



Report No.: PWE 27-2018
Meeting Date: April 25, 2018
Submitted by: Brian Lima, P.Eng. – Director, Public Works & Engineering
Subject: Pedestrian Crossover Program

Recommendation:

THAT, on the recommendation of the Director, Public Works & Engineering, Departmental Administration Staff BE DIRECTED to implement a Pedestrian Crossover Program, as guided by the Ontario Traffic Manual Book 15 - Pedestrian Crossing Facilities.

Purpose:

This report provides Council with an overview of, and seeks direction to implement, a Pedestrian Crossover (PXO) Program.

Background:

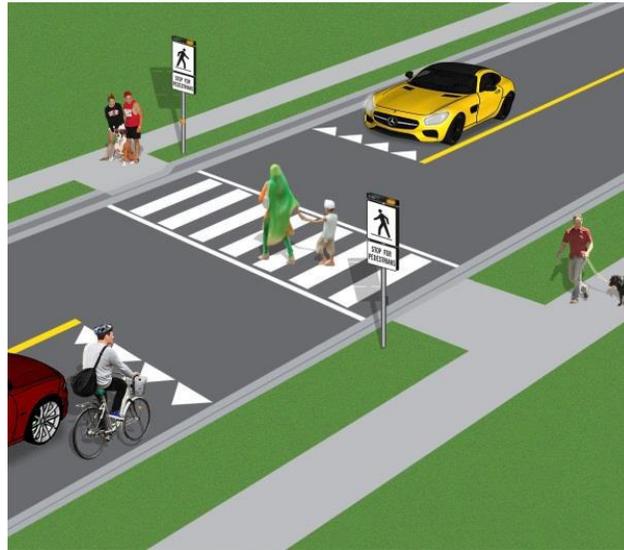
The Ontario Traffic Council and partner municipalities, including the City of London, worked for many years on the development of the Ontario Traffic Manual Book 15 - Pedestrian Crossing Facilities (Book 15). The first edition of Book 15 was released by the Ministry of Transportation of Ontario (MTO) in late 2011. During the process of developing Book 15, changes to the Highway Traffic Act (HTA) were proposed in order to provide municipalities with more tools when dealing with public inquiries related to pedestrian access across uncontrolled intersections and midblock locations. The changes meant to provide greater protection for pedestrians by requiring drivers to come to a full stop and yield the right of way to a pedestrian who is within a crossover or using a school crossing.

On June 2, 2015, Bill 31, the Transportation Statute Law Amendment Act (Making Ontario's Roads Safer) passed final reading in the Ontario Legislature. Bill 31 deals with many of the measures in Book 15 including amendment to the HTA to allow for new pedestrian crossing devices for low-speed and low-volume roads as requested by municipalities. Bill 31 took effect on January 1, 2016.

In 2015, MTO completed its update to Book 15. Within this update and the amendments recently approved to the Highway Traffic Act through Bill 31, the Province has introduced three new variations of the PXO. This crossing treatment will allow pedestrians to cross with the right-of-way under a greater number of conditions than before, and will provide municipalities with additional solutions to increase pedestrian safety.

Analysis:

Book 15 - Pedestrian Crossing Facilities recommends PXO treatments and developed three new types of PXOs. The recommended PXOs are consistent with HTA and are limited to roads with a posted speed limit of 60 km/h or less. PXOs provide pedestrians with protected crossing opportunities by requiring motorists and cyclists to yield to pedestrians within the crosswalk.



New Pedestrian Crossover Configurations

The new PXOs are a defined set of roadside signs and road pavement markings which form a new passive treatment to provide pedestrians the right-of-way when crossing the roadway where the treatment is installed. Warrants for these new treatments have been developed to allow for pedestrian right-of-way for more road types and traffic conditions, including at roundabouts. At all PXOs, drivers are required to yield the right-of-way when a pedestrian is at such a crossing and has the intent to cross the roadway. The new PXO options being put forward will offer greater service to residents in terms of pedestrian mobility and connectivity. The four types of PXOs for both mid-block and intersections are briefly defined below:

- **Type A:** PXO A is the pre-existing PXO under Book 15 and is currently not used on Middlesex Centre streets and with most other municipalities. The PXO consists of side mounted poles with crossing signs, as well as overhead signs with flashing beacons suspended on wire spanning the two roadside poles. This type of PXO is designed for use on high to medium traffic volume multi-lane arterial roads.
- **Type B:** PXO B consists of a roadside mounted sign leading to a crossing in both directions with an overhead sign and a rapid flashing beacon strip on top of the roadside mounted sign. This type of PXO is designed for use on medium traffic volume single or multi-lane roadways, such as primary collectors, arterials and medium volume roundabouts.
- **Type C:** PXO C consists of a roadside mounted sign at a crossing for both directions and a rapid flashing beacon strip on top of the side mounted sign. This type of PXO is designed for use on medium traffic volume single or multi-lane roadways, such as primary collectors and low volume roundabouts.
- **Type D:** PXO D consists of a roadside mounted sign at the crossing for both directions with no rapid flashing beacon. This type of PXO is designed for use on

medium to low traffic volume single lane roadways, such as locals, secondary collectors, single lane roundabouts and channelized right-turn lanes.

