August 19, 2003, item 10.3.6.

BACKGROUND

Former Councillor Diana Whalen requested a staff report to review the Transportation Association of Canada's (TAC) guidelines for marked crosswalk installation as well as what other large municipalities are doing, to look specifically at updating HRM's standards to better serve the public need. Former Councillor Whalen requested that the report specifically address marked crosswalks in proximity to bus stops, parks and schools, and seniors' residences.

DISCUSSION

Providing marked crosswalks has traditionally been one measure used to facilitate pedestrians' right to cross roads safely and without unreasonable delay. However, there has always been considerable controversy regarding whether providing marked crosswalks will increase or decrease pedestrian safety at crossing locations that are not controlled by a traffic signal or stop sign. Many pedestrians consider marked crosswalks as a tool to enhance pedestrian safety and mobility. They view the markings as proof that they have a right to share the roadway, and in their opinion, the more the better. Many people do not understand the legal definition of a crosswalk and think that there is no crosswalk unless it is marked. Pedestrians may think that the driver will be able to see the crosswalk markings as well as they do, and they assume that it will be safer to cross between the white crosswalk lines. There are still numerous drivers who seem to believe that they don't have to stop unless pedestrians are directly in front of their vehicle, between two white lines on the pavement.

Given that from a practical perspective it is impossible to mark crosswalks at every intersection, most jurisdictions use some form of criteria to determine which crosswalks will be marked and which will not. The criteria ranges from marking only locations that receive numerous complaints (public pressure) to fairly elaborate calculations based on number of pedestrians, age, ability, vehicle volume, speed, width of roadway, length of pedestrian delay, distance to nearest "protected" crossing area, etc. The intent of establishing objective guidelines is generally to provide a means of determining the appropriate level of protection required and ensure that available resources are allocated to the most critical locations in an equitable manner.

The table on page 5 summarizes some of the criteria used in other jurisdictions. The TAC Pedestrian Crossing Control Manual is used mainly in British Columbia, where it was originally developed, as well as several smaller municipalities across the country. Edmonton, Calgary, and Winnipeg each have their own warrants. The Ontario Ministry of Transportation Pedestrian Crossover Warrants is used by most municipalities in that Province.

The N. S. Motor Vehicle Act assigns sole responsibility for locating marked crosswalks to the Traffic Authority; Section 90(1) states:

"The traffic authority may 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 his opinion, there is particular danger to pedestrians crossing the highway, and at such other places as he may deem necessary."

Shortly after amalgamation, in the absence of any Provincial or national numerical guidelines, the newly appointed Traffic Authority of the day decided to adopt a simple numerical crosswalk warrant based on the number of pedestrians counted crossing in the busiest hour and the average daily volume of traffic. Both numbers were relatively easy to obtain; which was important, given the large number of requests for new marked crosswalks over a very large area and the limited staff available to collect the data. The warrant was adapted from a similar system used in the City of Halifax for 20 years and was chosen after an extensive survey of other Canadian jurisdictions. The TAC warrant

had not yet been accepted by the "National Committee of Uniform Traffic Devices" and did not appear likely to be, considering that it had been proposed eight years earlier.

When the TAC warrant model was finally officially approved by the Chief Engineer's Council in 1998 for use in Canada, the HRM Traffic Authority decided to wait for the Province to formally adopt it for use in Nova Scotia. In 1999, the Provincial Road Safety Advisory Committee (RSAC) created a Crosswalk Safety Sub-Committee comprised of representatives of Provincial, Municipal and private sector organizations involved in pedestrian safety. The mandate of the Crosswalk Safety Sub-Committee was to examine existing legislation, regulations, and traffic engineering practices in Nova Scotia and other jurisdictions and make recommendations related to crosswalk safety from a province-wide perspective. While several recommendations of the Sub-Committee have been implemented and the Sub-Committee continues to evaluate new design, legislation and educational program proposals, the Sub-Committee has so far been unable to reach a consensus on the use of the TAC warrants in the Province of Nova Scotia.

In view of the unlikelihood of Provincial crosswalk warrants being implemented in the foreseeable future and in consideration of Council's expressed wish to revise the criteria used by the HRM Traffic Authority in making decisions regarding the installation of pedestrian traffic control devices, the Traffic Authority has decided to adopt the TAC warrant model as contained in the Pedestrian Crossing Control Manual for use in the HRM Core Service Area.

