

11
RIGHT TURN ON RED PROHIBITION
WARDEN AVENUE AND ENTERPRISE BOULEVARD
TOWN OF MARKHAM

The Transportation Services Committee recommends the adoption of the recommendations contained in the following report dated September 1, 2010, from the Commissioner of Transportation Services.

1. RECOMMENDATIONS

It is recommended that:

1. A westbound "No Right Turn on Red" traffic prohibition be implemented at the signalized intersection of Warden Avenue (Y.R. 65) and Enterprise Boulevard, in the Town of Markham.
2. The Regional Solicitor prepare the necessary by-law.
3. The Regional Clerk forward this report to the Clerk of the Town of Markham and to the Chief of York Regional Police, for enforcement as their resources permit.

2. PURPOSE

This report proposes a "No Right Turn on Red" prohibition for westbound traffic at the signalized intersection of Warden Avenue and Enterprise Boulevard. This turning prohibition is required in order to ensure the safe operation of the proposed exclusive transit right-of-way through this intersection. In accordance with the *Highway Traffic Act*, a Regional by-law is required before any traffic prohibition can be signed and enforced.

3. BACKGROUND

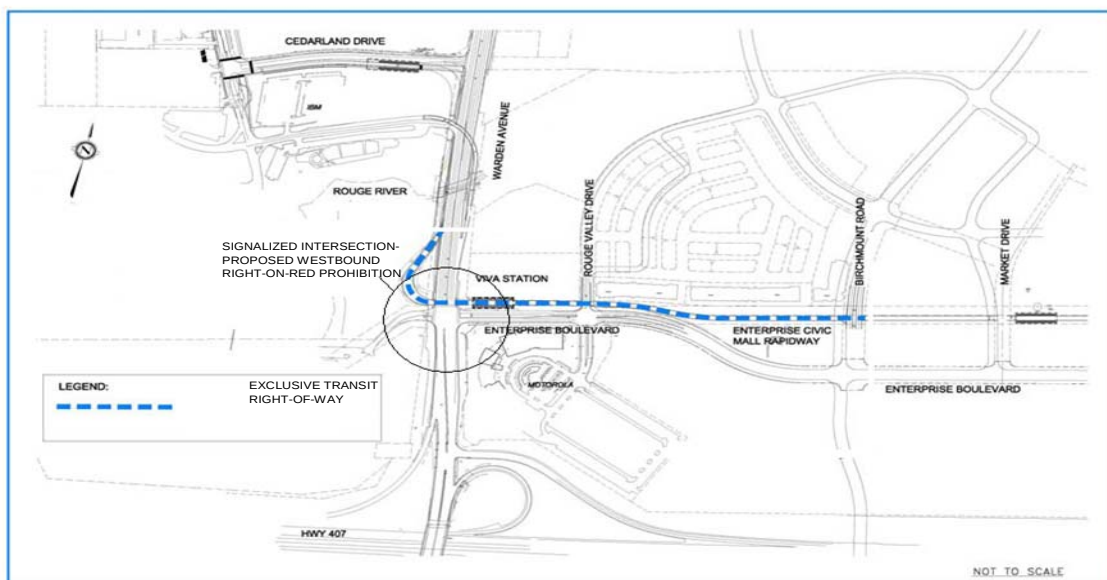
The first phase of the vivaNext rapidways is currently under construction

The first phase of the vivaNext rapidways is currently being built along Enterprise Boulevard between Warden Avenue and Birchmount Road in the Town of Markham. In conjunction with this rapidway, the intersection of Warden Avenue and Enterprise Boulevard is being reconstructed to accommodate this exclusive transit right-of-way. Construction of this first segment is expected to be complete by the end of October 2010.

The transit right-of-way will be parallel to Enterprise Boulevard crossing Warden Avenue creating two closely spaced signalized intersections

At the intersection of Warden Avenue and Enterprise Boulevard, the exclusive transit right-of-way will run parallel to and immediately north of Enterprise Boulevard. The exclusive transit right-of-way crosses Warden Avenue creating two adjacent but separate signalized intersections. A location plan is appended to this report as *Attachment 1*. These closely spaced intersections will create conflicts between westbound right turning vehicles on Enterprise Boulevard and buses travelling through the intersection on the exclusive transit right-of-way (see Figure 1).

Figure 1 – Enterprise Boulevard Exclusive Transit right-of-way



Staff have identified a potential safety concern between right turning traffic on Enterprise Boulevard and buses within the transit right-of-way

Regional staff has identified this potential safety concern as part of the review of the project. A "No Right Turn on Red" traffic prohibition is primarily used when there is reduced visibility or an unexpected conflict between right-turning traffic and other traffic within the right-of-way. In this case, the intersection of Warden Avenue and Enterprise Boulevard requires the implementation of a "No Right Turn on Red" traffic prohibition to eliminate this conflict.

