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TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON MARCH 3, 2015
FROM:	EDWARD SOLDO, P.ENG. DIRECTOR, ROADS AND TRANSPORTATION
SUBJECT:	HYDE PARK ROAD AND SOUTH CARRIAGE ROAD INTERSECTION ASSESSMENT

RECOMMENDATION

That, on the recommendation of the Director, Roads and Transportation, the following actions **BE TAKEN** with respect to the intersection assessment for Hyde Park Road and South Carriage Road:

- (a) the following report **BE RECIEVED** for information; and,
- (b) the Civic Administration **BE DIRECTED** to monitor and review traffic conditions following the completion of construction for the Hyde Park Road Phase 2 Improvements.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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- June 22, 2009 – Environment and Transportation Committee – Appointment of Consulting Engineer for Class Environmental Assessment for Hyde Park Road.
- December 19, 2011 – Civic Works Committee – Hyde Park Road Improvements Environmental Study Report.
- September 9, 2013 – Civic Works Committee – Hyde Park Road Widening Phase 2 North of the Canadian Pacific Railway to North of Fanshawe Park Road Detailed Design and Tendering Appointment of Consulting Engineer.

BACKGROUND

Purpose

The purpose of this report is to provide Committee and Council with a summary of the analysis for the Hyde Park Road and South Carriage Road intersection in response to concerns received regarding the existing intersection operational safety and performance.

Context

The Civic Works Committee received a request from area residents with respect to the installation of traffic control measures at the intersection of Hyde Park Road and South Carriage Road. The Committee was advised that a petition, containing approximately 600 signatures pertaining to the matter was available for viewing. At its meeting on November 12th 2014, Council directed Civic Administration to report back on this matter,

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specifically the installation of traffic control measures at this intersection, at a future meeting of the Civic Works Committee.

The widening of Hyde Park Road between Oxford Street and Fanshawe Park Road is scheduled to be completed from two to four through lanes in 2015. This project was recommended as a result of traffic capacity deficiencies in the London Smart Moves 2030 Transportation Master Plan (TMP). The Environmental Assessment (EA) commenced in 2009 and the Environmental Study Report (ESR) was accepted by Council in 2011. The widening of Hyde Park Road - Phase 1, in the south half of the corridor is currently being constructed. The construction of Phase 2, north of the Canadian Pacific Railway, is scheduled to commence in April 2015 pending council budget approval. Construction of both phases is expected to be substantially complete by late fall of 2015, with minor carry-over works in 2016. The improvements to the intersection of Hyde Park Road and South Carriage Road are part of the scheduled work in Phase 2.

The Hyde Park Road reconstruction will provide for the coordinated installation of infrastructure for sidewalks, cycle lanes, landscaping, upgrades to storm drainage, local sanitary sewer upgrades, replacement of existing watermain, traffic signals, illumination, and noise attenuation where warranted.

Operational evaluations and traffic signal warrant analyses for all intersections were completed during the EA for the project. Hyde Park Road conveys 24,000 vehicles per day. South Carriage Road accommodates 1,500. The evaluation concluded the South Carriage intersection will operate within acceptable service levels.

DISCUSSION

The City conducts traffic counts at major intersections on a regular basis. The results are analyzed according to the traffic signal warrant where applicable and as prescribed in the Ontario Traffic Manual. The warrant attempts to optimize the timing of traffic signal installation in a manner that the safety and delay benefits of the signals will outweigh the disadvantages.

Roadway capacity is controlled by the ability of through traffic to proceed through intersections and the introduction of traffic signals reduce the road's overall ability to convey traffic. Premature traffic signal installation results in increased delays, congestion and increased collision potential. While the presence of signals at an intersection can help prevent some types of collisions (right angle); signals can also increase the frequency of other types of collisions (such as rear end collisions) when introduced when not warranted.

