

July 3, 2012



City Council Committee Report

To: Mayor & Council

Fr: Marco Vogrig, Municipal Engineer

Re: Main Street South Pedestrian Crosswalk – McClellan Avenue (at Library)

Recommendation:

THAT the City adopt Option 1: Remove the existing uncontrolled concrete crossing at Main Street adjacent to the Library thereby allowing pedestrians to cross at their own risk at this location when it is safe to do so as per the Highway Traffic Act.

Background:

In 2008 as part of the Downtown Revitalization project that saw the reconstruction of Main Street South, an uncontrolled concrete crosswalk was installed across Main Street South at the Library easterly to McClellan Avenue. Since the installation of this crosswalk the City has received varying levels of complaints of near misses and conflicts between pedestrians and vehicles at this location. As of December 2010, Ontario Standards and Guidelines for pedestrian crosswalks have been developed and published through the Ministry of Transportation. This document is known as the Ontario Traffic Manual (OTM) Book 15 Pedestrian Crossing Facilities and has been referenced by the writer to review the options for pedestrian facilities as they apply in an Ontario setting and to be consistent with the Ontario Highway Traffic Act (HTA). A copy of the OTM Book 15 is attached for your use as this report will be referring to sections of the manual. Sections 1 – General Definitions, 2 – Legal Documents and 3 – Pedestrian Crossing Devices of OTM Book 15 are relevant for the purposes of this issue and report.

Section 1 – General Information:

- **P.3 – 1.3.2 Right-of-Way Conflict Resolution:**

Indicates that pedestrian crossing control must be consistent with the HTA and therefore devices, signage and systems need to follow OTM Book 15 and the HTA in order to be enforceable.

- **P.4 - 1.3.4 Factors Influencing Safety;**

Table 1 of this clause provides an outline of factors to be considered for pedestrian crossing treatments. These eight factors form the basis of what

needs to be included in a review of what systems and alternatives should be considered for implementing a pedestrian facility.

- **P.7 – 1.5 – Classification of Types of Pedestrian Treatments:**

This clause indicates three types of pedestrian facilities, namely, Uncontrolled Crossing, Controlled Crossing and Physically Segregated Facility. The crosswalk in question is classified as an “Uncontrolled Crossing”, and is further described and defined in OTM Book 15, Section 2 – Legal Requirements.

Section 2 – Legal Requirements:

- **P.11 – 2.1.1 Categories of Pedestrian Crossings:**

This clause defines both controlled and uncontrolled crossings and provides details relating to both in Table 3. As per this table, the current crosswalk is still considered an uncontrolled crossing as it is a “Marked crossing (at intersection in the absence of a STOP or YIELD sign)”. The crosswalk has white and black pedestrian signs that indicate to drivers that pedestrians may be using this area to cross the street “where pedestrians must wait for safe gaps in traffic, sufficient for them to cross the roadway, prior to attempting to enter the roadway”. This section also provides details related to systems that constitute controlled crossings as per Table 4 on page 12, including Traffic Control Signals, Pedestrian Crossover, Stop Sign, Yield-Right-of-Way Sign and School Crossing Guard.

- **P.14 – 2.1.2 Pedestrians’ Rights and Responsibilities:**

This clause explains and defines, as per the HTA, pedestrians can, in the absence of statutory provisions or bylaw, cross a street at any point but may only do so in a safe manner and can be held responsible if a collision with a vehicle occurs. Secondly, they are to exercise care to avoid a collision with a vehicle even when they lawfully perform a crossing and thirdly, pedestrians must walk within a crosswalk at a signalized intersection.

Section 3 – Pedestrian Crossing Devices:

- **P.15 – 3.1 Overview for Planning for Pedestrian Crossing Facilities**

This clause suggests consolidating the desired paths of pedestrian crossings to limit the number of conflict points and increase pedestrian safety. The current layout of Main Street South has a traffic signal controlled intersection and crosswalk at First and Main which is approximately 60 metres south of the crosswalk in question. The closeness of this controlled crosswalk is important as it dictates what type of control options can be instituted at the problem crosswalk.

- **P.16 – 3.1.1 Pedestrian Crosswalk:**

A definition of a crosswalk according to the HTA is provided in this clause with a reiteration of pedestrian responsibility at an uncontrolled crossing to “wait for gaps in vehicular traffic before crossing.”