An example of a typical PXO Type D layout is shown in Figure 1 below. Additional examples of typical PXO layouts are illustrated in Appendix A.

There are a number of conditions that must be met in order for a PXO to be implemented, including:

- Appropriate pedestrian and vehicle volumes or the ability to address a need for pedestrian system connectivity;
- Pedestrian facilities on both sides of the road which are maintained in the winter;
- Appropriate sight lines;
- Located within a roadway segment with a posted speed limit of 60km/h or less;
- Accessibility for Ontarians with Disabilities Act (AODA) compliant curb and sidewalk depressions at the crossing;
- Not within 200 m of another crossing control treatment (unless pedestrian and vehicle volumes are high and there is a requirement for system connectivity or the location is on a pedestrian desire line); and,
- Illuminated with street lighting meeting provincial standards for such treatments.

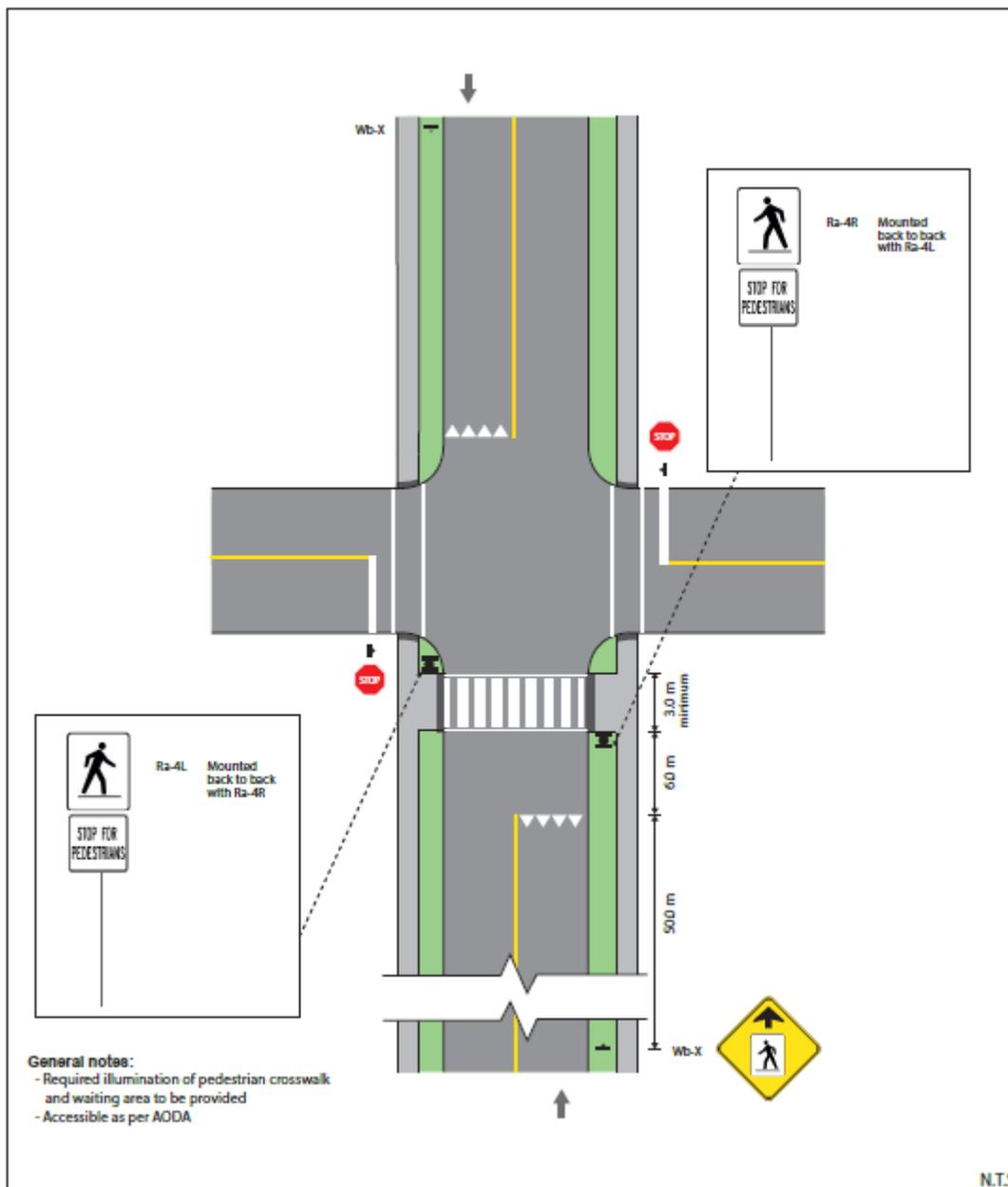


Figure 1: Pedestrian Crossover Type D – Intersection (2-way)

Pedestrian Crossover Program

It is recommended that the Municipality implement a PXO Program as warranted, where various types of the newly introduced PXOs will be installed at warranted locations across the



Municipality. It is recommended that the PXO Program follow the process provided in the updated Book 15 which include the following:

- The screening process for potential crossing locations;
- The selection process for the type of PXO when the location is warranted; and,
- Determining the conditions required for the installation of the PXO.

