

Annual Pedestrian Crossover Program Update

Background:

In May 2016, a report entitled "[Pedestrian Crossover Facilities](#)" was presented to Operations Committee. The report provided an overview of this new tool and recommended that an annual report prioritizing the installation of pedestrian crossovers (PXOs) based on existing and anticipated pedestrian volumes be presented to the Committee. This report has been prepared to fulfill that commitment.

In November 2017, the annual [Pedestrian Crossover Program Update](#) report was presented to the Operations Committee highlighting new crossovers to be installed, as well as reporting on monitoring and compliance of previously installed PXOs. As part of that report, staff committed to bring forward future reports to highlight results of analysis conducted to determine whether pedestrian crossovers requested by members of the public were warranted.

This update is being presented at this time, so that potential new pedestrian crossover locations that were evaluated in 2018 can be approved and installed in 2019.

Monitoring Program Update:

When the Pedestrian Crossover Program for the City was initiated in 2016, an approach to monitor the success of the program was developed to ensure that the PXOs were achieving their objective of improving pedestrian safety in Greater Sudbury.

To determine additional impacts that the PXO program has had, studies of both pedestrians and motorists were completed at some of the previously-installed locations as identified in Table 1.

Table 1. Locations and Types of Pedestrian Crossovers Monitored for Pedestrian and Motorist Compliance in 2018

Location	PXO Type
Bond Street, 25 m East of Murray Street	D
Elgin Street and Nelson Street	D
Elgin Street and Shaughnessy Street	D
Madison Avenue and Sagebrush Place	D

Analysis presented within this report is based on observations and data collected from these four pedestrian crossovers.

Motorist Compliance:

To measure motorist compliance, traffic cameras were used to record pedestrian and motorist movements at the various PXOs. To determine motorist compliance, staff were specifically looking for two behaviours:

- 1) Did the approaching motorist stop when a pedestrian was present at the side of the road?
- 2) Did the motorist remain stopped until the pedestrian had completely left the roadway?

Motorist compliance for the PXOs observed as part of this report was variable (Figure 1). Lower than expected compliance may be related to the type of PXO installed at the crossings. Type D PXOs are designed with 'Stop for Pedestrians' signs on both sides of the ladder crosswalk markings and also have yield bars to indicate where vehicles and bicycles must stop. Type C and Type B PXOs both have flashing beacons to supplement the signage and pavement markings which may potentially have an impact on motorist compliance.

The Bond Street crossing, the Elgin Street crossing at Nelson Street and the Elgin Street crossing at Shaughnessy Street all appear to have low motorist compliance. A closer look at the data suggests this may be the result of the low volume of potential conflicts between pedestrians and motorists observed during the study. The vast majority of pedestrians approaching the PXOs were able to make a safe crossing without any conflicts with motor vehicles. Similarly the majority of vehicles travelling in these two corridors were able to go through the PXO without a pedestrian present. In the instances where there was a pedestrian waiting to cross at the PXO, the approaching vehicles did not typically stop. The Madison Avenue crossing had significantly higher motorist compliance, however, this motorist compliance rate is still less than the rates observed at locations with flashing beacons. Compliance studies were not conducted at the Madison Avenue crossing in 2017.

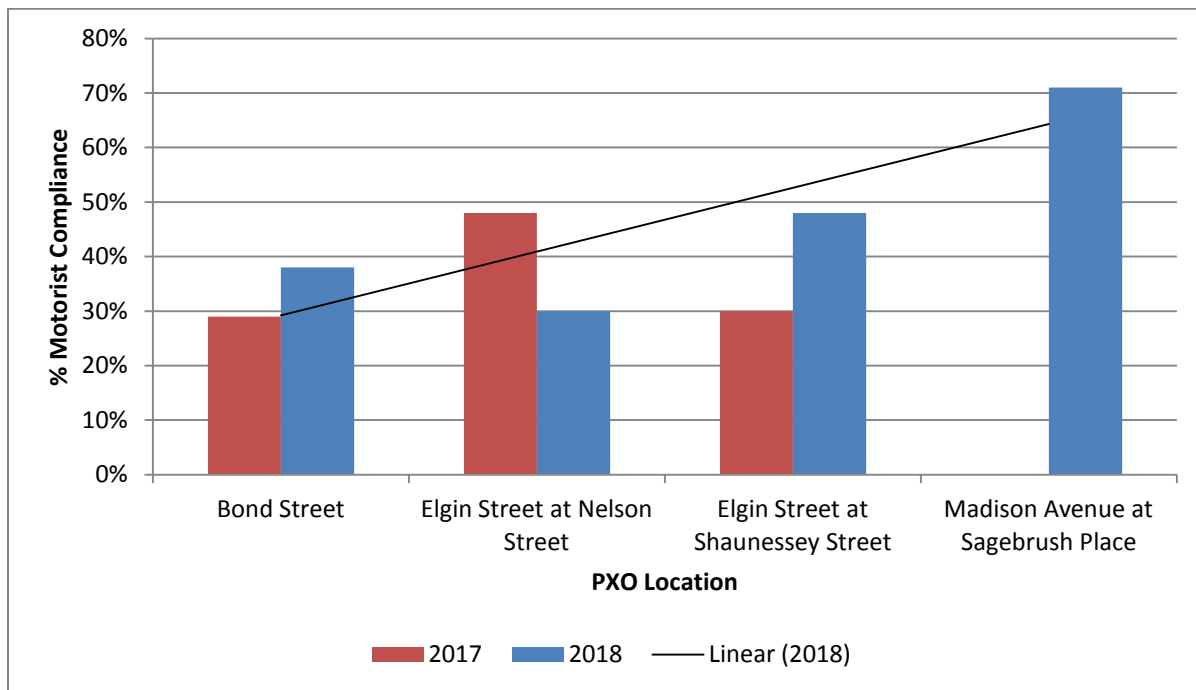


Figure 1. Percentage of motorists at each PXO Location who stopped at the appropriate time to allow pedestrians to cross the road

