Oxford Street West and Gideon Drive Intersection Improvements Class Environmental Assessment Study

Project File Report Executive Summary

Final

April 11, 2022

Prepared for:

London
CANADA

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City of London

In Association With:

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RVA 205505

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Introduction

In response to ongoing and future developments on the west side of the City of London, Ontario, the recent extension of Kains Road, and associated increases in traffic volumes along Oxford Street West and Gideon Drive, the City of London are planning for improvements to the Oxford Street West, Gideon Drive and Kains Road intersection. In addressing the need to address operational and safety improvements at the intersection in consideration of future development and associated traffic demands, the study considered upgrades and accommodation of underground services (watermain, storm and sanitary sewer).

This project followed the Schedule 'B' process of the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, amended in 2007, 2011 & 2015).

This report summarizes the Class EA that was conducted to select the preferred solution for improvements to the Oxford Street West and Gideon Drive in the City of London. The study area is outlined in the figure below.

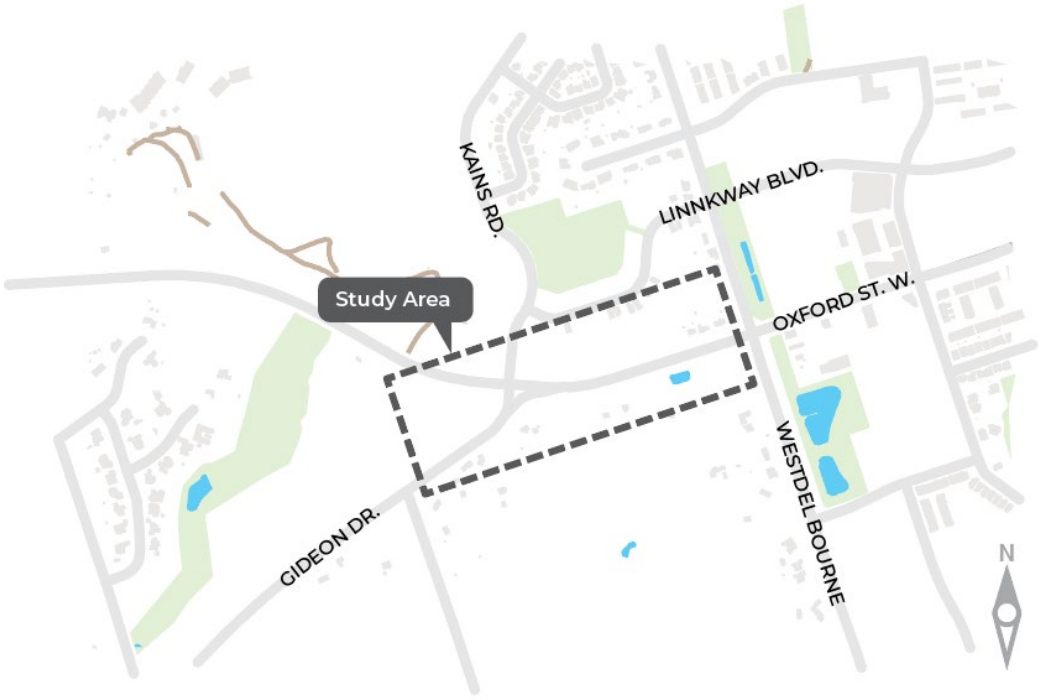


Figure ES 1 – Study Area

Study Objectives

The study was completed to review opportunities to address:

- Traffic operations and safety
- Active transportation (walking, cycling) needs
- Support the City's Climate Emergency Action Plan goals
- Roadway drainage improvements and stormwater management
- Upgrades and accommodation of underground services (watermain, storm and sanitary sewer) as required

Study Schedule

The EA study was initiated in February 2021. Key dates throughout the study were as follows:

Table ES 1 – Study Schedule

EA Stage	Date
Notice of Study Commencement	February 23, 2021
Notice of PIC	November 4, 2021
Public Information Centre	November 17, 2021
Notice of Study Completion	May 2022 (expected)

Existing Conditions

Various technical studies were completed to assess the existing conditions and potential impacts of the alternatives being considered. Studies included: Transportation and Traffic Study, Environmental Impact Study (EIS), Cultural / Built Heritage Assessment, Stage 1 & 2 Archaeological Assessment, Stormwater Management Study, Roadway Lighting Analysis, and Preliminary Geotechnical Investigation.

The findings of these studies were incorporated into the problem and opportunity statement, and the evaluation of alternative solutions.