The selection of an appropriate type of PXO was based on the PXO selection matrix provided in Book 15 (Section 5.22, Table 7) and is illustrated below in Table 1. The table provides the warrant system based on vehicular volumes, posted speed limit and the number of lanes. The table provides the option for practitioners to use 8-hour or 4-hour vehicular volume counts during the highest pedestrian period.

Table 1: Pedestrian Crossover Selection Matrix

Two-way Vehicular Volume			Speed Limit (km/h)	Total Number of Lanes for the Roadway Cross Section ¹			
Time Period	Lower Bound	Upper Bound		1 or 2 Lanes	3 lanes	4 lanes w/raised refuge	4 lanes w/o raised refuge
8 Hour	750	2,250	≤50	PXO D	PXO C ³	PXO D ²	PXO B
4 Hour	395	1,185					
8 Hour	750	2,250	60	PXO C	PXO B	PXO C ²	PXO B
4 Hour	395	1,185					
8 Hour	2,250	4,500	≤50	PXO D	PXO B	PXO D ²	PXO B
4 Hour	1,185	2,370					
8 Hour	2,250	4,500	60	PXO C	PXO B	PXO C ²	PXO B
4 Hour	1,185	2,370					
8 Hour	4,500	6,000	≤50	PXO C	PXO B	PXO C ²	PXO B
4 Hour	2,370	3,155					
8 Hour	4,500	6,000	60	PXO B	PXO B	PXO C ²	PXO B
4 Hour	2,370	3,155					
8 Hour	6,000	7,500	≤50	PXO B	PXO B	PXO C ²	PXO A
4 Hour	3,155	3,950					
8 Hour	6,000	7,500	60	PXO B	PXO B	Hatched	Hatched
4 Hour	3,155	3,950					
8 Hour	7,500	17,500	≤50	PXO B	PXO B	Hatched	Hatched
4 Hour	3,950	9,215					
8 Hour	7,500	17,500	60	PXO B	Hatched	Hatched	Hatched
4 Hour	3,950	9,215					

Implementation Strategy

Achieving the following objectives is fundamental to the success of the PXO Program:

- Recognition of the new treatment by all road users;
- An understanding that the new crossing treatments provide pedestrians with the right-of-way;
- Road user buy-in and acceptance of the treatments; and,
- Minimizing the chance of, or exposure to, incidents.

The program implementation strategy aims to achieve the objectives with the identification of a strategic list of locations and a complimentary communication plan. Meeting these objectives in a consistent manner will help support road user education, expectations and overall buy in.

Recommended Locations

Initial phasing of PXO implementation will allow road users to frequently become familiar with the treatments at lower risk locations. The initial focus will be on Type D installations. The plan recommends that the installation of any Type C and B PXOs are deferred until public awareness and knowledge of the new PXOs Municipality wide is increased.

With PXO installation, pedestrians will have a device to assist them in crossing the road at all hours, not just when the crossing guard is present.

A multi-year implementation program is recommended with PXO locations prioritized based on a review and availability of budget funds. Appendix B lists locations for the proposed PXOs over a multi-year period. Additional locations will be identified in the future after evaluation of this first phase of the PXO implementation program.

In addition to the installation of basic signage and pavement markings, some locations may require the installation of curb/sidewalk depressions, tactile walking surface indicators and potential lighting.

Communication Plan

An integral component of the program will be a comprehensive communication plan to inform, educate and raise awareness about the program. The new PXOs will be a cultural change for drivers, cyclists and pedestrians. There will be a greater occurrence of pedestrians having the right-of-way and vehicle operators need to be made aware of this. Drivers will need to proactively be on the lookout for pedestrian crossings and for pedestrians entering the roadway to cross. Pedestrians will also need to exercise due care to avoid collisions, particularly at recently introduced PXOs.



To support the successful implementation of the PXOs within the Municipality, public awareness initiatives will be undertaken during the multi-year PXO program implementation. A coordinated approach will inform of changes that will be implemented, and serve to clarify the rights and responsibilities of all road users at these crossings. The Municipality-wide communications plan may include media products, social media, Municipality website, signage and advertising.

With support from Road Safety Strategy partners, mainly the London-Middlesex Road Safety Committee, an educational campaign will be developed focusing on awareness activities, presentations and videos to target key audiences, such as local area schools, community associations and all other road users.

Information and education will be provided at the local area whenever a new PXO is implemented. Department Administration Staff will review other municipalities' PXO education and awareness experiences.

Financial Implications:

The estimated costs to implement individual Type D and C PXOs are \$5,000, \$12,000 respectively. The estimated cost of Type B PXO is \$20,000. These costs are for basic installation with roadside mounted signs and roadway pavement markings. Cost will vary based on the conditions of each site. These estimates do not include any costs associated with additional work on sidewalks to create sidewalk depressions as necessary or with improved lighting if required. Further review of each site will be conducted in order to identify the specific works that are required at each site and the associated cost.

