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PEDESTRIAN CROSSING IMPROVEMENTS YONGE STREET AND 16TH AVENUE/CARRVILLE ROAD TOWN OF RICHMOND HILL

The Transportation Services Committee recommends the adoption of the recommendation contained in the following report dated December 16, 2011, from the Commissioner of Transportation and Community Planning.

1. RECOMMENDATION

It is recommended that this report be received for information.

2. PURPOSE

This report identifies pedestrian crossing improvements implemented at the intersection of Yonge Street at 16th Avenue/Carrville Road, in the Town of Richmond Hill.

3. BACKGROUND

A resident has raised concerns regarding her daughter being struck by vehicles when crossing at the intersection of Yonge Street and 16th Avenue/Carrville Road

On July 7, 2011, Regional staff received correspondence from a resident raising concerns regarding her daughter, who has low vision, being struck by vehicles making right turns at the subject intersection on two separate occasions. In both cases, vehicles were turning right on a red signal indication when drivers did not see her daughter approaching from the left. Her daughter lives one block south of the subject intersection, and therefore crosses this intersection on a regular basis. The resident, on behalf of her daughter, has requested pedestrian crossing improvements to improve pedestrian safety for all pedestrians who use this intersection on a daily basis.

On July 29, 2011, Regional staff informed the resident the following measures would be investigated in order to improve pedestrian safety:

- Installation of audible pedestrian signals to assist pedestrians who have low vision.
- Installation of zebra crosswalk markings to improve the visibility of the crosswalk area for approaching drivers.
- Review of existing signs and pavement markings to ensure drivers are given the appropriate queue to watch for pedestrian when turning.

- Adjustments to pedestrian crossings times at the traffic signals.
- Implementation of a “No Right Turn on Red” restriction in all directions.

The intersection of Yonge Street at 16th Avenue/Carrville Road has been identified as a high collision frequency intersection on the Regional road network

Yonge Street and 16th Avenue/Carrville Road consists of a four-lane urban cross section, with exclusive left and right turn lanes in all directions, in the Town of Richmond Hill. The intersection services an average of 65,000 vehicles daily. The existing posted speed limit is 50-km per hour through the intersection. A location map of the area is appended to this report as *Attachment 1*.

The physical characteristics of this area include residential homes and high rise condominiums, as well as large commercial establishments located north of the intersection which generate large volumes of turning traffic and high pedestrian activity within the intersection at various times throughout the day.

On November 17, 2011, Regional staff submitted a report, entitled *Safety Performance on the Regional Road Network* to Council to report on the traffic safety performance of the Regional road network. The intersection of Yonge Street at 16th Avenue/Carrville Road has been identified as experiencing a high number of collisions with 173 total collisions and 26 injury collisions between 2008 and 2010.

On January 27, 2011, Council approved measures to educate and promote pedestrian safety

On January 27, 2011, Council approved various pedestrian safety initiatives to educate and promote pedestrian safety. These activities include:

- Audible pedestrian warning system pilot project on YRT/VIVA buses
- Increased pedestrian crossing time at traffic signals
- Pedestrian countdown signal installations
- Pedestrian safety campaign to encourage the safe interaction between pedestrians and motorists
- Public education campaigns that target children, teens, and seniors to help reduce pedestrian injuries and fatalities
- Revised speed limit policy
- Zebra crosswalk marking installations
- In 2011, zebra markings were installed at approximately 30 locations. Pedestrian countdown signals were installed at almost 500 signalized intersection

On November 7, 2011, a pedestrian safety campaign kick off coincided at the intersection of Yonge Street at 16th Avenue/Carrville Road. Various media outlets provided coverage of the event

On November 7, 2011, the official kick off of the pedestrian safety campaign was held at the intersection of Yonge Street at 16th Avenue/Carrville Road. The campaign kick off coincided with the end of Daylight Savings Time when pedestrians are not as visible in the late afternoon hours. The objective of this campaign is to promote awareness around three key issues affecting pedestrians, including visibility, motorists leaving space between the car and the pedestrians, speeding and aggressive driving, and to build around improving the relationship between pedestrians and motorists. This is a collaborative partnership with York Regional Police.

4. ANALYSIS AND OPTIONS

This report identifies various pedestrian crossing improvements and safety measures installed at Yonge Street and 16th Avenue/Carrville Road.

Accessible pedestrian signals were installed on October 27, 2011

On October 27, 2011, Regional staff installed the accessible pedestrian signals to assist pedestrians with low vision by providing indications that they have the right-of-way through an audible sound. The accessible pedestrian signals provide added security of knowing the correct time and direction to cross the street.

Pedestrian crossing times were increased on May 13, 2011

Since May 13, 2011, the pedestrian crossing times for pedestrians crossing the intersection of Yonge Street at 16th Avenue/Carrville Road intersection have been increased from 28 to 33 seconds to accommodate crossing times needed for young children, seniors and special needs persons. The increased pedestrian crossing times will ensure that pedestrians are able to cross the street safely and comfortably.