EA Phase 1 ~ Problem & Opportunity Statement

Per Phase 1 requirements of the Municipal Class Environmental Assessment process for a Schedule 'B' project, a "Problem and Opportunity Statement" was

prepared following the assessment of the existing conditions within the study area to identify the various problems and opportunities to be addressed throughout the study.

The Study Problem & Opportunity Statement developed for the project is comprised of the following key elements:

- The Oxford Street West and Gideon Drive intersection does not balance the full range of potential users within the community, including users of all ages and abilities, pedestrians, cyclists, potential future transit vehicles and motorists.
- The existing Oxford Street West and Gideon Drive intersection does not accommodate projected traffic volumes.
- The need to support the City's Climate Emergency Action Plan goals
- Ensure that existing watermains and sewers in the vicinity of the intersection are positioned to provide opportunities for future connection to designated development lands.

EA Phase 2 ~ Alternative Solutions

Under Phase 2 of the Class EA process, all reasonable solutions to the problem are identified and described, including the "Do Nothing" alternative. The evaluation of alternatives was completed in one step, or Phase in accordance with Schedule 'B' class EA requirements. Alternative solutions were reviewed for the Oxford Street West and Gideon Drive intersection, as follows:

1. **Do Nothing** – Maintain existing condition of Oxford and Gideon
2. **Signalized Intersection** – Improvements consist of installation of traffic signals, crosswalks and cycling facilities
3. **Single-Lane Roundabout Intersection** – Implement a single lane roundabout, crosswalks and cycling facilities
4. **Multi-Lane Roundabout Intersection** – Implement a multi-lane roundabout with additional lanes to accommodate heavier traffic movements. Install crosswalks and cycling facilities.

The Project Team considered criteria that represent the broad definition of the environment as described in the EA Act to comparatively evaluate the alternative solutions. The general evaluation criteria used in evaluating the alternative solutions and design concepts are outlined in the table below.

Table ES 2 – Evaluation Criteria

Criteria	Description
Transportation Operations and Safety	How will the alternative serve the existing and future vehicular, pedestrian and cycling traffic needs? (*e.g. Intersection improvements, Active Transportation, Sightlines*)
Socio-Economic Environment	What impacts will the alternative have on the local community (*e.g. compatibility with area land use, impacts on local businesses, property requirements, access restrictions, etc.*)?
Natural Environment and Climate Change	How does the alternative affect existing vegetation, water quality, fisheries/wildlife and habitat? Does the alternative address climate change and align with City's Climate Action Plan?
Cultural Heritage / Archaeological	Will the alternative affect archaeological, cultural heritage resources or Indigenous communities?
Costs	What is the capital cost of the alternative? What is the cost for utility relocations and property acquisitions? What are the operation and maintenance costs?

Evaluation Methodology and Ranking System

The project team comparatively ranked each alternative solution from least desirable to most desirable, for each of the criteria described above, to determine the preferred solution(s).

The figure below demonstrates the rating scale used in the evaluation of alternative solutions described below.

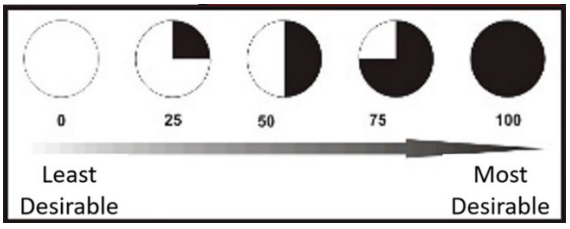
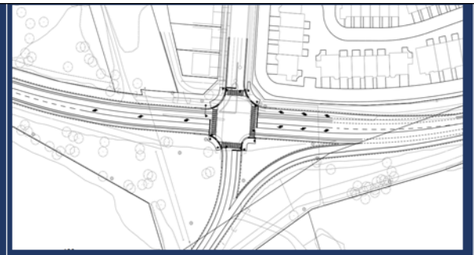


Figure ES 2 – Alternative Solution Rating Scale

Evaluation

The table below summarizes the evaluation of alternative solutions completed for the Oxford Street West and Gideon Drive Intersection.

