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### **PEDESTRIAN CROSSING POLICY REGIONAL ROADS**

**The Transportation and Works Committee recommends the adoption of the recommendations contained in the following report, May 31, 2007, from the General Manager, Roads:**

#### **1. RECOMMENDATIONS**

It is recommended that:

1. The existing pedestrian crossing policy be amended as outlined in this report to permit the use of mid-block pedestrian signals on Regional roads.
2. A mid-block pedestrian signal be installed on Keele Street (Y.R. 6) south of Major Mackenzie Drive (Y.R. 25) in the City of Vaughan.
3. The Regional Clerk forward this report to the Clerks of each of the local municipalities and to the Chief of York Regional Police.

#### **2. PURPOSE**

The purpose of this report is to obtain Regional Council approval to amend an existing pedestrian policy to allow mid-block signalized pedestrian crossing facilities for pedestrians to cross Regional streets in areas other than intersections. Additionally, approval is required to install a mid-block pedestrian signal on Keele Street south of Major Mackenzie Drive to address a City of Vaughan Council resolution dated January 22, 2007.

#### **3. BACKGROUND**

In York Region, there has been an increased emphasis on making Regional streets more accommodating for pedestrians and transit users. With increasing levels of development in York Region, traffic volumes and congestion on Regional streets have increased significantly over recent years. As a result, it has become increasingly difficult for pedestrians to cross Regional streets in areas where pedestrian crossing signals are not located.

Although all signalized intersections in York Region have pedestrian crossing phases, pedestrians often want to cross roads at mid-block locations or at unsignalized intersections. Typically, pedestrians do not want to walk out of their way to cross at a signalized intersection and end up crossing the road in unsafe situations.

Pedestrian “generators” such as schools, condominiums, residential communities and senior citizen homes are often situated some distance away from signalized intersections, and on the opposite side of streets from pedestrian attractions such as schools, shopping plazas, churches etc.

Often transit stops, on both sides of a street, are not located at signalized intersections. Transit users are therefore expected to walk to a signalized intersection to cross the road while walking to and from transit services. Positioning transit stops only at signalized intersections forces potential patrons to walk long distances and discourages ridership. Positioning a transit stop at a mid-block or unsignalized intersection reduces walking distance, but sometimes places transit customers at risk when crossing the road.

As a result of the changes in the pedestrian environment, and considering the Region’s initiatives towards creating roadways that are more pedestrian-friendly, there is a need to revise the Region’s existing signalized pedestrian crossing policy.

### **3.1 Current Pedestrian Crossing Policy**

The Region’s current pedestrian crossing policy was approved by Regional Council in February 2002. The current policy endorses the intersection pedestrian signal as the preferred method of a pedestrian crossing a Regional road. An intersection pedestrian signal is intended to allow pedestrians to safely cross an arterial roadway at the location of an unsignalized intersection. An intersection pedestrian signal has one or more crosswalks with pedestrian heads and push buttons with traffic signals for traffic on the arterial road only. Conventional stop signs are used to control traffic on the less busy side street. Currently, there are 12 intersection pedestrian signals within York Region. Regional staff has received a total of 10 requests for pedestrian crossing devices since 2006.

### **3.2 Existing Policy Challenges**

The existing policy presents several challenges which will be addressed by the proposed amendments to the policy:

- The existing policy endorses only the installation of an intersection pedestrian signal i.e. a signalized pedestrian crossing at the location of an unsignalized intersection. The policy makes no provision for the installation of pedestrian signals at mid-block locations i.e. mid-block pedestrian signal.
- The existing policy has a pedestrian volume threshold of 100 observed pedestrians crossing a roadway over an eight-hour period. This does not account for peak-hour operations where traffic and pedestrian volumes are typically much higher and opportunities for pedestrians to cross a road safely may be at a minimum. Of particular importance is the ability of transit users to quickly and safely cross peak hour traffic streams to reach transit stops.

- The existing policy does not consider true pedestrian demand i.e. the potential number of pedestrians that would use the crossing should it be signalized. Although there may be a desire to cross a road at a mid-block location, many pedestrians may not act on that desire due to the high delays and risks associated with an uncontrolled crossing. Pedestrians may choose to rather use an alternative, more inconvenient route or may choose not to walk but rather to drive to their destinations.

## 4. ANALYSIS AND OPTIONS

### 4.1 Amended Policy

The proposed amendment to the existing policy will retain the intersection pedestrian signal as the preferred crossing facility, but will allow the installation of a mid-block pedestrian signal in special situations such as where pedestrians normally cross the road at locations too far from an unsignalized intersection, or where the location of an intersection pedestrian signal is not suitable to its proximity to other signalized locations.