Warrants for installation of pedestrian related traffic control devices have traditionally been based on vehicular and pedestrian volumes. The basis of the TAC warrant model is the principle that pedestrian delay is the most critical factor in determining the need for traffic control improvements. As pedestrian delay is difficult and time consuming to measure, the TAC warrant instead uses the concept of availability of crossing opportunities for pedestrians. These crossing opportunities are a function of the roadway width, the vehicular volume and the vehicular arrival pattern. Pedestrian demand, ability, and geometric features are also factored into the warrant model. While pedestrian accidents are not included as a direct component of the warrant model, a review of the accident history is conducted as part of the evaluation study. Warrants employed by other jurisdictions were considered and not adopted because they required long periods of manual counting which was not practical given HRM's limited resources for data collection.

It is expected that the adoption of the TAC warrants will result in more marked crosswalks on busy roadways because of the lower threshold of minimum pedestrian volumes required (20 instead of 50 crossings per hour). The use of age and ability factors (called Equivalent Adult Units in the TAC warrant) will also tend to increase the number of marked crosswalks installed at locations used most often by children, seniors or disabled persons.

Adopting a new set of warrants which results in more marked crosswalks will not necessarily result in fewer pedestrian collisions or lessen the public pressure for marking locations which still do not meet the revised standards. It will still be necessary to use technical merits rather than public sentiment to determine the proper placement of crosswalks.

Warrants for traffic control devices, (whether traffic signals, all-way stop signs or marked crosswalks) are not immutable laws etched in stone. Warrants are simply guidelines for best practice

based on extensive research and experience that enable decision makers to objectively evaluate whether or not a particular traffic control device would be an improvement or a detriment. While a Traffic Authority appointed pursuant to the N. S. Motor Vehicle Act (MVA) is under no legal obligation to use any particular warrant, he/she must exercise professional judgement in deciding which traffic control devices are most appropriate for use, and must be always prepared to defend in court any decision which strays from generally acceptable practice.

BUDGET IMPLICATIONS

There will be increased costs associated with the installation and maintenance of additional marked crosswalks, although the specific amount has not been determined at this time.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

There are no recommended alternatives.

Additional copies of this report, and information on its status, can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by: Ken Reashor, P.Eng., Acting Manager, Traffic & Transportation Services, 490-6637

	Pedestrian Equivalent Factors	Minimum Vehicular Volume Required	Minimum Pedestrian Volume Required	Minimum Distance to nearest crosswalk
HRM: Marked Crosswalk Criteria	No	6000 vehicles per day (or 4000 vehicles per day for school crossing guard locations)	50 pedestrian crossings per hour	200 m
TAC: Pedestrian Crossing Control Manual	Yes child x 2 senior x 1.5 disabled x 2	n.a. (uses "crossing opportunities per hour" which vary according to traffic arrival patterns and roadway width)	> 20 Equivalent Adult Units (EAU) per hour	200 m
Ontario: Ministry of Transportation Pedestrian Crossover Warrants	Yes child x 2 senior x 2 disabled x 2	2000 vehicles per 12 hour period (generally 7 am - 7 pm)	> 200 EAU per 8 hour period (generally 7 am - 7 pm) plus at least 75 crossings were delayed > 10 seconds	215 m
Edmonton: Pedestrian Control Guidelines	yes child x 2 senior x 2	> 400 veh/hr for basic crosswalk > 800 veh/hr for zebra markings > 900 veh/hr for flashers only installed on arterial or collector roadways	> 10 EAU per hour for basic crosswalk > 20 EAU per hour for flashers	200 m
Calgary: Guidelines for Crosswalk Installations at Uncontrolled Intersection Legs	yes child x 1.5 senior x 1.5	1000 vehicles per day	>7 EAU per hour for volumes \geq 6000 v.p.d. > 20 EAU per hour for volumes \geq 4,000, \leq 6000 v.p.d. > 60 EAU per hour for volumes \geq 2000 \leq 4000 v.p.d.	200 m
Winnipeg: Regular Pedestrian Corridor Warrant	yes seniors x 2	> 200 vehicles per hour in peak period	> 300 EAU per 8 hour period, of which at least 100 crossings delayed > 10 seconds	n. a.