Table ES 3 – Oxford Street West and Gideon Drive Intersection Alternatives Evaluation

EVALUATION CRITERIA	1. Do Nothing		 2. Signalized Intersection		 3. Single-Lane Roundabout		 4. Multi-Lane Roundabout	
TRAFFIC OPERATIONS & SAFETY	○	Does not accommodate projected traffic volumes, with no traffic calming benefits, no safety improvements, and no accommodation of crossing pedestrians and cyclists.	◔	Partially addresses traffic safety and projected volumes, with improved pedestrian & cyclist accommodation, and no traffic calming benefits.	◕	Accommodates most of projected traffic volumes, with notable traffic calming benefits, overall safety improvements for all road-users, pedestrian crossing facilities, and routing cyclists around the intersection.	●	Accommodates projected traffic volumes, including future widening of Oxford Street West, with notable traffic calming benefits, overall safety improvements for all road-users, pedestrian crossing facilities, and routing cyclists around the intersection.
SOCIO-ECONOMIC ENVIRONMENT	◕	Does not require property to implement. No introduction to urban community to the east.	◕	Does not require property to implement. No introduction to City of London urban community to the east.	●	Does not require property to implement. Roundabout acts as introduction to City of London urban community to the east.	●	Does not require property to implement. Roundabout acts as introduction to City of London urban community to the east.
NATURAL ENVIRONMENT	◕	No impacts to natural environment features and no opportunity for improvements.	◑	Minimal potential water quality/quantity impacts from additional impervious surface mitigated by SWM controls, there are opportunities to provide landscaping, potential reducing in wildlife mortality.	◕	Minimal potential water quality/quantity impacts from additional impervious surface mitigated by SWM controls, there are opportunities to provide landscaping, potential reducing in wildlife mortality.	◕	Minimal potential water quality/quantity impacts from additional impervious surface mitigated by SWM controls, Climate Change Resilience and mitigation, with reduction in vehicle idling and associated noise and air quality impacts. .
CULTURAL HERITAGE	●	No impact to archaeological or built heritage resources.	●	No impact to archaeological or built heritage resources expected as works to remain within existing ROW (to be confirmed).	●	No impact to archaeological or built heritage resources expected as works to remain within existing ROW (to be confirmed).	●	No impact to archaeological or built heritage resources expected as works to remain within existing ROW (to be confirmed).
COST	●	No capital cost to implement and no utility relocation costs.	◕	Cost for new signal equipment and intersection lighting. Civil costs for asphalt, curb, sidewalk, and other grading/drainage alterations	◕	No cost for signals; increased lighting requirements. Additional platform required to accommodate roundabout. Increased traffic staging requirements during construction.	◕	No cost for signals; increased lighting requirements. Additional platform required to accommodate roundabout. Increased traffic staging requirements during construction.
OVERALL SCORE	14.0		13.0		17.0		18.0	
EVALUATION SUMMARY	Not Recommended		Not Recommended		Not Recommended		Recommended to be Carried Forward	

Preferred Solution

Based on the comparative evaluation that was undertaken, and incorporating feedback from the public and agencies, the preferred solution was identified to be Alternative 4: Multi-Lane Roundabout Intersection, as shown in the image below.

This solution addresses the identified traffic operational and capacity requirements, including potential future widening of Oxford Street West, will act as an effective traffic calming feature with no enforcement required, and serves as a gateway into the urban community east of the intersection and provides improved pedestrian and cyclist facilities.

The roundabout intersection would also provide designated pedestrian and cycling crossing facilities for the Thames Valley Trail heading west of the intersection and for the Thames Valley Parkway off-road multi-use path to proposed new developments at the southeast quadrant of the intersection.

It is noted that the signalized intersection, single-lane roundabout and multi-lane roundabout were assigned similar scores for capital cost. The calculated costs were not considered significantly different (within approximately 5%) to be distinguishable. A signalized intersection requires traffic signals and a similar pavement area to a roundabout. A roundabout does not require traffic signals but requires more roadway lighting. The multilane roundabout requires slightly more pavement area however a portion of that is taken by the central island. The multilane roundabout also accommodates future widening which provides for future savings. All alternatives require the same stormwater management measures, active transportation treatments and landscaping.

For Traffic Operations and Safety the multi-lane roundabout scored better than the single-lane roundabout due to improved overall traffic operations and reduced traffic queues. The multi-lane roundabout provides the same separated AT facilities as the single-lane roundabout however users will be required to cross an extra lane on two of the four approaches. A multi-lane facility on Oxford Street is considered to be an ultimate future condition as noted in the City's Transportation Master Plan.

Figure ES3 – Preferred Solution

Municipal Services Recommendations

While there are no new watermain or sanitary sewer services proposed as part of this study, there are planned new developments in the area adjacent to the intersection. As such, a Servicing Strategy to meet the future servicing requirements of these properties was developed to accommodate the servicing requirements of the area, once built out.