Funding for the implementation of the new pedestrian crossover program will need to be budgeted for as part of future budget deliberations. The number of PXOs installed each year will depend on the associated costs with each site and the available budget. It is anticipated that the identified list of nine locations will take approximately three years to implement.

Strategic Plan:

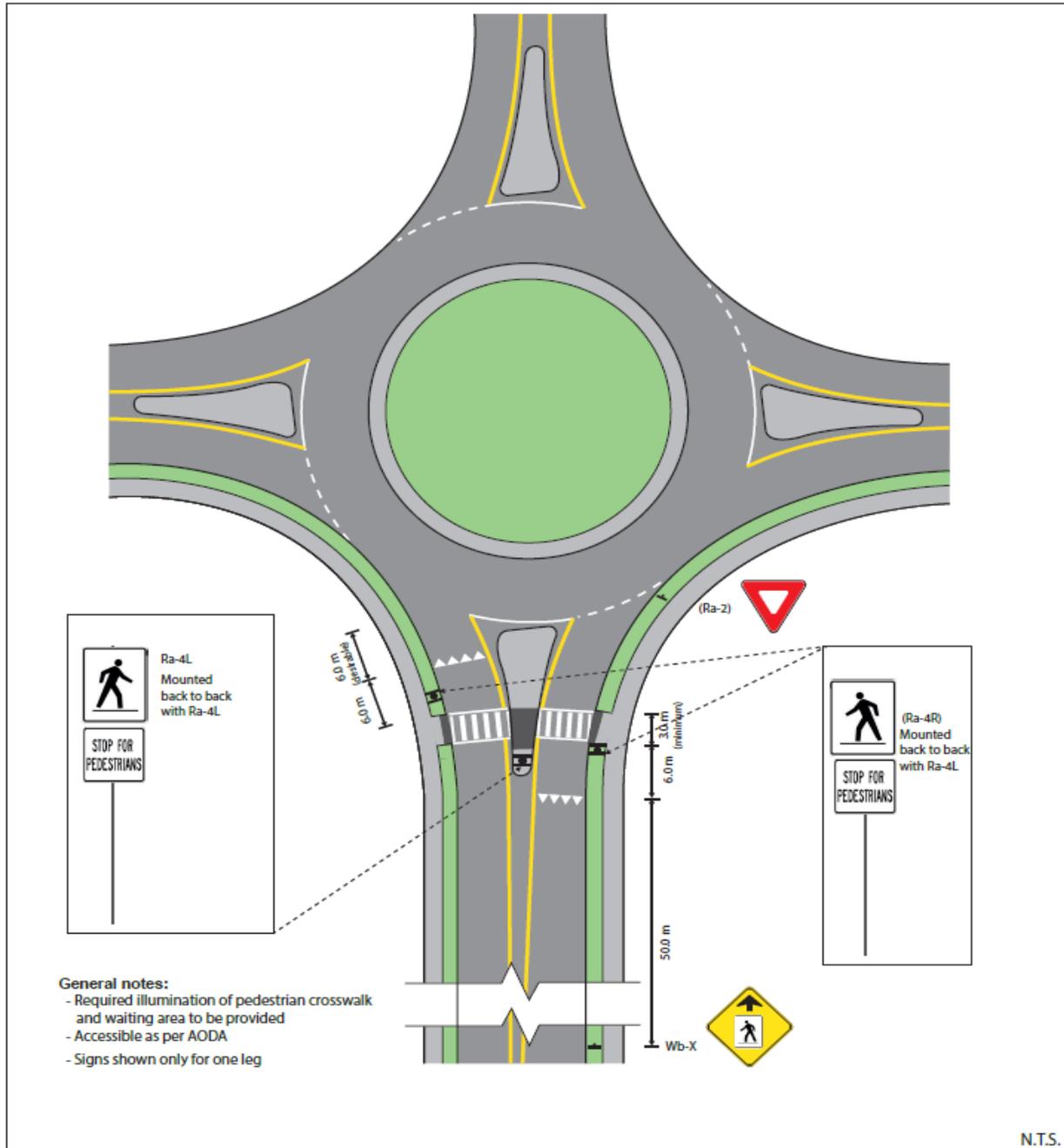
Middlesex Centre's 2012-2017 Strategic Plan, identified three applicable specific strategic theme as Increase Customer Satisfaction, Promote Positive Image, and Enhance Customer Communications.

This report was prepared with assistance provided by Jake Straus, CET – Transportation Engineering Technologist.