Zebra crosswalk markings were installed on November 6, 2011

On November 6, 2011, Regional staff installed the zebra crosswalk markings. The primary purpose of zebra crosswalk markings is to guide pedestrians to the most appropriate crossing location and to emphasize for drivers where to stop for pedestrians. Its distinguishing features of the alternating dark and light stripes on the road surface increase the coverage of the reflective pavement marking material on the road and improve the conspicuity and visibility of the pedestrian crosswalk area for both drivers and pedestrians during both day time and night time conditions.

Reducing the turning radius or restricting right turns on red can assist in reducing conflicts between pedestrians and right-turning vehicles

Turning radius refers to the arc that connects the edge of one roadway to a perpendicular roadway. A longer turning radius creates a more rounded corner which allows vehicles to enter and exit the intersection more quickly. However, the trade-off may be pedestrian safety because the use of longer turning radii increases the pedestrian crossing distance and encourages higher vehicle speeds. Regional staff are investigating the opportunity to tighten the turning radius at the intersection to improve pedestrian crossing safety.

Allowing right turns on red has long been identified as a problematic issue for pedestrians across North America in urban centres. Although pedestrians have the priority to cross the street when the walk signal is provided, drivers who turn right on a red light often only look for oncoming traffic, and fail to check blind spots for pedestrians before proceeding.

Given that there are large volumes of turning traffic and high pedestrian activity within the intersection at various times throughout the day, implementing a “No Right Turn on Red” restriction in all directions at Yonge Street and 16th Avenue/Carrville Road may be beneficial in reducing potential conflicts between pedestrians and right turning vehicles. However, the negative impact is that restricting right turns on red will increase traffic congestion and driver frustration. Restricting right turns on red may also encourage right turning drivers to be more aggressive during the green indication which would be problematic for pedestrians.

Restricting right turns on red will increase traffic congestion and driver frustration

A disadvantage to prohibiting right turns during a red signal indication is the level of vehicle queues that may result. Table 1 compares anticipated vehicle queuing and delay in each right turn lane at the subject intersection before and after the implementation of the “No Right Turn on Red” restriction during the critical hour.

Table 1
Vehicle queuing and delay comparisons

Direction	Total Delay (seconds)		Vehicle Queues (vehicles)	
	Existing Condition	With “No Right Turn on Red”	Existing Condition	With “No Right Turn on Red”
Northbound	6	26	3	8
Southbound	7	22	1	2
Eastbound	8	43	3	8
Westbound	18	48	7	12

- Synchro 7.0 analysis of intersection capacity, Highway Capacity Manual

Installing a “No Right Turn on Red” restriction only permits right-turning vehicles to turn during a green signal indication. As a result, the queue length in the right-turn lane can become potentially increase to the point where right turning vehicles block traffic in adjacent through lanes. In this specific case, there is storage available for approximately 10 vehicles in all directions. Therefore, the storage available in the westbound right-turn lane will not accommodate the expected vehicle queues after the implementation of a “No Right Turn on Red” restriction during the critical hour.

Transit riders would experience travel time increases with the implementation of a "No right turn on Red" restriction

Currently buses traveling southbound on Yonge Street are required to turn into the south bound right turn lane before Carrville Road to load and unload passengers at the stop. The implementation of a "No Right Turn on Red" restriction will increase travel time for transit riders due to the expected queuing of southbound right turning vehicles. The queue of right turning vehicles would block buses from accessing the transit stop. Relocating the transit stop to a location after the intersection would minimize the impact of a “No Right Turn on Red” restriction.

Due to the expected impact on public transit, implementation of the “No Right Turn on Red” restriction is not recommended.

The intersection of Yonge Street and 16th Avenue/Carrville Road is located within the VIVA Construction Zone

The intersection of Yonge Street and 16th Avenue/Carrville Road is scheduled for reconstruction as part of the vivaNext rapid transit initiative on Yonge Street between Highway 7 and Major Mackenzie Drive. The expected completion date is 2015. As part of the reconstruction process, Viva staff will work with the residents to incorporate their pedestrian needs, including guidance for pedestrians with low vision, to ensure temporary conditions and revised future design takes into account the needs of all road users.

Link to Key Council – approved Plans

Vision 2026 Towards a Sustainable Region - Vision 2026: Responding to the needs of our residents: Supporting Safe and Secure Communities; Addressing the Safety Needs of Vulnerable Groups

5. FINANCIAL IMPLICATIONS

The costs associated with the described pedestrian safety initiatives are included in the approved 2011 Transportation Services budget.

6. LOCAL MUNICIPAL IMPACT

There is no direct impact on the local municipalities. Regional staff will continue to work closely with staff from the local municipalities and York Regional Police to ensure pedestrian safety initiatives continue to be a priority in York Region.

