



MEMO

TO : Megan Salvucci, City of Hamilton

FROM : Phil Weber, P.Eng.
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DATE : August 13, 2019

SUBJECT : City of Hamilton Mohawk Road Environmental Assessment
Pedestrian Crossing Treatment Review

1. INTRODUCTION

CIMA+ has been retained by the City of Hamilton (the City) to conduct a Class Environmental Assessment (EA) for Mohawk Road, between McNiven Road/Lime Kiln Road and Filman Road. The purpose of this memorandum is to summarize the pedestrian crossing treatment review conducted as part of the study. Traffic forecasts are as provided by the City for the 2031 horizon year.

2. PEDESTRIAN CROSSING TREATMENT REVIEW

A review of the practicability of implementing a pedestrian crossing treatment within the study area was conducted. Ontario Traffic Manual (OTM) Book 15 provides guidance on pedestrian crossing treatments, including pedestrian crossovers (PXO). OTM Book 15 includes a decision support tool to guide a preliminary assessment to determine if a PXO is warranted, as illustrated in Figure 1.

The first step in selecting a pedestrian crossing treatment is to determine whether traffic signals (including IPS, MPS or full traffic signals) are warranted, based on OTM Book 12 guidance. Since this requires 8-hour pedestrian classification and delay studies, which are not currently available, and considering the results of the traffic operations review, it is assumed, for the purposes of this study, that traffic signals are not warranted.

The next step in the preliminary assessment is determine if a specific site is a candidate for a PXO. The warrant for a PXO considers pedestrian and vehicular volumes. The requirement for system connectivity or the presence of pedestrian desire lines, and the distance from other traffic control devices (minimum 200 metres) are also taken into consideration. The following sections discuss these elements in further detail.