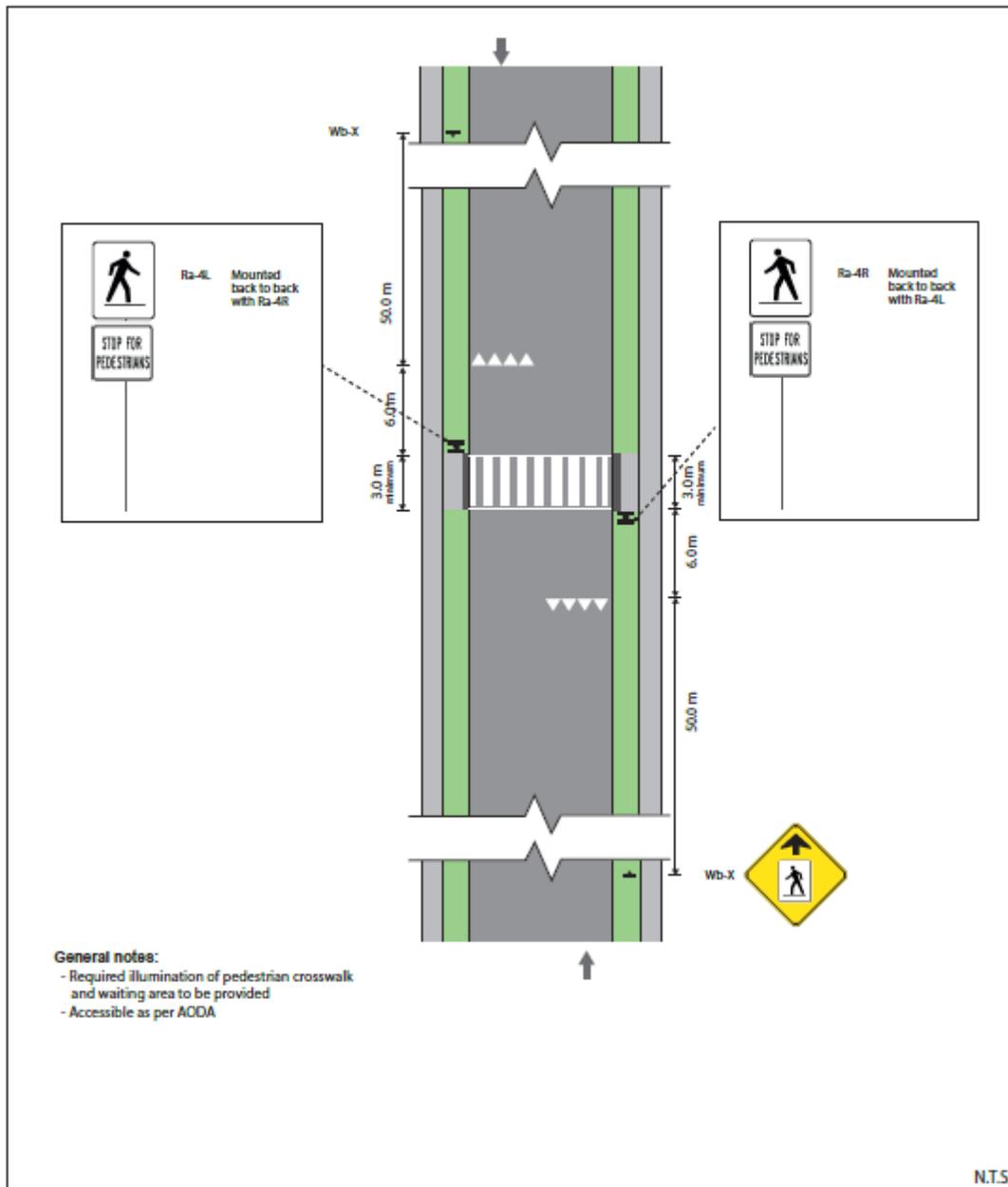
Attach: Appendix A: Typical PXO Layouts (Types A, B, C, & D)
Appendix B: Proposed London PXO Locations

cc: Middlesex County c/o Chris Traini
Transportation Advisory Committee (TAC)
London-Middlesex Road Safety Committee c/o Alyssa Penney, MLHU

