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TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON APRIL 22, 2013
FROM:	EDWARD SOLDI, P. ENG. DIRECTOR, ROADS AND TRANSPORTATION
SUBJECT:	SARNIA ROAD WONDERLAND ROAD TO SLEIGHTHOLME AVENUE ENVIRONMENTAL STUDY REPORT

RECOMMENDATION

That, on the recommendation of the Director, Roads and Transportation, the following actions **BE TAKEN** with respect to the Sarnia Road Environmental Assessment (TS1484):

- (a) The Sarnia Road Environmental Study Report **BE ACCEPTED**;
- (b) A Notice of Completion **BE FILED** with the Municipal Clerk; and,
- (c) The Environmental Study Report **BE PLACED** on public record for a 30-day review period.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

Environment and Transportation Committee – June 22, 2009 – Appointment of Consulting Engineers; Class Environmental Assessments for Hyde Park Road, Sarnia Road, Sunningdale Road

BACKGROUND

Purpose:

This report provides Committee and Council with an overview of and seeks approval to finalize the Schedule 'C' Class Environmental Assessment for improvements to Sarnia Road from Wonderland Road North to Sleightholme Avenue as shown on Figure 1.

Figure 1 - Study Area



Sarnia Road between Wonderland Road North and Sleightholme Avenue is classified as an arterial road and is currently comprised of two eastbound lanes and one westbound lane. The road is a primary route to Western University that accommodates approximately 19,000 vehicles per day. The current right-of-way is narrower than standard. Adjacent land use along the corridor is residential.

A significant amount of growth has occurred in the northwest part of the City and beyond. Traffic volumes are expected to increase on Sarnia Road in the coming years as a result of continued development in the northwest combined with roadway capacity improvements to the west including the recent Sarnia Road bridge replacement. The City's 2004 Transportation

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Master Plan (TMP) identified the need to widen Sarnia Road to four lanes between Wonderland Road North and Sleightholme Avenue and this was confirmed in the recent Smart Moves 2030 TMP. This project is identified in the Development Charges Background Study and the City's Growth Management Implementation Strategy.

DISCUSSION

Context:

Dillon Consulting Limited was retained by the City to conduct a Class Environmental Assessment (EA) for potential improvements to Sarnia Road from Wonderland Road to Sleightholme Avenue. This EA considered many factors during evaluation of the design alternatives, including:

- impact on the social environment;
- technical considerations;
- future traffic patterns; and,
- estimated costs.

Recommended Alternative

The recommended design for the widening of Sarnia Road incorporates a number of features to improve traffic flow and safety, minimize impacts, and maximize social benefits. They include:

- widening to four through lanes with turn lanes;
- removing the channelized right-turn lanes at the Wonderland Road intersection to improve pedestrian safety;
- providing provisions for future westbound double left turn lanes and possible transit priority at Wonderland Road;
- restricting turns at Leyton Crescent and Castlegrove Boulevard (west leg) for safety;
- bicycle lanes and sidewalks in both directions;
- relocation of the Intersection Pedestrian Signal (IPS) to the east side of Rippleton Road; and,
- upgrades to storm drainage.

The capital construction of this project was previously scheduled for 2012. However, this is one of several projects recently deferred for ten years as part of a Development Charges By-Law Appeal Settlement. A Development Charges Background Study is currently underway and will review the timing for implementation of the Sarnia Road improvements considered in this study.

Consultation:

Public and agency consultation was completed throughout the study. Formal points of contact included two public information centres. An additional neighbourhood meeting and presentation was conducted in response to concerns with intersection turn restrictions and to review additional alternatives. City and consultant staff also had continual contact with stakeholders and meetings with organizations such as the London Transit Commission (LTC) and emergency service providers.

Consistent with all consultation points during the study, the public, agencies and First Nations were informed of the date of this public participation meeting through a mail-out and advertisements in newspapers.

EA Issues:

The Environmental Study Report Executive Summary is contained in Appendix A. The following issues are noted:

Turn Restrictions

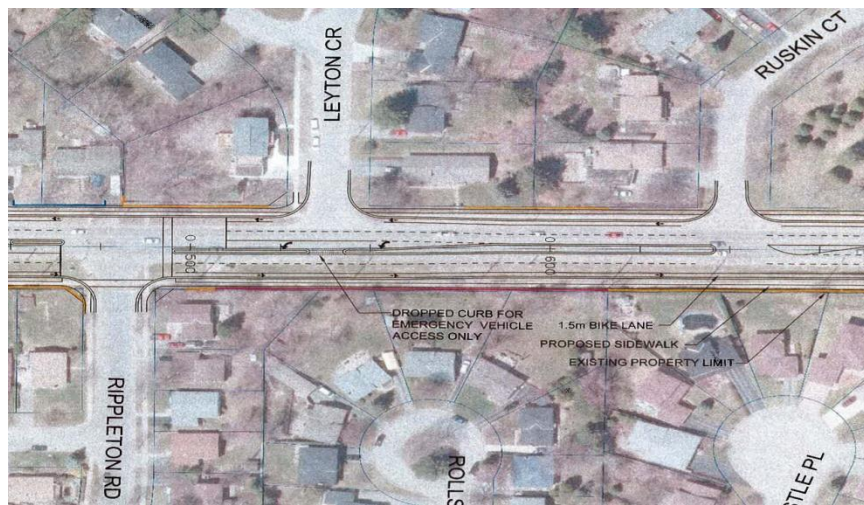
Turn restrictions are proposed at Leyton Crescent and Castlegrove Boulevard in response to safety and operational concerns. These two side streets are located in close proximity to major intersections where vehicle turn conflicts will occur with left-turn lane queues. The intersection spacing presents safety concerns due to restricted sight lines and differential speeds. The restrictions are as follows:

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Leyton Crescent / Rippleton Road

Left turns will be restricted at the Leyton Crescent intersection due to conflicts with the proposed Rippleton Road left-turn lane as shown in Figure 2. The provision of safe left turn access at both side streets is not possible due to the offset configuration of the Leyton Crescent and Rippleton Road intersections. Rippleton Road accommodates higher traffic volumes than Leyton Crescent.

Figure 2 - Leyton Crescent & Rippleton Road Intersection Design

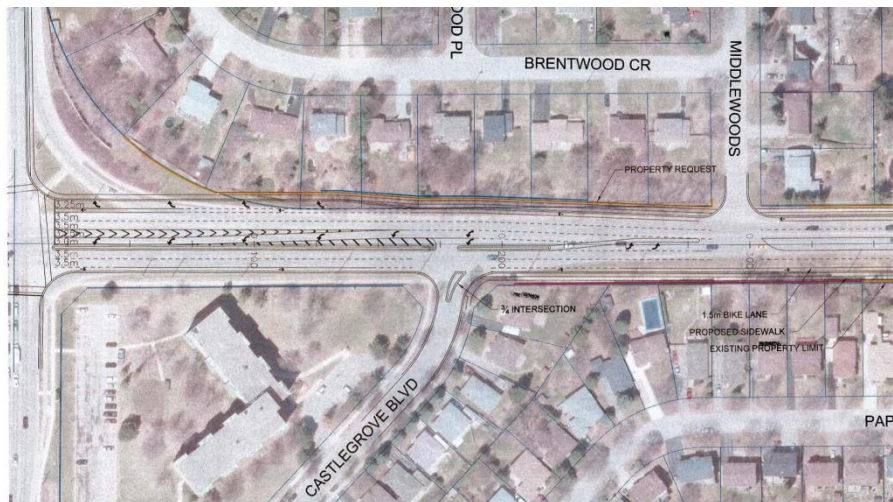


Significant objection to the proposed left turn restriction at Leyton Crescent was received from a local resident. During extensive interaction with the resident, ten additional intersection alternatives were developed and evaluated. These included allowing left-turns from the through-lane, uncommon left-turn lane configurations, side street realignments and a roundabout. None of the alternative designs were recommended due primarily to safety and operational concerns and increased social impacts. However, the proposed design was revised to enable full access to emergency vehicles to alleviate concerns related to emergency response times. An additional neighbourhood meeting was held to present the additional alternatives and receive additional public input.

Castlegrove Boulevard

Left-turns out of the west leg of Castlegrove Boulevard will be restricted during the initial phase of the Wonderland Road intersection (before dual left-turn lanes are implemented) as shown on Figure 3. This is recommended to prevent side street vehicle conflicts with queues in the left-turn lane approaching the Wonderland Road intersection. The Wonderland Road left turn is a high volume maneuver.

Figure 3 - Castlegrove Boulevard Intersection Design



The initial phase is able to accommodate a left-turn lane for turns into Castlegrove Boulevard so only outbound left-turns will be restricted. When dual-left turn lanes are implemented at the

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Wonderland Road intersection in the future, it will be necessary to restrict left-turns in *and* out of Castlegrove.