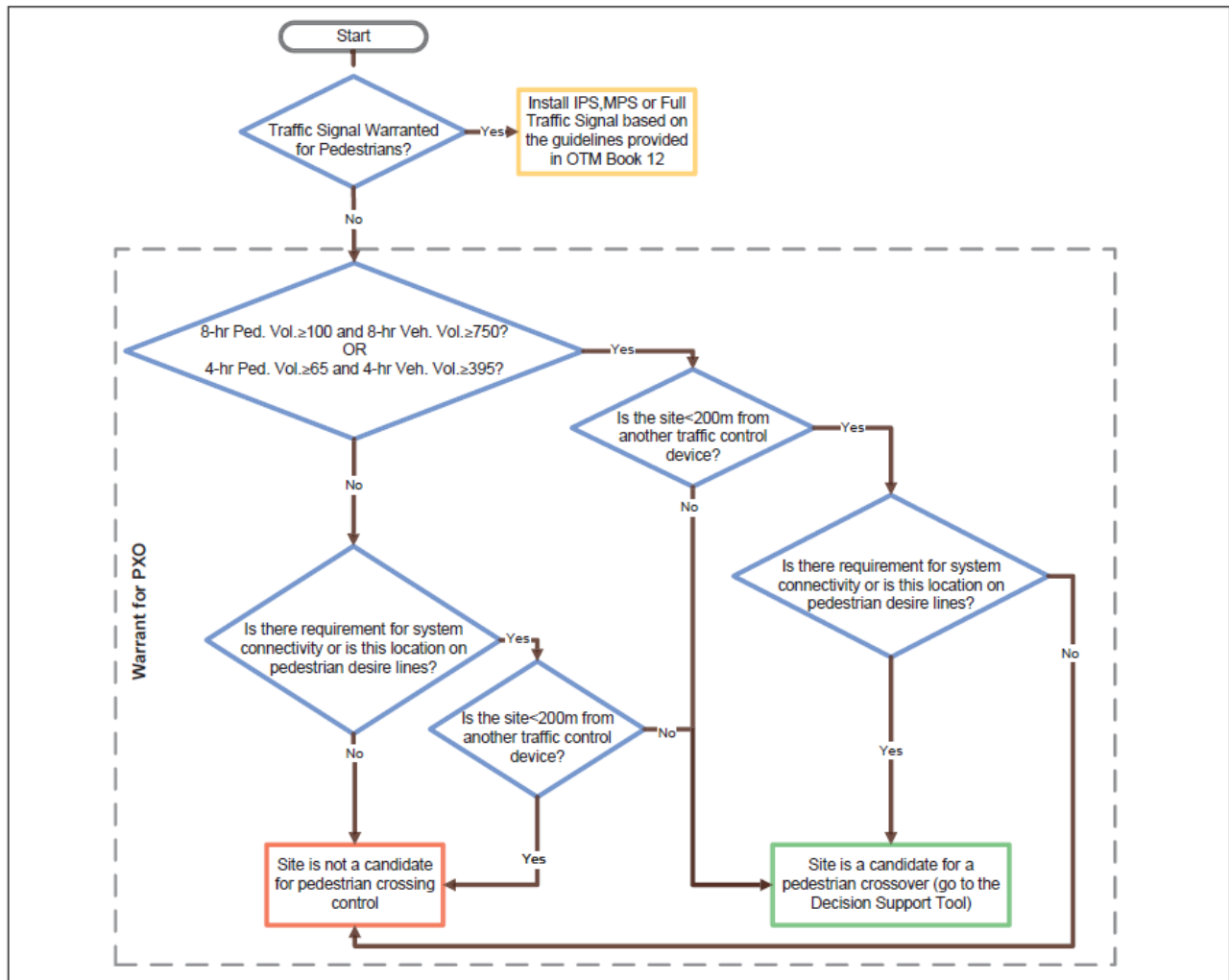


Figure 1: OTM Book 15 Decision Support Tool – Preliminary Assessment

2.1. Locations for Pedestrian Crossing Treatments

Two locations were reviewed for consideration for PXOs:

- Mohawk Road approximately 30 metres west of Cayuga Avenue
- Mohawk Road approximately 20 metres west of Algonquin Avenue

The first criteria when reviewing whether a PXO is warranted refers to vehicle and pedestrian volumes. Pedestrian counts were provided by the City for the intersection of Mohawk Road and Algonquin Avenue. Pedestrian counts at Mohawk Road and Cayuga Avenue were collected by CIMA in July 2019. The pedestrian crossing volumes at each intersection are summarized in Table 1.

Table 1: Pedestrian Crossing Volumes

Location	Date	Pedestrian Volume	Count Duration
Mohawk Road & Cayuga Avenue	July 19, 2018	0	1-hour
Mohawk Road & Algonquin Avenue	June 4, 2018	6	8-hour

Based on the 8-hour pedestrian crossing volumes at Mohawk Road and Algonquin Avenue, a pedestrian crossing is not justified as it does not meet or exceed the OTM Book 15 threshold of 100. Only a 1-hour count was available for the intersection of Mohawk Road and Cayuga Avenue. Based on the 1-hour pedestrian crossing volume at Mohawk Road and Cayuga Avenue, it is anticipated that the 4-hour or 8-hour volumes would not meet the pedestrian crossing warrant of 64 or 100 pedestrians, respectively. Given that both locations do not meet the pedestrian volume threshold to warrant a PXO, traffic volumes were not reviewed in more detail.

2.2. System Connectivity/Pedestrian Desire Lines

Based on the OTM Book 15 Decision Support Tool – Preliminary Assessment (Figure 1), a PXO may be considered if there is a requirement for system connectivity or if the location is on pedestrian desire lines.

As shown in Figure 2, the land use surrounding the study area is predominantly residential. Rousseau Elementary School is located on McNiven Road, south of Mohawk Road. Signalized intersections are present at the east and west end of the study area which provide controlled pedestrian crossings.