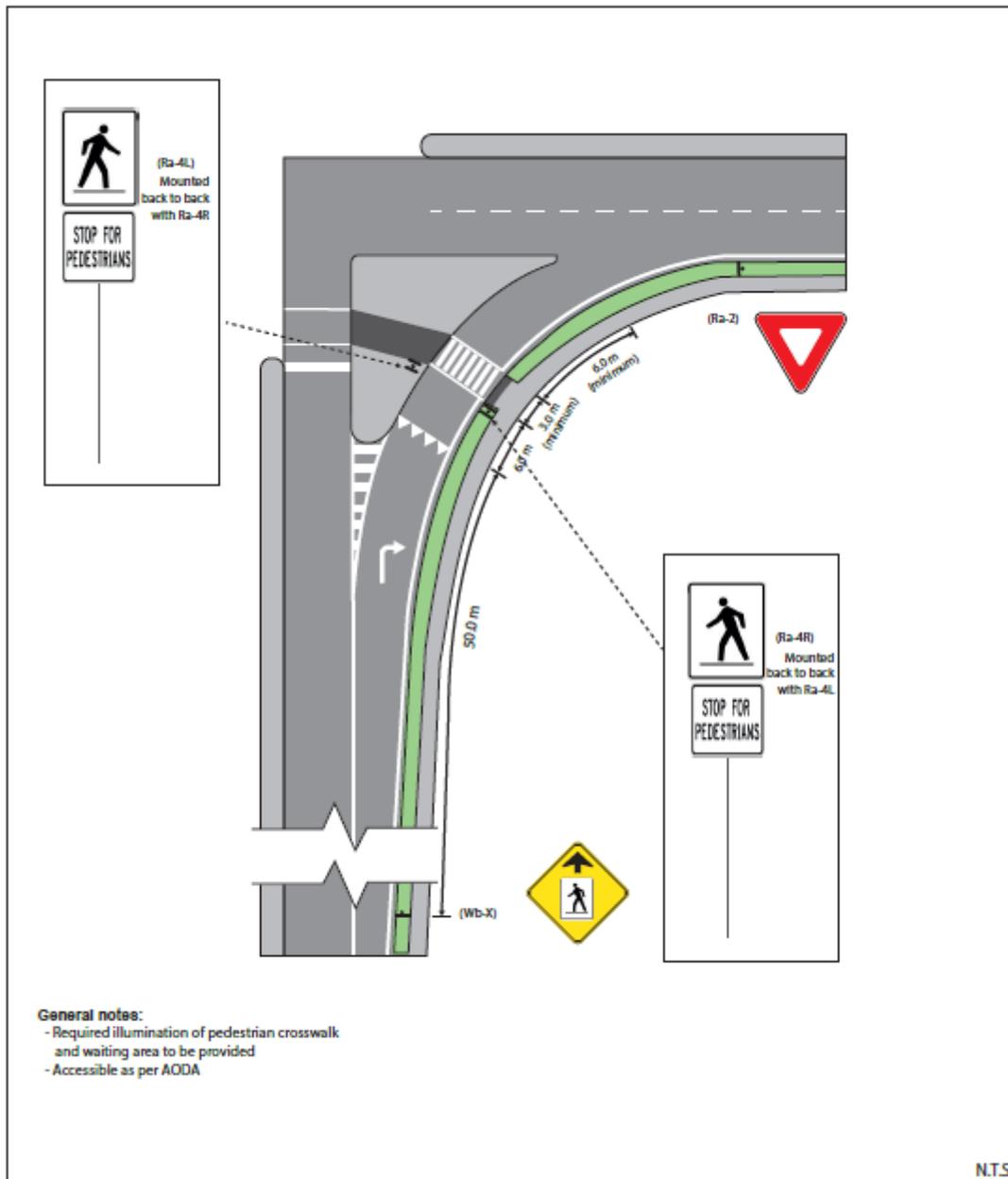
Appendix A - Typical PXO Layouts



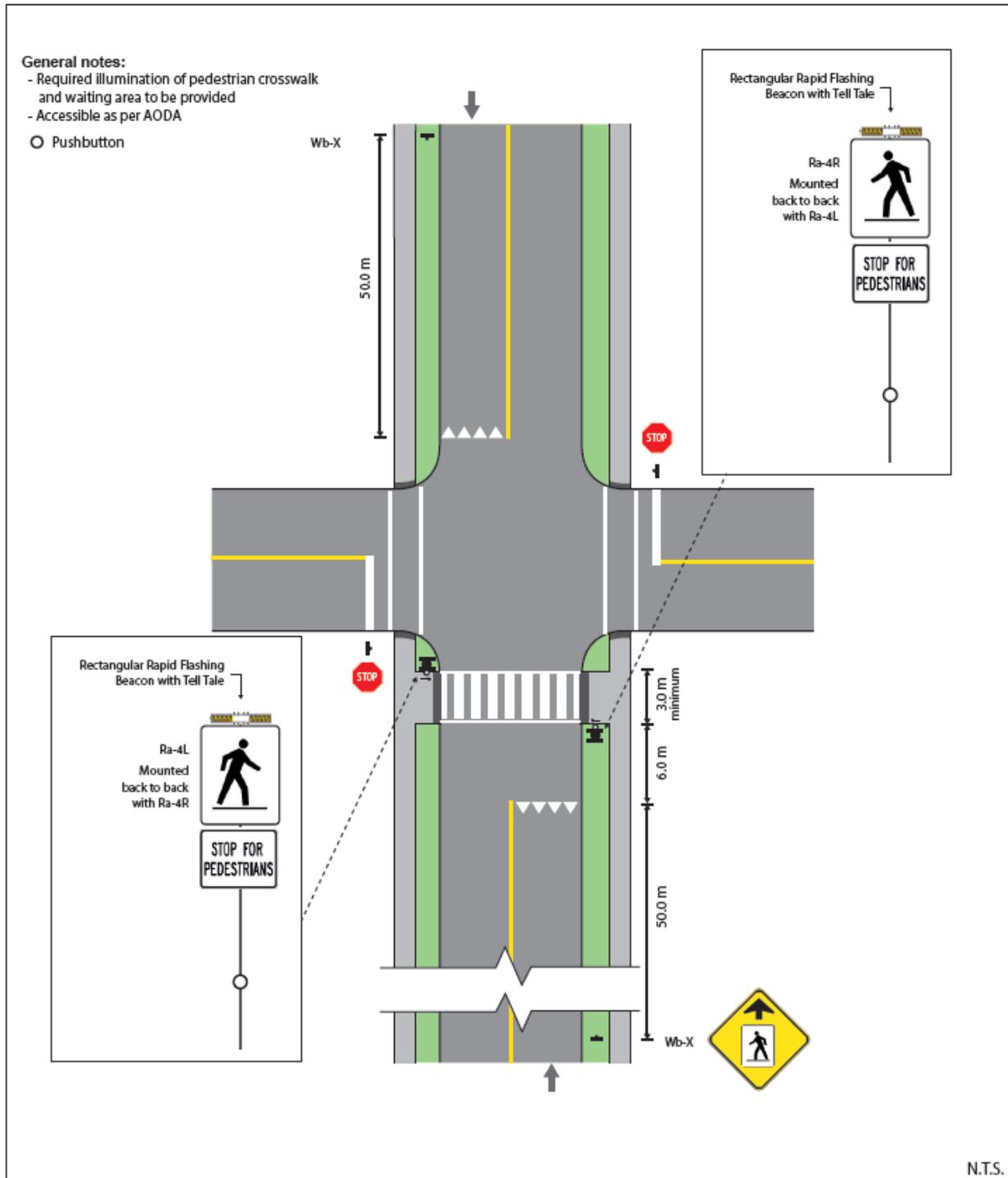