Stormwater Management

A Stormwater Management (SWM) Strategy Impact Assessment and Cost Benefit Study was completed to determine cost-effective SWM mitigation measures to address changes on major overland flow routes through public and private lands resulting from the project. The study included preliminary hydrologic modelling and assessed viable storm/drainage and SWM alternatives with consideration of capital construction, long-term infrastructure operational/maintenance, replacements and flood impact costs. The considered alternatives evaluated proposed retention/detention SWM storage and estimated capital cost to mitigate an increase of major flows associated with Sarnia Road widening.

The study’s SWM strategy recommended an “Incremental Storage” solution whereby incremental increases in runoff rate and volume resulting from the road widening would be attenuated and released at existing runoff rates. This strategy recommended constructing an underground SWM retention/detention system due to the constraints associated with a fully developed corridor with no existing SWM facilities. However, the system will not eliminate existing major overland flows discharges from the Sarnia Road corridor at outlet locations. This study also assessed potential construction of larger SWM storage volumes to improve the level of service of major overland flow routes, however, the physical constraints and costs did not justify the capital expenditures required to capture and store these flows.

The recommended SWM mitigation measures for this phase of Sarnia Road widening will be revisited and refined in the Mud Creek Subwatershed Study Update that is presently underway.

Property

Property acquisition is required from residential backyards on the north side of Sarnia Road, between Middlewoods Crescent and Wonderland Road North. Small day lighting triangles are also required at Rippleton Road (southwest and southeast corners) and at Leyton Crescent (northwest corner) to accommodate sidewalk. Private property working easements will be required for the construction of noise walls in accordance with City Policy 25(12).

Noise

Consistent with City Policy 25(12) for Noise Barriers on Arterial Roads Widenings, the EA reviewed the need for noise attenuation where noise protection is not currently in place. Development in this area occurred during the 1950s to late 1970s before noise mitigation was required as part of the development process. Therefore much of the corridor is adjacent to exposed residential backyards with no mitigation. Noise barrier walls are the only feasible method of noise attenuation due to the narrow width of the Sarnia Road right-of-way and noise walls will be installed where warranted.

Costs:

The preliminary cost estimate for the project is \$8.2 million. This is broken down as follows:

Preliminary Cost Estimate	Estimated Cost (2013 dollars)
Road Construction	5,720,000
Watermain Upgrades	40,000
Sanitary Upgrades	10,000
Street lighting and Traffic Signals	520,000
Contingency (10%)	640,000
Engineering	840,000
Land	200,000
Utility Relocations	250,000
TOTAL	8,220,000

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The above estimate will be used to update the project budget considered in the Development Charges Background Study and presented in the Capital Budget Forecast.

CONCLUSION

Summary and Next Steps:

1. A Schedule 'C' Class Environmental Assessment for improvements to Sarnia Road from Wonderland Road North to Sleightholme Avenue has been undertaken.
2. The Environmental Study Report is ready for final public review. It was prepared with public and agency participation, and includes a preliminary design which provides mitigation measures for impacts associated with the widening.
3. Completion of this phase of the Municipal Class Environmental Assessment process requires that the ESR be placed on the public record for a 30-day review period.
 - Stakeholders are encouraged to provide input and comments regarding this study during this time period.
 - Should stakeholders feel that issues have not been adequately addressed, they provide written notification within the 30-day review period to the Minister of the Environment requesting further consideration.
 - Subject to no requests for a Part II Order being received, the project will be in a position to move forward to the design and construction stages in accordance with the recommendations of the study.
4. Property acquisition and design activities can commence once the EA is completed and implementation timing is determined through the Development Charges Bylaw.
5. The timing of the capital construction will be reviewed by the Development Charges Background study currently underway.

Acknowledgements:

This report was prepared with assistance from Josh Ackworth, C.E.T. Technologist II of the Transportation Planning & Design Division.

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REVIEWED & CONCURRED BY:	
JOHN BRAAM, P.ENG. MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES & CITY ENGINEER	

Attachments: Appendix A – Environmental Study Report, Executive Summary

c: Transportation Advisory Committee c/o Heather Lysynski
 Jeff Matthews, Dillon Consulting Limited

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Appendix A

**ENVIRONMENTAL STUDY REPORT
EXECUTIVE SUMMARY**

INTRODUCTION

Sarnia Road, an east-west arterial road in the northwest area of the City of London extends approximately 5 km, from Hyde Park Road in the west to the University of Western Ontario (Western Road) at the east limit. It is one of the primary access points from the west end of the City to the university as well as to the downtown. The City has experienced a significant amount of growth in the northwest end over the last several years, including in Hyde Park and along the Sarnia Road corridor, west of the CP Rail corridor. In addition, a number of areas west of the City continue to experience growth in single family residential development.