4. ANALYSIS AND OPTIONS

The intersection of Warden Avenue and Enterprise Boulevard is currently signalized and will be reconstructed as part of the first phase of the vivaNext rapidways

Warden Avenue, in the vicinity of Enterprise Boulevard, is a multi-lane urban Regional arterial roadway. Enterprise Boulevard is a local roadway under the jurisdiction of the Town of Markham located approximately 800 metres south of Highway 7, just north of Highway 407. The intersection of Warden Avenue and Enterprise Boulevard is currently signalized; however, it is being reconstructed as part of the construction of an exclusive transit right-of-way which parallels Enterprise Boulevard. The lane configuration on Enterprise Boulevard will provide exclusive left and right-turn lanes separated by a single through lane for westbound traffic. The exclusive transit right-of-way, which will be designated for buses only, will provide one eastbound and one westbound traffic lane.

The exclusive transit right-of-way will be signalized with dynamic phasing to accommodate bus traffic in the right-of-way

The exclusive transit right-of-way intersection will be signalized with dynamic signal phasing to accommodate bus traffic only. General traffic will continue to use Enterprise Boulevard. When a bus on the exclusive transit right-of-way approaches and is detected by the signal equipment, the bus will receive a green indication to continue to travel east or west across Warden Avenue on the exclusive transit right-of-way. During this green indication, traffic on Warden Avenue and on Enterprise Boulevard will be facing a red signal indication. After the bus clears the intersection, other general traffic within the intersection of Warden Avenue and Enterprise Boulevard will receive an appropriate signal indication to travel through or turn.

The close proximity of two signalized intersections will create conflicts between right turning vehicles on Enterprise Boulevard and buses on the transit right-of-way

The close proximity of these two intersections will create a conflict between traffic on Enterprise Boulevard and the buses on the exclusive transit right-of-way. Although most conflicts can be eliminated through phasing of signal indications, of particular concern are westbound right turns from Enterprise Boulevard to travel north on Warden Avenue. In accordance with the *Highway Traffic Act*, completing a right turn during a red signal indication is a permitted move at a signalized intersection when there are sufficient gaps in traffic. However, at this location a vehicle completing a right turn during a red signal indication will be travelling directly into the path of buses using the exclusive transit right-of-way. A "No Right Turn on Red" traffic prohibition for westbound traffic will eliminate this conflict.

Prohibiting right turns on red can result in excessive traffic queues and staff will monitor this to ensure the prohibition is effective

A disadvantage to prohibiting right turns during a red signal indication is the level of queuing of vehicles that may result from the implementation of this type of prohibition. Accordingly, vehicles are only permitted to turn during a green signal indication and the queue length in the right-turn lane can become excessive often blocking traffic in other adjacent traffic lanes.

If the westbound "No Right Turn on Red" traffic prohibition is endorsed, Regional staff will monitor the operation of this intersection to ensure the prohibition is effective. If any other modifications are required at this intersection, staff will make the necessary recommendations in a future report.

5. FINANCIAL IMPLICATIONS

The cost associated with manufacturing and installing the required signage to implement the "No Right Turn on Red" traffic prohibition is included within the vivaNext project cost.

6. LOCAL MUNICIPAL IMPACT

Town of Markham staff has been consulted on the proposed "No Right Turn on Red" traffic prohibition at the intersection of Warden Avenue and Enterprise Boulevard and are in support of the prohibition. This prohibition is intended to eliminate conflicts between westbound right-turning vehicles from Enterprise Boulevard and buses travelling on the exclusive transit right-of-way.

7. CONCLUSION

The proposed design to construct an exclusive transit right-of-way immediately north of Enterprise Boulevard on Warden Avenue will result in safety conflicts for westbound right turning traffic. The proposed "No Right Turn on Red" traffic prohibition for westbound traffic at the intersection of Warden Avenue and Enterprise Boulevard will mitigate potential safety issues that have been introduced due to the construction of an exclusive transit right-of-way paralleling Enterprise Boulevard and the conflicts between westbound right turning vehicles and buses travelling east and west on the exclusive transit right-of-way. A by-law is required to ensure the prohibited movement is enforceable.

The Regional Clerk should forward this report and by-law to the Clerk of the Town of Markham and to the Chief of York Regional Police.

For more information on this report, please contact Steven Kemp, Director, Traffic Management and Intelligent Transportation Systems at extension 5226.

The Senior Management Group has reviewed this report.

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



LOCATION PLAN

Right On Red Prohibition
Warden Avenue and Enterprise Boulevard
Town of Markham



TRANSPORTATION SERVICES