Pedestrian Compliance and Use:

Pedestrian compliance is somewhat more difficult to determine, as per the Highway Traffic Act, the presence of the 'Stop for Pedestrians' signs are all that is required for motorists to have to stop to allow pedestrians to cross the road. In addition, when flashing beacons are present at the PXO, pedestrians are not required to activate them prior to crossing. Pedestrians are required to enter the road only when there would be adequate time for an approaching vehicle to stop. The flashing beacons are a supplemental device which helps draw the attention of motorists that a pedestrian is waiting to cross the road.

Table 2 illustrates pedestrian compliance for the four crossings that were studied. Pedestrians were considered to be in compliance if they waited for the vehicles to stop prior to entering the roadway and if they remained within the ladder crosswalk markings for the entirety of their crossing.

Although it has been less than two years since the initial installation of PXOs, it is important to note that no pedestrian collisions have been reported within any of the installed pedestrian crossovers.

Table 2: Locations and Types of Pedestrian Crossovers Monitored for Pedestrian and Motorist Compliance in 2017

Location	PXO Type	Percent Pedestrian Compliance 2017 (%)	Percent Pedestrian Compliance 2018 (%)
Bond Street, 25 m East of Murray Street	D	100	71
Elgin Street and Nelson Street	D	66	68
Elgin Street and Shaughnessy Street	D	70	65
Madison Avenue at Sagebrush Place	D	Not Studied	85

Pedestrian Volumes:

While volumes have changed since the initial traffic counts conducted in 2016, the results are indeterminate (Table 3). Staff will continue to monitor pedestrian volumes to determine if there are trends over the longer term, and will report back in future years on any findings.

Table 3: 2016 to 2018, 8-hr Pedestrian Volume Count Results

Location	2016 Pedestrian Volume (8-hr)	2017 Pedestrian Volume (8-hr)	2018 Pedestrian Volume (8-hr)	% Change (2016 vs. 2018)
Bond Street, 25 m East of Murray Street	105	106	93	-11%
Elgin Street and Nelson Street	117	156	87	-26%
Elgin Street and Shaughnessy Street	186	118	226	+22%
Madison Avenue at Sagebrush	87	Not Studied	55	-37%

2019 Pedestrian Crossover Locations:

In 2018, staff received 6 requests for pedestrian crossings to be installed throughout the community. Staff proceeded to complete the warrant process for these requested crossings to determine whether they met the guidelines outlined in Book 15 of the Ontario Traffic Manual. Analysis concluded that one (1) of the requested PXOs is warranted and staff recommend implementation of PXOs at the following location in 2018:

Loach's Road at Windle Drive

A Type D PXO is recommended to be installed on Loach's Road at Windle Drive to enable pedestrians to cross Loach's Road at a controlled crossing location other than at the intersection of Regent Street and Loach's Road. The driveway entrance to Lo-Ellen Park Secondary School is approximately 40 metres east of Windle Drive.

Table 2: Pedestrian Crossings which Qualify for a Pedestrian Crossover

Intersection	Pedestrian Volume	Vehicular Volume	Raised Refuge	Number of Lanes	Type
Loach's Road	152	2411	No	2	D

New PXO Requests:

Requests for pedestrian crossings received since implementation of the initial program launch continue to be reviewed by staff on an ongoing basis. Staff regularly conduct sight line analyses and complete traffic counts to determine if PXOs are warranted at any of the requested locations. Staff will continue to bring forward an annual update report which will outline any additional warranted pedestrian crossings.

Next Steps:

The addition of PXOs to the municipal infrastructure toolbox has provided a lower cost option to create controlled pedestrian crossings at locations where pedestrians desire to cross. By continuing to expand the PXO program, pedestrian access and movement will continue to be prioritized which ultimately enhances pedestrian safety and enables a healthier lifestyle for Greater Sudbury residents.

In an effort to improve compliance at Type D PXOs, staff will be trialing a new flexible bollard as shown in Figure 2 below.



Figure 2: Flexible Bollard

The bollard will be installed on the centre line of the street to increase the visibility of the crossover and to remind motorists to yield to pedestrians. Additional compliance studies will be conducted once the bollards are installed to determine their effectiveness. These bollards will be removed prior to November 1st so they do not interfere with winter maintenance activities.

In addition, staff will continue to work with Corporate Communications and Greater Sudbury Police Services to develop public communication material to inform drivers and pedestrians of new locations for the pedestrian crossovers and to continue to educate all road users on their proper use.

Resources Cited:

Ontario Traffic Manual, *Book 15 Pedestrian Crossing Facilities*, 2016