Date: March 19, 2019

To: Chair and Members
Committee of the Whole – Operations and Administration

From: E. (Beth) Goodger, General Manager
Public Works Commission

1.0 Type of Report

Consent Item [ ]
Item For Consideration [X]

2.0 Topic
Mount Pleasant Street at Bell Lane – Traffic Control
[Financial Impact – None]

3.0 Recommendation

A. THAT Mount Pleasant Street at Bell Lane – Traffic Control, Report No. 2019-143 BE RECEIVED.

B. THAT further review BE UNDERTAKEN through the Vision Zero Road Safety Committee to determine appropriateness of pedestrian crossovers (PXO) at the intersection of Mount Pleasant Street and Bell Lane.

4.0 Purpose and Overview

To receive the results of the Intersection Pedestrian Signal (IPS) warrant study conducted at the intersection of Mount Pleasant Street at Bell Lane. The study is in response to Council direction from July 2018 to review pedestrian crossing options at the intersection. No action is recommended at this time based on the findings of the IPS study.
5.0 **Background**

City Council, at their meeting July 24, 2018, approved the following decision:

**Mount Pleasant Street at Bell Lane – Traffic Control**

WHEREAS a request was submitted by the Brantwood Advocacy Class, a program offered at Brantwood Community Services, outlining pedestrian crossing needs at the intersection of Mount Pleasant Street and Bell Lane; and

WHEREAS the Brantwood Advocacy Class is requesting an accessible pedestrian crosswalk to stop traffic on Mount Pleasant Street and allow adequate time for pedestrians to cross the road; and

WHEREAS the closest controlled crossing across Mount Pleasant Street is more than 200 m away; and

WHEREAS additional controlled crossing options may be available through Ontario Regulation 402/15 of the Highway Traffic Act.

NOW THEREFORE BE IT RESOLVED:

A. THAT staff BE DIRECTED to review pedestrian crossing options at the intersection of Mount Pleasant Street and Bell Lane including potential installation of Intersection Pedestrian Signal (IPS) or Pedestrian Crossovers (PXO); and

B. THAT staff BE DIRECTED to report back to Council on the results of the review.

6.0 **Corporate Policy Context**

The following long term desired outcome from the Strategic Plan is addressed with the recommendation:

Brantford will be supported by well-developed and maintained transportation and servicing infrastructure.

7.0 **Input From Other Sources**

Brantwood Community Services submitted a petition to address pedestrian safety concerns at the intersection of Bell Lane and Mt. Pleasant Road. Brantwood Community Services, offers an Advocacy Class program for people with developmental disabilities to learn the necessary skills to “speak up and speak out for their rights”. The Advocacy Class aims to create a walkable City
that is safe, accessible, comfortable and well connected; an objective that they feel cannot be met with the above noted intersection.

8.0 Analysis

8.1 Existing Conditions

Mount Pleasant Street within the study area, which is shown in Figure 1, is a four (4) lane arterial road with two travel lanes in each direction and a posted speed limit of 50 km/hr. On-street parking regularly occurs in the northbound curb lane. Bell Lane is a two (2) lane local road with a posted speed limit of 50 km/h. The nearest signalized intersection is at the intersection of Mount Pleasant Street at Veterans Memorial Parkway, which is approximately 290 metres south of Bell Lane.

Mount Pleasant Street is relatively level with a straight horizontal alignment, whereas Bell Lane has an uphill grade to the west of the intersection. Bell Lane has a “Stop” control where it intersects Mount Pleasant Street. A Brantford Transit bus stop is located at the southeast corner of the intersection. Within the immediate vicinity, these two roadways service a mixed-use area of residential and institutional properties, including the John Noble Home and Brantwood Community Services.

Immediately north and in close proximity to the Mount Pleasant Street and Bell Lane intersection, Helen Avenue intersects Mount Pleasant Street on the east side and forms a staggered intersection relative to Bell Lane. Helen Avenue is also “Stop” controlled. While the Helen Avenue intersection is technically not the same intersection at Bell Lane, considerations must be made due to their close proximity.

8.2 Intersection Pedestrian Signal (IPS) Warrant Study

Brantford Public Works Policy 010, last amended by Council in 2010, provides guidelines in setting warrants to determine need for IPS, which utilize the following criteria:

- Pedestrian volumes
- Pedestrian classification
- Pedestrian crossing distance
- Traffic volumes, and
- Accident history

The warrant criteria for intersection pedestrian signals are presented in the following subsections. Each criterion is reviewed and evaluated as it relates to the study. Points are assigned to each of the criteria to establish a warrant
rating for the study. Appendix “A” presents a summary of the intersection pedestrian signal warrants identified below with the associated point value. A point value of 100 or more provides justification for intersection pedestrian signals.

1) Pedestrian Volume

The pedestrian volume is established by totaling the 8 hour pedestrian volume crossing the main roadway during the highest 8 hours of pedestrian activity. All pedestrians that cross the main roadway within 50 metres of the identified crossing location are included.

The pedestrian volumes for senior citizens, those with accessible needs and unassisted children (under 12 years) are doubled to increase the probability of justification for signal crossing protection.

During the highest 8 hours of travel, 35 adult pedestrians crossed Mount Pleasant Street at Bell Lane. Most of the pedestrians were seniors, therefore the pedestrian volume number is multiplied by 2. Five (5) points are assigned to this criterion.