Such is the case in the community of Maple where there are a high number of senior citizens buildings fronting Keele Street and a high number of senior citizens walking along Keele Street.

The existing policy restricts the installation of an intersection pedestrian crossing on Keele Street because the only unsignalized intersections are too close to other signalized intersections and present operational challenges. A mid-block pedestrian signal could be installed in a safe location between existing signalized intersections for both pedestrians and motorists.

It is now proposed that an intersection pedestrian signal or a mid-block pedestrian signal is warranted when ALL of the following conditions apply:

1. a) If during any **4 hours** of a day, the *pedestrian crossing demand (PCD)* exceeds 50 AND the number of *pedestrian crossing opportunities (PCO)* during the peak hour is less than 60.

OR

- b) If during any **2 hours** of a day the *pedestrian crossing demand (PCD)* exceeds 25 AND the number of *pedestrian crossing opportunities (PCO)* during the peak hour is less than 60.
2. The distance to the closest signalized intersection exceeds 200 metres

3. Adequate sight distance is available for both pedestrians and vehicles for the operating speed of the roadway.
4. At proposed intersection pedestrian signal locations fewer than 5,000 vehicles per day must be present on the intersecting side street approaches.
5. There is adequate street lighting to illuminate the crossing and the approaches to the crossing.

*Pedestrian crossing demand (PCD)* is the expected number of pedestrians that will utilize a pedestrian crossing after its signalization. In calculating the PCD, the expected number of children (less than 12 years old), senior citizens (more than 60 years old) and the physically disabled are weighted using a factor of 3. In other words, each child, senior citizen and physically disabled person are counted as 3 pedestrians.

The *pedestrian crossing opportunity (PCO)* index provides a measure of how difficult it is for a pedestrian to cross an uncontrolled pedestrian crossing and is calculated using walking speed, crossing width and traffic volumes. The proposed policy (*see Attachment 1*) contains more information on how the PCO index is calculated.

#### **4.2 Application of Proposed Policy – Keele Street south of Major Mackenzie Drive**

Staff conducted pedestrian surveys to determine the pedestrian demands on Keele Street south of Major Mackenzie Drive in the vicinity of a seniors building. The study measured the number of pedestrians crossing the road as well as the number of pedestrians that used alternative routes to get to their destination i.e. walking to adjacent signalized intersections.

It is estimated that approximately 80 pedestrians are expected to use this signalized crossing over a four-hour period after it is installed, of which approximately 50% will be seniors (40) , 10% children (8) and 40% adults (32).

The estimated pedestrian demand, peak hour traffic volumes and roadway geometry data were applied to the policy procedures outlined in *Attachment 1*. As a result of the review, all the warrant criteria identified in Section 4.1 are satisfied and under the policy proposed in Section 4.1 above, a mid-block pedestrian signal would be warranted.

### **5. FINANCIAL IMPLICATIONS**

It would cost approximately \$50,000 to construct a mid-block pedestrian signal on Keele Street south of Major Mackenzie Drive, in the City of Vaughan. The cost associated with the installation of the mid-block pedestrian signal is available in the approved 2007 Roads Budget.

## **6. LOCAL MUNICIPAL IMPACT**

The creation of a revised policy to allow signalized pedestrian crossings in the Region will provide a safe road network for both pedestrians and motorists in all local municipalities. All local municipalities would benefit from a consistent approach to the installation of pedestrian crossings and a uniform policy.

## **7. CONCLUSION**

With the growing urbanization of York Region, there is an increasing need for a consistent approach to allow signalized pedestrian crossings on Regional roads. This report proposes a policy for setting signalized pedestrian crossing facilities on Regional roads that will support other Regional initiatives to create urban streets that are more accommodating of pedestrians, cyclists and transit users.

When the proposed policy is applied to an existing uncontrolled pedestrian crossing on Keele Street, south of Major Mackenzie Drive, in the City of Vaughan, a signalized pedestrian crossing facility is warranted. It is therefore recommended that the Region installs a mid-block pedestrian signal at a suitable location on Keele Street.

It is recommended that the Regional Clerk forward this report to the Clerks of each of the local municipalities and to the Chief of York Regional Police.

For more information on this report, contact Brian Harrison, Director, Operations, Roads Branch at extension 5205 in the Transportation and Works Department.

The Senior Management Group has reviewed this report.

*(The attachment referred to in this clause is attached to this report.)*