Intersection performance concerns are frequently received on road widening projects as access from side streets can be challenging when the arterial road is congested prior to widening. The widening Hyde Park Road from two to four lanes will significantly increase capacity and reduce traffic congestion along the corridor. The additional lanes will create more gaps in the stream of traffic since the same volume of traffic will be spread over two lanes. This vehicle-access improvement at unsignalized intersections is common and a prime example is along Oxford Road West after the most recent reconstruction and widening. This reduced congestion will make turns onto and off Hyde

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Park Road easier and reduce delays to side street traffic. In addition, a southbound left turn lane from Hyde Park Road onto South Carriage Road is being implemented to address those movements.

In addition to the analysis undertaken as part of the Environmental Assessment, further review was undertaken in response to the direction from Council.

Traffic data that was collected in the spring of 2014 was analyzed. The count was conducted at this intersection on March 24th 2014, prior to the commencement and any traffic impacts from the Hyde Park Road Phase 1 construction project. The analysis concluded that the traffic levels measured did not meet the warrant for traffic signal installation. The following is a summary of the 2014 traffic signal analysis:

Justification	Compliance, %
Minimum Volume Warrant:	34%
Delay Warrant:	34%
Combination Warrant:	not met
Collision Experience:	7% *

* Four reported collisions in total since 2007. One is deemed preventable by traffic signal installation. The collision warrant requires an average of five preventable collisions per year for three years.

For this particular analysis, a traffic signal warrant is justified if:

- either the minimum volume warrant OR the delay warrant is 100%; or,
- both the minimum volume warrant AND the delay warrant are equal to 80%.

The above analysis indicates that significant additional traffic volume growth is required to trigger the traffic signal warrant. The collision experience suggests better than average safety performance at the intersection. The analysis also included a pedestrian volume report identifying a total of 3 pedestrians crossing Hyde Park Road in 8 hours. The warrant requires 200 pedestrian crossings for an intersection pedestrian signal to be implemented.

Traffic operating conditions were also evaluated using intersection analysis software to confirm the improvement to side street traffic that is typically observed on road widening projects. Various scenarios were reviewed, un-signalized and signalized, in an attempt to determine the efficient operation at the intersection level.

Level of Service (LOS) is a qualitative measure used to relate the quality of traffic service and flow by assigning quality levels based on performance measures using letters 'A' through 'F', with 'A' being the best (free flow of traffic) and 'F' (forced or breakdown of traffic flow) being the worst. The modeling confirms that, the intersection will function at a LOS 'A', when widened without signals. The westbound left-turn delay on South Carriage Drive is forecasted to reduce to less than half the existing delays following the widening of Hyde Park Road.

Modelling was also conducted to evaluate the intersection under signalized operations in the future (2025) utilizing projected traffic flows based on planned development and a yearly growth factor of 1.5% following the widening of Hyde Park. The modeling confirms that the intersection will function at a LOS 'C', with some traffic movements operating at a LOS 'F'.

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Given the planned growth in the area, the intersection traffic volumes at South Carriage Road may warrant signals in the future. Therefore, the Phase 2 construction project includes the installation of underground conduits and related infrastructure that will enable the installation of future signals with minimal disturbance when the traffic signal warrant is met.

Following the Phase 1 and 2 Hyde Park Road Improvements, the City will continue to monitor conditions. A traffic count and warrant analysis will be undertaken at South Carriage Road once area traffic conditions stabilize post construction. As development approvals in the area proceed, the traffic volumes will be assessed to determine if a traffic signal is warranted.

SUMMARY

The construction of planned improvements in 2015 will improve traffic operations at the intersection of Hyde Park Road and South Carriage Road. Traffic signals are not required at this time, would create unnecessary delays to the 24,000 vehicles a day that utilize the roadway and would reduce the benefits of the widening that is being undertaken.

The City will continue to monitor conditions in the future as development proceeds. A updated analysis will be undertaken after the completion of construction is completed.

Acknowledgements:

This report was prepared by Ted Koza, P.Eng, Transportation Design Engineer, with the Transportation Planning & Design Division.

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