2) Traffic Volumes

The average vehicular volume per hour on the main street during the 8 hour study period is used.

An average of 505 vehicles per hour was recorded on Mount Pleasant Street during the 8 hour study period. Five (5) points are assigned to this criterion.

3) Collision History

The most recent five year period is reviewed for the collision history. Only collisions that involve a pedestrian or cyclist crossing the main street are considered.

From January 1, 2014 to December 31, 2018, no collisions were reported at the study location that involved a pedestrian crossing Mount Pleasant Street. Zero (0) point is assigned to this criterion.

4) Distance to Nearest Protected Crossing

This factor is weighed according to the distance from the closest protected pedestrian crossing. A distance under 150 metres is considered to be a reasonable walking distance and is therefore not assessed any value. Distances over 150 metres are assessed points that increase as the distance increases.
The nearest protected crossing is the traffic control signal at the intersection of Mount Pleasant Street at Veterans Memorial Parkway, which is 290 metres south of the intersection of Mount Pleasant Street at Bell Lane. Twenty (20) points are assigned to this criterion.

5) Major Street Operating Speed

The 85th percentile speed is considered to be the operating speed on the street.

The 85th percentile speed recorded on Mount Pleasant Street at Bell Lane was 58 km/h. Ten (10) points are assigned to this criterion.

6) Major Street Crossing Distance

The crossing distance is identified by the number of through, turning and/or parking lanes.

Mount Pleasant Street has four (4) travel lanes at the intersection of Bell Lane. Ten (10) points are assigned to this criterion.

Intersection Pedestrian Signal Warrant Value for Mount Pleasant Street at Bell Lane

The point total for the six criteria for the intersection location identified in Figure 1 is 50. An IPS is warranted if the total points are equal to or greater than 100. Therefore, an intersection pedestrian signal is not warranted at the intersection of Mount Pleasant Street at Bell Lane.

9.0 Financial Implications

There are no financial implications resulting from the recommendation in this report.

10.0 Conclusion

Based on the study that was completed, an Intersection Pedestrian Signal (IPS) is not warranted at the intersection of Mount Pleasant Street at Bell Lane at this time. Additional assessment for suitability of pedestrian crossover (PXO) is recommended through the Vision Zero Road Safety Committee.
Figure 1 - Mount Pleasant Street at Bell Lane – Study Location
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General Manager,
Public Works Commission

T. Ku, P.Eng., PTOE
Manager, Transportation Services

Attachments:

Appendix A – Summary of Pedestrian Priority Signal Warrants – Mount Pleasant Street at Bell Lane

In adopting this report, is a by-law or agreement required? If so, it should be referenced in the recommendation section.

By-law required [ ] yes [X] no
Agreement(s) or other documents to be signed by Mayor and/or City Clerk [ ] yes [X] no
Is the necessary by-law or agreement being sent concurrently to Council? [ ] yes [X] no
# Appendix “A”

## Summary of Pedestrian Priority Signal Warrants

**Intersection:** Mount Pleasant Street @ Bell Lane

1. Pedestrian Traffic (highest 8 hours of study crossing main street) (X2 for <12, seniors, access. needs)
   - 0 to 59 pedestrians - 0 points
   - 60 to 79 pedestrians - 5 points
   - 80 to 99 pedestrians - 15 points
   - 100 to 119 pedestrians - 20 points
   - 120 to 139 pedestrians - 30 points
   - 140 to 159 pedestrians - 40 points
   - ≥ 160 pedestrians - 50 points
   - No. of Pedestrians: 35 (x2)  
   - Points: 70

2. Traffic Volumes (average vehicles per hour over highest 8 hours of study on main street)
   - 0 to 499 vph - 0 points
   - 500 to 719 vph - 5 points
   - 720 to 999 vph - 10 points
   - 1000 to 1499 vph - 15 points
   - ≥ 1500 vph - 20 points
   - Average of VPH: 505  
   - Points: 5

3. Collision History (involving pedestrians and cyclists crossing main street over previous 60 month period)
   - 0 collisions - 0 points
   - 1 collision - 15 points
   - 2 collisions - 30 points
   - 3 collisions - 45 points
   - 4 collisions - 60 points
   - ≥ 5 collisions - 75 points
   - No. of Collisions: 0  
   - Points: 0

4. Distance to Nearest Protected Crossing
   - 0 to 149 metres - 0 points
   - 150 to 399 metres - 20 points
   - 400 to 750 metres - 30 points
   - ≥ 750 metres - 40 points
   - Distance (m): 290  
   - Points: 20

5. Major Street Operating Speed
   - Under 45 km/h - 0 points
   - 46 - 55 km/h - 5 points
   - 56 - 65 km/h - 10 points
   - ≥ 66 km/h - 15 points
   - Operating Speed: 58  
   - Points: 10

6. Major Street Crossing Distance (number of through, turning and/or parking lanes within roadway width)
   - Less than 4 lanes - 0 points
   - 4 or 5 lanes - 10 points
   - More than 5 lanes - 20 points
   - Number of Lanes: 4  
   - Points: 10

A Pedestrian Priority Signal is warranted if total points ≥ 100.

**Total Points:** 50

**Pedestrian Priority Signals Warranted:** No