PXO Type D – Single-Lane Roundabout



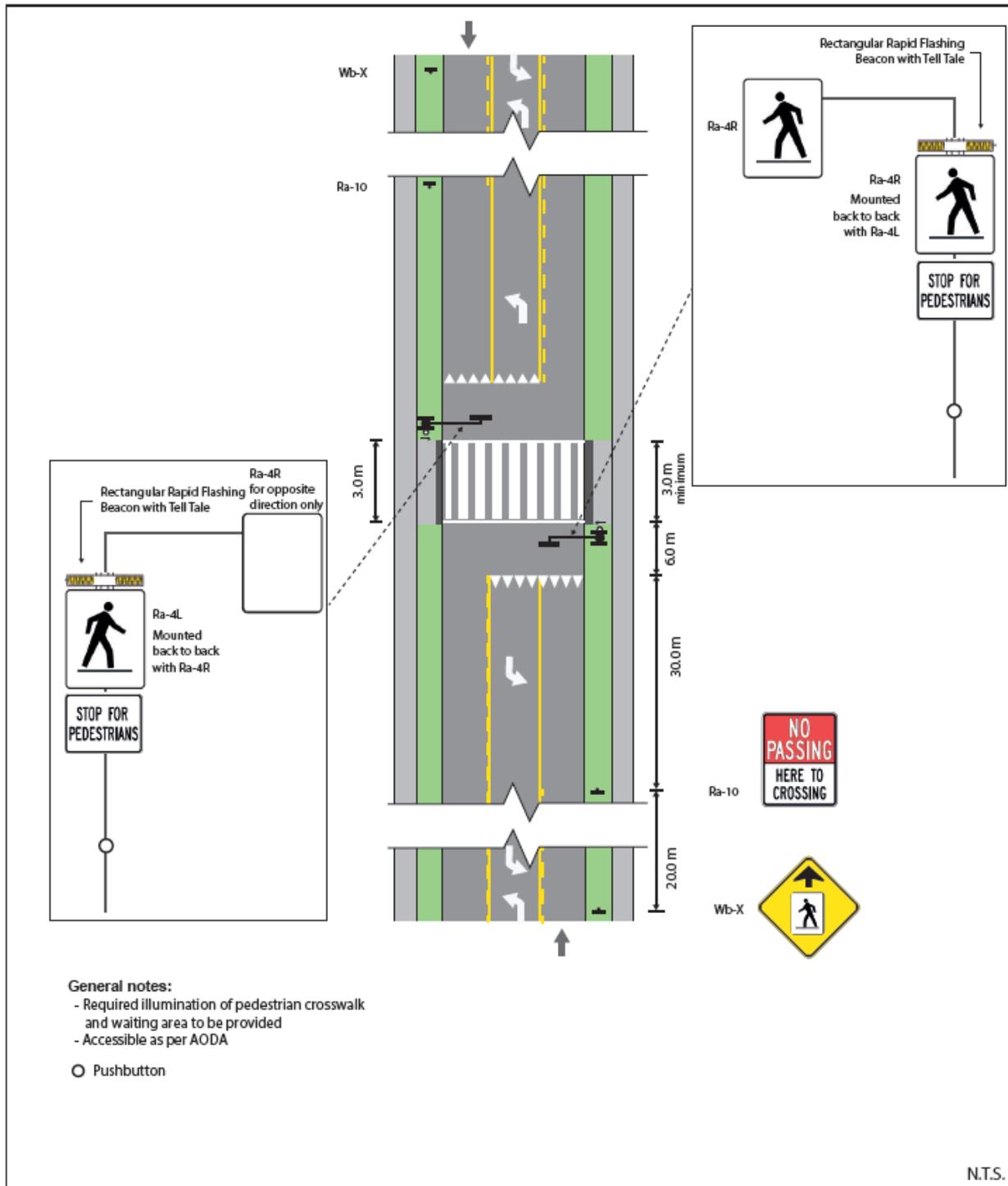
PXO Type D – Mid-block (2-lane, 2-way)



