

SER-009-021

Strathcona County
Municipal Policy Handbook

Installation of Traffic Signals and Pedestrian Crossings

Date of Approval by Council: 04/16/91; 06/12/2007 Resolution No. 325/91; 526/2007

Lead Role: Chief Commissioner Replaces: N/A

Last Review Date: March 8, 2011 Next Review Date: 03/2014

Administrative Responsibility: Engineering & Environmental Planning

Special Notes: Cross Reference with Policy SER-009-017, Traffic Control Devices

Policy Statement

Traffic signals and pedestrian crossing facilities will be provided to enhance operational and safety service levels at locations where an evaluation indicates that the devices are appropriate and beneficial.

Definitions

- A. Institute of Transportation Engineers (ITE): An international educational and scientific association of transportation professionals who are responsible for meeting mobility and safety needs. ITE facilitates the application of technology and scientific principles to research, planning, functional design, implementation, operation, policy development and management for any mode of transportation.
- B. Manual of Uniform Traffic Control Devices: The Manual of Uniform Traffic Control Devices for Canada (MUTCDC), published by the Transportation Association of Canada (TAC) is the principle guiding reference for installing traffic control devices. Conformance with that document and ancillary TAC publications ensures uniformity across Canada.
- C. Traffic Control Device: A traffic control device is a sign, signal, pavement marking or other device placed upon, over or adjacent to the road, by a public authority or official having jurisdiction.

Guidelines

- A. The Role of Guidelines and Warrants
 - 1) Guidelines provide information and background to assist in the decision making process and are necessarily general because they cannot cover all site-specific conditions. Warrants are established by nationally recognized engineering references and local/regional practice and attempt to quantify site characteristics so that a site evaluation can be compared with threshold levels to ensure consistent and appropriate application.
 - 2) Reference to guidelines and warrants is the initial step in the evaluation process. Within any decision process there will always be competing alternatives that must be considered to arrive at a "best" solution. Guidelines and warrants are an important part of the decision process but are not intended to be a substitute for good engineering judgement. The fact that warrant thresholds for a particular traffic control device are met is not conclusive justification for installation of the device, and vice versa. Where the word "warranted" or the word

"unwarranted" is used in this policy, the decision making philosophy will be as described in this sub-section.

- 3) Road function and classification will be considered during the process of traffic signal and pedestrian crossing evaluation to ensure an appropriate balance of through traffic and access accommodation. TAC guidelines will be referenced.

B. Unwarranted Devices

- 1) Installation of an unwarranted device is generally not recommended unless an engineering assessment indicates that the device can provide a significant measurable benefit in terms of efficiency and/or safety. Caution must be exercised when evaluating the need for new or upgraded facilities where warrant criteria have not been reached. The practice of installing unwarranted devices can:
 - a) Compromise the measurable criteria and justification for other warranted installations,
 - b) Lead to a dilution of respect for warranted facilities,
 - c) Detract from the importance of truly warranted & valuable installations,
 - d) Needlessly reduce efficiency of the transportation network,
 - e) Potentially have a negative impact on safety,
 - f) Incur considerable expense with little or no benefit, and
 - g) Misplace scarce capital away from locations that need it the most.
- 2) In addition, a proliferation of unwarranted pedestrian facilities can increase risk and have a negative impact on pedestrian safety as overuse can cause motorists to become complacent and fail to recognize the importance of warranted devices. Driver recognition of potential risk is critical at high volume / high activity pedestrian crossings and crossings with sightline restrictions, because pedestrians may make the assumption of driver attentiveness when entering the crossing.

C. Traffic Signal Installation

Traffic signals may be installed when warranted, as determined through a professional review of industry standards, guidelines and best practices.

D. Pedestrian Crossing Installation

Pedestrian crossing facilities may be installed or upgraded when warranted as per the "Strathcona County Pedestrian Crosswalk Implementation Warrant Table" (Attachment A). Additional guidance will be derived from the TAC "Pedestrian Crossing Control Manual" and associated ITE publications and recommended practices.

Procedures

A. General

- 1) Requests for Traffic Signals and Pedestrian Crossings

Requests from Council, Councillors and/or members of the public or other stakeholders for new or augmented devices, or for modifications to existing devices, will be reviewed by Engineering and Environmental Planning and evaluated in the context of this policy and where appropriate, discussed with the community at large, school authorities, other civic and external agencies,

and Council prior to implementation or other action. The placement of traffic signals and pedestrian crossing control devices often involves competing alternatives and differing perspectives that must be considered and rationalized.

Requests from members of the public will be copied to the Ward Councillor as information.