- **P.16 – 3.1.2 Decision Process for Consideration of Traffic Control Devices**

Figure 2 on page 17 illustrates an example of a process that identifies the decision making criteria that should be used in determining crossing controls.

On page 19, Figure 3 and 4 illustrate pedestrian volumes and pedestrian delay criteria used to justify if full traffic signals are warranted at an intersection that would incorporate pedestrian signals. In looking at potential pedestrian crossing events it is doubtful if these numbers would put either graph into the gray “Justified Zone”.

- **P.20 – 3.2.1 Full Traffic Control**

As mentioned in the commentary associated with 3.1.2 above, there is the “Justification 6 – Pedestrian Warrant” for installing a fully signalized intersection should those criteria be met. However, it is unlikely that the number of pedestrian crossings and associated delays, in addition to vehicle volumes, would trigger this type of fully signalized intersection. Also, OTM Book 12 – Traffic Signals is referenced in OTM Book 15. It has been noted in Book 12 Clause 3.7, “a distance of 215 m between signalized intersections will usually be sufficient to allow motorists to recognize and react to each device, but not sufficient to provide good coordination”. In other words, it would not be good engineering practice to install an additional set of traffic signals on Main Street at McClellan Avenue due to the close proximity of signals currently installed at First Street South and Second Street South. Therefore, full traffic signals should not be considered for this intersection.

- **P.27 – 3.2.2 Pedestrian Signal (IPS and MPS)**

An Intersection Pedestrian Signal (IPS) is described and is similar to the traffic signals that are currently installed at Main Street and First Street South. The difference for the installation at Main and First is there are two sets of signals as opposed to only the one set as depicted in Figure 9 on page 27 of Book 15. The criteria to determine if an IPS is a suitable solution for pedestrian crossing are the same as those outlined for a full traffic signal installation based on pedestrian volume and associated pedestrian delays in addition to traffic volumes and lastly on the proximity of other signalized intersections. Therefore, it is not recommended to utilize an IPS at the Main and McClellan intersection for the same reasons as outlined for a full signalized intersection.

Mid-Block Pedestrian Signals (MPS) are also described in this clause, but this system does not apply to the Main and McClellan location as this is considered an intersection and not a midblock condition.

- **P.30 – 3.2.3 Pedestrian Crossover**

The Pedestrian Crossover (PXO) type of crosswalk is similar to those being used in Winnipeg. These crossings are pedestrian activated having flashing amber beacons, a back-lit overhead X sign suspended over the centre of the roadway and provides illumination over the entire length of the crosswalk. In addition, there are specific signage requirements in identifying the PXO. Table 6 on page 30 outlines this specific facility.

Page 31 lists the criteria related to PXO installations and two criteria make the use of a PXO unacceptable for use at the Main and McClellan intersection crosswalk. Specifically, a PXO cannot be within 200 m of another signal protected pedestrian crossing (in this case only 60 m from First and Main). Secondly, parking and other sight obstructions are prohibited within 30 m of the crossing. Therefore, a PXO cannot be used at this intersection.

- **P.33 – 3.2.4 Stop Controlled or Yield Controlled Intersections**

Book 15 comments on the use of stop and yield signs as methods to control vehicle movement at an intersection as these regulatory signs require motorists to give the right-of-way to pedestrians at the sign locations. Book 15 references OTM Book 5, that describes the use of regulatory signage and as such, it indicates that stop signs used in an “all-way” stop configuration (i.e. stop signs for both north and south bound traffic on Main at the intersection of McClellan should not be considered “on roads where progressive signal timing exists” which is the case on Main Street with the traffic signals located at First Street and at Second Street being coordinated. Therefore, the installation of “all-way” stop signs for north/south bound traffic on Main at McClellan, whereby traffic would be required to stop 24/7, and for the limited number of pedestrians using this crossing, it would not be good engineering practice to restrict traffic flow in this manner.

Yield signs are also mentioned as an option, but they are more suited to merging traffic movements and in this case there are no merging traffic flows related to the crosswalk in question.