7. CONCLUSION

Pedestrians are among the most vulnerable of road users. In order to ensure pedestrians and motorists share the road safely at the intersection of Yonge Street at 16th Avenue/Carrville Road, Regional staff have implemented various pedestrian safety improvements approved by Council.

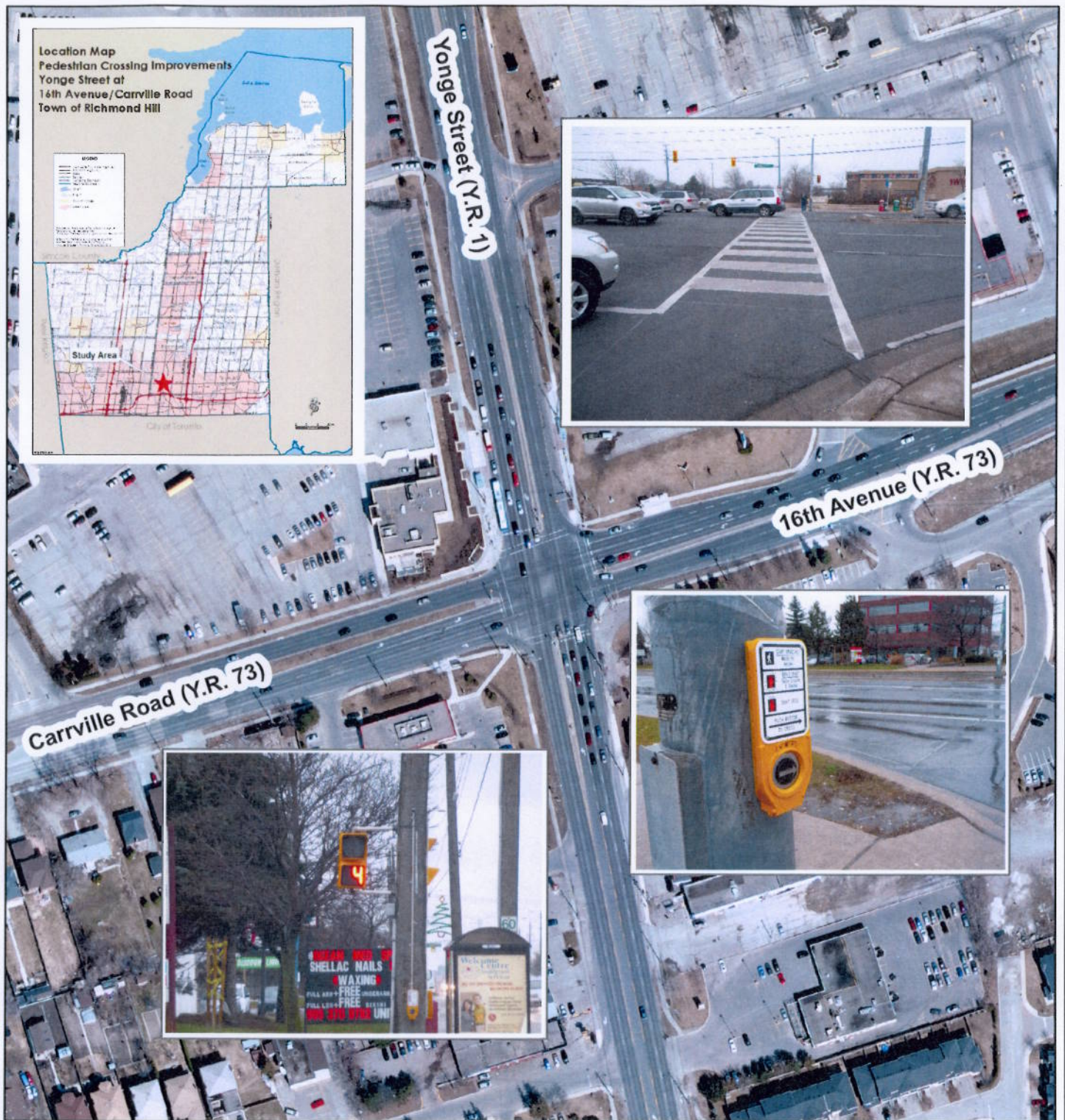
Regional staff has informed the resident of the enhancements outlined within this report. The resident has acknowledged the improvements at the intersection and is greatly appreciative of the efforts and actions taken place to help alleviate pedestrian safety concerns.

The Region will put forth continuing efforts to improve pedestrian safety on the Regional road system including, establishing a comprehensive strategy targeting all road users to create awareness and improve the relationship between pedestrians and motorists, and work collaboratively with York Regional Police to promote safe and efficient traffic operations on the Regional road system.

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

Pedestrian Crossing Improvements
Yonge Street (Y.R. 1)
at 16th Avenue/Carrville Road (Y.R. 73)
Town of Richmond Hill



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TRANSPORTATION SERVICES