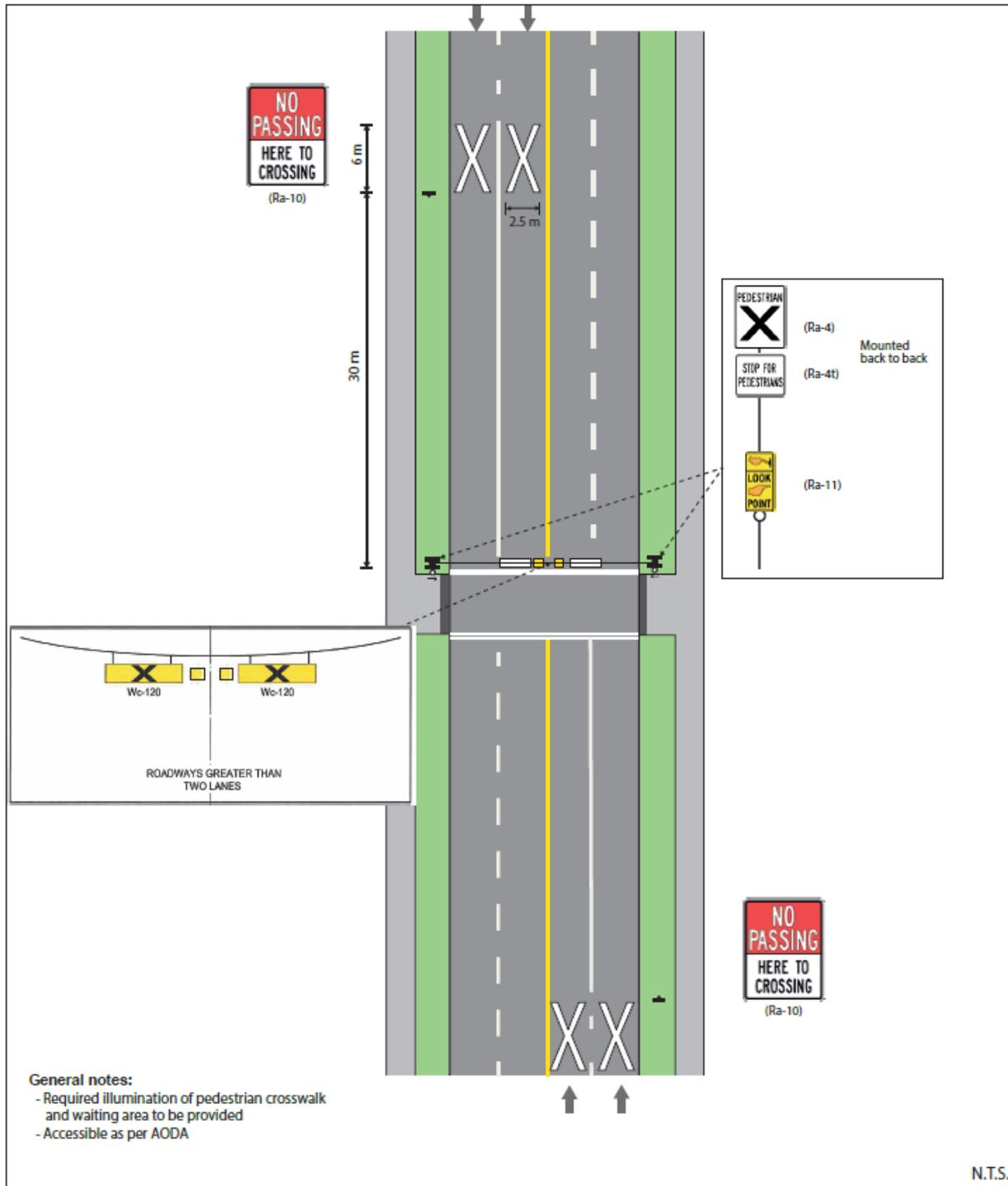
PXO Type D – Right-turn Channel



PXO Type C – Intersection (2-way)



PXO Type B – Mid-block (3-lane with center 2-way left-turn lane)



PXO Type A - Mid-block (4-lane, 2-way)

Appendix B

Proposed Middlesex Centre PXO Locations
Proposed Type D PXO Locations

	Location	Road Classification
1	Hyde Park Road & Maplewood Lane	Primary Collector & Local Road
2	Jefferies Road & Stephen Moore Drive	Secondary Collector & Local Road
3	Komoka Road & Hamilton Street	Primary Collector & Local Road
4	Queen Street & Fieldstone Gate	Secondary Collector & Local Road
5	York Street & Young Street	Local Roads
6	Victoria Street & Wellington Street	Local Roads
7	Denfield Road & Station Street	Primary Collector & Local Roads

Proposed Type C PXO Locations

	Location	Road Classification
8	Hyde Park Road & Heritage Drive	Primary Collector & Local Road

Proposed Type B PXO Locations

	Location	Road Classification
9	Longwoods Road & Victoria Street	Primary Collector & Local Roads