- **P.45 – 3.3 Uncontrolled Pedestrian Crossing**

It would appear that controlled crossing options mentioned in Book 15 all have one or more criteria that discourage or limit the use of these options for the Main and McClellan intersection. Therefore, it is important to consider the current crossing as an uncontrolled crossing and take into considerations the following passages from 3.3 of Book 15 relating to “uncontrolled crossings”:

Page	Passage	Comment
p.45	“Whenever possible, pedestrians are to be encouraged to use crossing locations with traffic control devices.”	There is an existing controlled crossing only 60 m to the south at Main Street and First Street
p.45	“The decision to provide pedestrian treatments to enhance uncontrolled crossings is a balance between increased driver awareness of crossing activity and pedestrians' understanding of the rules of the road. The presence of enhanced pedestrian features at uncontrolled crossings may create a false sense of confidence on the part of pedestrians.”	There is a certain level of responsibility associated with the pedestrian and as such it is not appropriate to implement a false sense of security to pedestrians. This may favour the removal of the existing crosswalk.
p.46	“Suitability and Consideration for Control Crossing – Pedestrians should be encouraged to cross at controlled crosswalk locations in most situations. The use of controlled crossings should	Reinforcement that pedestrians have a safer controlled crossing only 60 m to the south at Main and First Street.

	therefore be considered first as a potential treatment option.”	
p.46	“The implementation of pedestrian treatments to enhance an uncontrolled crossing should only be considered if there is a high level of caution anticipated to be exhibited by both drivers and pedestrians(for example, a two-lane roadway with on-street parking in a downtown location with steady stream of pedestrian activity along both sides of the street.)”	Reinforcement that both drivers and pedestrians need to be aware of their respective responsibilities and environment at the current and all uncontrolled crossings.
p.46	“Uncontrolled crossings are discouraged if the...” <ul style="list-style-type: none"> • “The road classification is higher than a collector road, that is, major collector and arterial.” 	Main Street could be considered a major collector or arterial for Kenora’s traffic volumes as it is Highway 17.
p.46	“Enhancements of uncontrolled crossings should not be considered if sight-distance restrictions cannot be removed.”	In observing the current crosswalk, sight distance for vehicles travelling in the south bound curb lane may have an obstructed view of pedestrians who are crossing in an east to west direction when a vehicle is waiting in the left turn south bound lane waiting to turn onto McClellan. It should be noted that the current vehicle lane configuration is critical to keeping traffic flowing at this intersection.
p.47	a) “The presence of nearby controlled crossings – Uncontrolled crossings should be avoided if in close proximity to controlled crosswalks. Pedestrians should be encouraged to cross at controlled crosswalks in most situations. It is recommended that a minimum of 100 metres separation from the nearest controlled crossing be maintained.”	Reinforcement that uncontrolled crosswalks should not be within 100 m of a controlled crossing as the controlled crosswalk at Main and First is approximately 60 m from the one in question at McClellan and Main.
p.48	“implement pedestrian treatments at uncontrolled crossing points should also consider the need for physical pedestrian aids as supplementary features to help: <ul style="list-style-type: none"> • Simplify crossings for pedestrians • Heighten and maximize the level of road users’ awareness of the environment and road hazard • Inform, clarify and reinforce the rules of the road” 	Confirms that better conveyance of the pedestrian responsibilities may improve their decisions, acts and safety.
p.48	“Marked crosswalks with painted pavement markings are not recommended at uncontrolled crossing as they create a false sense of security on the part of the pedestrians,	Validation that pedestrians are expecting vehicles to stop at the current uncontrolled crossing. Pedestrians at this type of uncontrolled crossing need to wait for adequate gaps in the traffic