As a result of continued growth in northwest London, as well as roadway capacity improvement projects, traffic volumes on Sarnia Road are expected to steadily increase over the next few years. The City's 2004 Transportation Master Plan (TMP) identified the need to widen Sarnia Road to four lanes between Wonderland Road North and Sleightholme Avenue by 2014. The City's capital program had identified the widening be completed in 2012, however due to budgeting constraints, it was deferred to 2022 by Council. The City's 2012 TMP, which was completed subsequent to starting this Environmental Assessment (EA), confirms the need to widen Sarnia Road to four lanes. Sarnia Road immediately west of Wonderland Road North will be widened to four lanes in the spring of 2013, which is a continuation of the widening completed between Oakcrossing Gate and Aldersbrook Road, along with a new structure over the CP Rail corridor that was completed in 2011. The plan also identifies the need to optimize (including provide transit priority measures) Sarnia Road from Western Road to Wonderland Road North.

The City of London retained Dillon Consulting Limited to complete the Preliminary Design and Class Environmental Assessment (EA) for widening Sarnia Road between Wonderland Road North and Sleightholme Avenue as a Schedule C project following the Municipal Class EA.

The lands adjacent to Sarnia Road are primarily low-density residential development, with higher density residential at the southeast corner of the Sarnia Road/Wonderland Road North intersection. There are no natural areas within the corridor.

PROPOSED IMPROVEMENTS

The major features of the preferred design include:

- Widen Sarnia Road to four through lanes, from Wonderland Road North to Sleightholme Avenue
- Wonderland Road North intersection:
 - Remove the right-turn channelizations

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- Provide provisions for a future westbound double left turn lanes. Dual left turn lanes will be provided as warranted by traffic volumes. There is potential for transit priority measures to be considered when the dual left turn lane is warranted, based on other City initiatives
- Castlegrove Boulevard (west leg):
 - Construct a raised median island, with a drop curb, so that northbound left turns on to Sarnia Road are restricted. The drop curb provides full access for emergency services vehicles
 - Westbound left turns from Sarnia Road to Castlegrove Boulevard will be maintained until the dual westbound left turns are warranted at Wonderland Road North. At that time, Castlegrove Boulevard will be restricted to a right-in/right-out at Sarnia Road
- Relocate Intersection Pedestrian Signal east of Rippleton Road
- Rippleton Road intersection:
 - Westbound left turn lane will be provided on Sarnia Road to facilitate full movements at the intersection
- Leyton Crescent intersection:
 - Left turn movements restricted at this intersection through a raised median island on Sarnia Road. A drop curb will be provided to permit full access by emergency services
- Noise barriers will be provided along the corridor where required and as determined to be technically and economically feasible as per by-law 25(12) Noise Barriers on Arterial Roads.

Construction will be completed over one construction season, with one lane of traffic maintained in each direction. Based on 2012 dollars, construction is anticipated to cost approximately \$8.2 Million.

TRAFFIC

Existing Conditions

Within the study area, Sarnia Road currently carries approximately 20,000 vehicles per day. It has two eastbound lanes, while westbound reduces to a single lane between Sleightholme Avenue and Wonderland Road North. There are two traffic signals in the study area at the Wonderland Road North and Sleightholme Avenue intersections. There is also an Intersection Pedestrian Signal (IPS) on the west side of the Rippleton Road intersection.

The overall levels of service for the signalized intersections are reasonable; however, the Sarnia Road/Wonderland Road North intersection currently experiences capacity constraints during the PM peak hour. The northbound through, southbound through and westbound left turn movements were found to still be approaching their capacity with optimized traffic signal timings, during the PM peak period. Average delays for westbound left turning motorists are identified to be greater than 60 seconds/vehicle.

The analysis of the unsignalized intersections identified that northbound left turn movements from Castlegrove Boulevard and Rippleton Road onto Sarnia Road currently experience significant delays during peak periods. During the AM peak hour the average delays for these