2) Authority for Changes to Existing Devices

Proposals to change or augment existing devices will generally be approved and erected by direction of the Manager of Engineering and Environmental Planning, but will be referred to Council when:

- a) there is a history of public or Council involvement in recent times,
- b) the Department can foresee that the proposal will have a severe adverse impact on another segment of the community,
- c) such changes lie outside the general guidance provided by this policy, or
- d) a resident, taxpayer or local interest group requests that the Department refer the matter to Council in the event that normal process has failed to result in a mutually satisfactory resolution.

In the event that a proposal is referred to Council, a recommendation will be made by the Manager of Engineering and Environmental Planning along with an explanation of alternatives including the merits and drawbacks of each alternative. Council may consider the recommendation and alter it as deemed appropriate.

3) Removal of Existing Devices

Where a control device no longer fulfills a need, or the device contravenes the intent of this policy, consideration will be given to removal or replacement with an appropriate device as the situation dictates.

Where removal of a device is expected to create significant public response, the item will be referred to County Council.

Unwarranted and nonconforming devices will be removed as funding allows or in conjunction with a roadway improvement project when feasible.

4) New Technologies

Review and evaluation of new technologies will be the responsibility of Engineering and Environmental Planning. New technologies that have been shown to improve safety and/or efficiency will be considered for new or retrofitted installations as they become available, cost-effective and practical to implement.

B. Traffic Signals

1) Monitoring

Engineering and Environmental Planning will monitor existing unsignalized intersections on a regular basis to ensure that existing control provides an acceptable level of service and safety.

Priority work sheets will be prepared for each intersection under consideration for new signals

using the format outlined in the Transportation Association of Canada (TAC) Traffic Signal Warrant Handbook. When intersections approach the warrant threshold for signal installation and engineering judgement indicates that traffic signals are appropriate, an item will be brought forward in the budget process for County Council approval.

2) Operation

Engineering and Environmental Planning will monitor existing signalized intersections on a regular basis to ensure that signal sequences and timings maximize the objectives of level-of-service, efficiency, safety, and progressive flow between adjacent signals.

To facilitate the maximizing process, traffic signal timing patterns will be varied over the course of the day to reflect the different travel patterns. Likewise, coordination of traffic signal timing plans between adjacent signals will be optimized, and varied over the course of the day, to promote progressive flow in the peak hour direction during peak hours, and to promote adequate progression in both directions during off-peak hours.

Good two-way progression along an arterial road is generally difficult to attain due to the relationship between signal spacing, signal sequencing, cycle times and operating speed. The signal spacing that facilitates two-way progression is roughly twice the distance needed to provide adequate access to adjacent lands, and that relationship is further confounded by complex signal sequencing and the accompanying reduction in arterial green time to facilitate multi-phase signal operation.

Interconnection of traffic signals to build on the existing communication network will be introduced in conjunction with roadway construction and improvement projects.

Ongoing operation, maintenance, repair and upgrading of traffic signals will be the responsibility of the Engineering and Environmental Planning Department. Routine maintenance will occur twice annually, repair will occur as required but usually as a result of damage caused by third-parties, natural events or equipment failure, and upgrading will generally be triggered by the introduction of new technologies, new standards or aging of existing infrastructure.

C. Pedestrian Crossings

1) Monitoring

Engineering and Environmental Planning will monitor high pedestrian activity crossings on a regular basis or as requested by citizens and others to ensure that the appropriate level of protection is provided and that improvements are proposed through the budget process when warranted and deemed appropriate.

2) Operation

Engineering and Environmental Planning will establish and introduce operating parameters at pedestrian crossings that recognize local practice and conform to ITE and TAC standards.

Ongoing operation, maintenance, upgrading and repair of signalized pedestrian crosswalks follow the process for signalized intersections. Maintenance of signed and marked crosswalks is the responsibility of Transportation and Agricultural Services.

Attachment A

**STRATHCONA COUNTY PEDESTRIAN CROSSWALK
IMPLEMENTATION WARRANT TABLE**

Number of Pedestrians (Ped/Hr)	Number of Vehicles (Veh/Hr)	Cross Product (Ped/Hr x Veh/Hr)	Level of Traffic Control Warranted
>20	>25	>6,000	Signed Crosswalk
>40	>200	>25,000	Flashing Amber pedestrian crossing
>60	>400	>50,000	Red/Amber/Green pedestrian half-signal

Note: Each of the criteria (Ped/Hr., Veh/Hr., and Ped/Hr. x Veh/Hr.) must be met to justify a specific level of traffic control. Good engineering judgement is intended to compliment the initial warrant evaluation.