	particularly children, who may enter the crossing expecting approaching drivers will see them and stop.”	flow in order to cross safely. The delineated concrete crosswalk at this intersection could be looked at the same as a painted crosswalk and could put the City at risk should a collision occur between pedestrian and vehicle at this intersection.
p.48	“The purpose of the PEDESTRIAN AHEAD sign would normally be used in rural areas where, from visual observation, the presence of pedestrians in rather uninhabited areas would come as a surprise to the motorists. Application of PEDESTRIAN AHEAD signs is less effective within an urban environment where there is general expectancy of pedestrian activities.”	The only pedestrian warning sign is the PEDESTRIAN AHEAD (Wc-7) sign that is typically used for more rural than urban purposes.
p.48	“ <u>Warning Signs for Pedestrians</u> The purpose of a WAIT FOR GAP (Wc-28) sign is to warn pedestrians wishing to cross at a location where they do not have the right-of-way that they must wait for a gap in traffic sufficiently large to enable them to cross safely. The WAIT FOR GAP sign should be installed where field observations have indicated that pedestrians frequently cross at a location where they are not waiting for the appropriate gaps and where drivers may not anticipate pedestrians. Initiatives to promote the level of understanding of these signs should also be considered.”	Signage that could be used to convey to the pedestrian that they do not have the right-of-way at an uncontrolled crossing.
p.50	“A pedestrian refuge island should not be installed in close proximity (<100 m) to other controlled crossings, since pedestrians should be encouraged to cross at controlled crossing in most situations (Note: A pedestrian refuge island may be installed as part of a controlled crosswalk).”	A refuge island could be one thing that could provide pedestrians some level of security as at the roundabout. There may be an area for a refuge island at the road centre line. This would allow for a safety measure for pedestrians stopping half way across and then proceeding for the second half crossing when safe to do so. However, these installations are not recommended when within 100 m of a controlled crossing with at Main and First Street signals being within this distance.
p.52	“3.3.1.5 Courtesy Crossing A courtesy crossing is currently not a regulated crossing feature, but has been installed in some municipalities to highlight uncontrolled crossing locations in low speed urban environments. At courtesy crossings, pedestrians do not have special right-	The Courtesy Crossing concept, although not regulated and still in it’s infancy, would appear to be a possible option in better defining the uncontrolled crossing and identifying the motorist and pedestrian responsibilities at such crossings.

	<p>of-way over vehicles (which remains in accordance to the Highway Traffic Act and pedestrians can only cross on available vehicle gaps or when vehicles stop to yield to pedestrians out of "courtesy". The effectiveness of courtesy crossings has been witnessed through an enhance level of caution and consistency in driver and pedestrian yielding behavior.</p> <p>These crossings are marked with non-standard oversized yellow fluorescent warning signs that indicated "COURTESY CROSSING" along with a large black X. At the crossing, a special message sign intended for pedestrians is installed to clearly convey that pedestrians still do not have the right-of-way over vehicles. Courtesy crossings have been introduced initially as a trial (pilot initiative) by some municipalities to gauge the level of compliance."</p>	
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In summary and conclusion, it would appear, as per OTM Book 15 Pedestrian Crossing Facilities, that changing the current uncontrolled crossing at Main Street South and McClellan Avenue to a controlled intersection by using Traffic Signals, Intersection Pedestrian Signal, Pedestrian Crossover or Stop or Yield Signage cannot be achieved due to the close proximity (60 m) of a signalized intersection at Main and First Street and the pedestrian warrant criteria not being satisfied. That leaves only two viable options for this crossing:

1. Remove the current concrete uncontrolled crossing. This would eliminate the false sense of security for the pedestrian's right to cross at this location and would also greatly reduce the City's risk should there be a pedestrian/vehicle collision. Removing the designated crosswalk would allow pedestrian to cross at their own risk in this area, or alternately, to use the controlled crossing at First and Main. With no formal crosswalk, the HTA would dictate that pedestrians could only cross when safe to do so. Estimated cost to remove the concrete crosswalk and reinstate asphalt is between \$5,000 and \$7,500.
2. Enhance the uncontrolled crosswalk with signage and warning systems for both pedestrians and motorist by installing:
 - Courtesy Crossing Signage for motorists (installed on existing Victorian light standards). Estimated Cost - \$200
 - Wait for Gap Signage for pedestrians. Estimated Cost \$200.00
 - Flashing amber beacons over the Courtesy Crossing signage to flash 24/7 to better alert motorist of the potential of pedestrians crossing. Estimated cost is \$10,000 to permanently run power to the beacons and supply and install them on the Victorian light standards.

- Construct a concrete refuge island between the north and south bound lanes of traffic to provide safety and the knowledge to pedestrians that only one lane of traffic needs to be traversed at one time. This installation would have to be further considered and reviewed based on ignoring the OTM guideline that the controlled intersection at Main and First would be within 100 m of the refuge island. Estimated cost for the construction of a refuge island would be in the range of \$7,500 to \$10,000 depending upon aesthetics and finishes used to match the existing streetscape.

*Budget: **2012 Budget***

Communication Plan/Notice By-law Requirements:

By-law required.

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