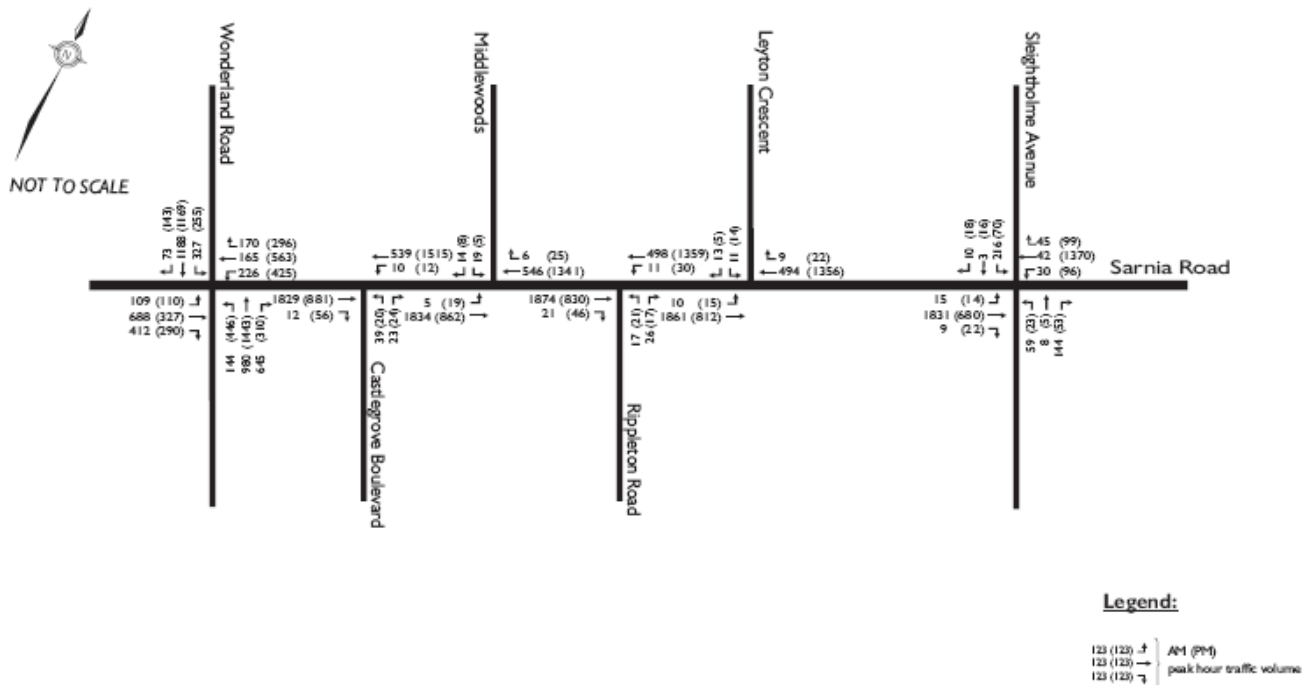
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movements were calculated to be approximately 3.5 minutes/vehicle at Castlegrove Boulevard and almost 2 minutes/vehicle at Rippleton Road. As delays increase, motorists, out of frustration, typically become increasingly willing to “take chances” by accepting smaller gaps in traffic flow to avoid further delay. The resulting increased potential for both right angled and rear-end collisions affects the safety for all motorists through these intersections. At Castlegrove Boulevard this would exacerbate existing safety concerns due to the proximity of the intersection to Wonderland Road North and the traffic queuing that results through the intersection.

Projected Travel Demands

The Sarnia Road/Wonderland Road North intersection is projected to experience significant delays during peak periods, with the PM peak hour the busiest time period. Without improvements to the corridor, significant safety concerns would be created. During the AM peak hour it is estimated that by 2017, the average delay experienced by motorists on Castlegrove Boulevard and Rippleton Road would be approximately 15 minutes and 7 minutes per vehicle respectively.

2017 Travel Demands



There are three London Transit routes with scheduled service in the area. There is currently no cycling infrastructure within the study area. The City’s 2005 Bicycle Master Plan identifies the study area as a Primary Commuter Route for cyclists.

PUBLIC AND AGENCY CONSULTATION

Public and agency consultation was completed throughout the study and included two Public Information Centres (PICs) as well as a neighbourhood meeting.

The comments received were in favour of the proposed widening of Sarnia Road. Significant objection to the proposed right-in/right-out at Leyton Crescent were received from two local residents. Due to the current spacing and configuration of the Leyton Crescent and Rippleton Road intersection along Sarnia Road, it is not technically possible to provide left turn access into

Agenda Item # Page #

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both side streets from Sarnia Road. Due to the existing road network in the neighbourhood south of Sarnia Road, maintaining full access to Rippleton Road was considered a priority over Leyton Crescent. As a means of addressing concerns raised by the residents, ten additional options for the intersection were prepared and a neighbourhood meeting was held to present the additional alternatives and address the comments that were received. To alleviate some concerns related to emergency vehicle with the right-in/right-out configuration, the design was revised to include a drop curb at the median to permit emergency vehicles full access.

IMPACT ASSESSMENT AND MITIGATION MEASURES

Widening Sarnia Road will result in temporary impacts due to construction and permanent impacts, including turning movement restrictions at some intersections, property requirements and loss of vegetation. The City is committed to minimizing potential effects through a combination of design and construction techniques.