Based on the land use in the surrounding area, it is not likely that strong pedestrian desire lines across Mohawk Road exist within the study limits. Pedestrian crossing opportunities are present at the west end of the study area at Mohawk Road and Lime Kiln Road/McNiven Road for pedestrians destined to and from Rousseau Elementary School. A second controlled crossing is provided approximately 740 metres to the east at Mohawk Road and Filman Road. Pedestrians that originate from within the study area on Mohawk Road are able to travel to either of these controlled crossings to continue to their destinations (with the provision of a multi-use trail on the north side of Mohawk Road and sidewalk on the south side between Lime Kiln Road/McNiven Road and Algonquin Avenue, as currently recommended as the preferred alternative in this EA). It is acknowledged that the Filman Road intersection is not immediately accessible to pedestrians on the south side of Mohawk Road, given that no sidewalk is planned on the south side between Algonquin Avenue and Filman Road, but pedestrians to the south can access the Filman Road intersection internally.



Figure 2: Land Use Surrounding Study Area

3. UNCONTROLLED CROSSING

The potential of implementing an uncontrolled pedestrian crossing within the study area was also considered in order to accommodate the low volume of pedestrians crossing Mohawk Road. The guidelines in OTM Book 15 were used to determine if an uncontrolled crossing is appropriate for the study area. See Table 2.

Table 2: Uncontrolled Crossing Considerations

Consideration	Yes/No
The speed limit is 60 km/h or more.	No
The pedestrian and traffic volumes exceed the warrant thresholds for controlled crossing treatments.	No
The roadway is more than two through lanes in each direction or more than three through lanes if it is one-way.	No
The road classification is higher than a collector road, that is, major collector and arterial.	Yes

If any of the considerations in Table 2 are met, OTM Book 15 suggests that an uncontrolled crossing is not recommended. An uncontrolled crossing is not appropriate for Mohawk Road as it is classified as a major arterial road.

4. TRAFFIC CALMING

A raised median island is an elevated median constructed on the centerline of a two-way roadway to reduce the overall width of the adjacent travel lanes. According to the Transportation Association of Canada (TAC) Canadian Guide to Traffic Calming (2017), raised median islands can aid in reducing vehicle speeds and reducing pedestrian–vehicle conflicts. Advantages and disadvantages of raised median islands are as follows¹:

Advantages:

- Vehicle Speeds: Reduction between 3 and 8 km/h
- Conflicts: Can function as a pedestrian refuge resulting in reduced pedestrian-vehicle conflicts
- Environment: Aesthetic benefit if well-maintained planting is incorporated
- Other: No effect on snow plowing (islands are visible due to signing), street sweeping, or police enforcement

Disadvantages:

- Local Access: May restrict access to driveways from one direction only
- Active Transportation and Transit: On-road cyclists may feel squeezed where insufficient room has been left between a central median and the adjacent curb (aggravated on roads with high proportions of heavy vehicles)
- Other: Speeds may increase if mid-block left turn movements are not possible

Raised median islands should realize some or all of the advantages noted above, and given the design and context of Mohawk Road none of the disadvantages.

Several concerns from members of the public related to high vehicle speeds on Mohawk Road were noted throughout the study. A two-way centre left-turn lane is also recommended and the issue was raised that drivers could potentially use it as a through lane to pass queued traffic. The implementation of raised median islands will aid in reducing vehicle speeds, provide informal pedestrian refuge mid-block, and deter drivers from using the centre left-turn lane as a through lane.

Given the length of this section of Mohawk Road, raised median islands are under consideration at the same two locations as the pedestrian crossings. Another possibility is one raised median island about halfway along the corridor, just east of Green Ravine Drive. From a traffic calming perspective two raised median islands are preferred.

¹ Transportation Association of Canada, Canadian Guide to Traffic Calming, 2017.

Further discussion regarding applicability and elements to consider during detailed design when implementing a raised median island are provided in the TAC Canadian Guide to Traffic Calming.

5. RECOMMENDATIONS

In accordance with the results of the pedestrian crossing treatment review, it is recommended that controlled or uncontrolled pedestrian crossings not be implemented within the study area. However the implementation of raised median islands as a traffic calming measure, with no accompanying formal pedestrian crossing treatments, is recommended. Raised median islands will aid in reducing vehicle speeds, provide informal pedestrian refuge mid-block, and deter drivers from using the centre left-turn lane as a through lane.

Given the length of this section of Mohawk Road, two raised median islands are recommended: one approximately 30 metres west of Cayuga Avenue, and one approximately 20 metres west of Algonquin Avenue.