The study recommendations include the protection of the existing watermains and private water service, in addition to a potential new watermain connection, to be addressed during the development and site plan review process. The study recommendations also provide protection for a potential future sanitary sewer connection to the south on Gideon Drive and to the east along Oxford Street West, to the existing maintenance hole located on the north side of the intersection on Kains Road.

A Stormwater Management Strategy was developed to identify and address water quantity, water quality, water balance related stormwater runoff impacts that are associated with the proposed roadway alignment and roundabout design. Enhanced swales equipped with check dams will accommodate the roadway drainage from the study area. There is no increase in stormwater management flows to Tributary C as a result of the proposed intersection works.

During detailed design, further coordination with planned developments will be required to confirm the municipal servicing strategy (water, wastewater, and stormwater) and staging.

Illumination Recommendations

Preliminary pedestrian and roadway illumination recommendations were developed based on the analysis of the existing illumination levels present within the study area, and the proposed intersection and active transportation improvements.

Based on the analysis completed, illumination is recommended to be provided for the new roundabout along the roadway approaches, at the pedestrian crosswalks, and along the adjacent sidewalks.

Impacts, Mitigation & Monitoring

The key impacts associated with the implementation of the proposed solution and general mitigation required have been identified as summarized below.

Natural Environment and Climate Change

Natural Environment

The Study Area is located in a landscape which is transitioning from rural residential and agricultural land use to a commercial and urban residential one, with sections of preserved natural areas associated with wetlands, watercourses or other designated features. Tributary C, a coldwater stream with a resident Brook Trout (Salvelinus fontinalis) population, is the primary watercourse in and adjacent to the Study Area. This feature is associated with Significant Valleylands, Significant Wildlife Habitat (SWH) and a Provincially Significant Wetland (PSW) and is regulated by the Upper Thames River Conservation Authority (UTRCA).

The project is not expected to have any significant, long-term negative impacts on the natural environment. Further analysis of impacts in the next phase of design will be required to determine the potential effects of the project on the water balance and implications to the PSW and Tributary C.

Opportunities for ecological benefits exist in the control and removal of invasive species, as well as revegetation of the area post-construction with native grasses, forbes, and shrub species with a focus on wildlife and pollinator habitat.

Groundwater and Surface Water Resources

The movement of water between groundwater and surface-water systems can lead to the mixing of their water qualities. High quantities of nutrients or other dissolved chemicals in surface water could be transferred to the connected groundwater system. The drainage study conducted for this assignment recommends enhanced swales and flow check dams within the swales to promote filtering of pollutants before they reach downstream watercourses and for infiltration to support groundwater recharge.

There are no municipal water wells adjacent to the study area, however there are private wells. As such, it is recommended that a water well survey to obtain background information to any private wells within a 500 meter area is completed prior to construction to assist the City in case of any well complaint during

construction, and that a monitoring and contingency plan is implemented for any well complaint during construction.

Should proactive dewatering be required during construction, a permit to take water (PTTW) will be obtained, and all required monitoring of groundwater impacts will be undertaken at that time.

Climate Change

Recommendations developed for the roadway include extensive provision for pedestrians and cyclists, including connection to a multi-use path thereby providing access to the Thames Valley Trail and Thames Valley Parkway. Encouraging active transportation through increased pedestrian and cyclist facilities supports the reduced use of vehicular traffic and GHG emissions.

In addition to the active transportation measures, it is recognized that traffic utilizing a roundabout generally produces fewer air emissions than traffic at a signalized intersection. This is a result of the continuous movement of traffic through roundabouts, reducing vehicle delay times, idling, and associated air emissions in comparison to a signalized intersection.

With regards to the project's resilience to climate change, the impact of climate change on drainage and stormwater management quality and quantity was a key consideration in the study recommendations. The improvements to stormwater management infrastructure are anticipated to mitigate the impacts of increased severity and frequency of storms

Property Requirements

The avoidance of property requirements was a key criterion in the identification and evaluation of the alternative solutions by the project team.

There is one property at the north-west corner of the intersection that is impacted by all the alternatives. The existing property boundary protrudes into the road allowance relative to adjacent properties and the drainage culvert under the driveway is privately owned.

As part of this study, it is recommended that the City acquire sufficient frontage from the property to take ownership and maintenance of the privately owned culvert as it conveys drainage from within the public road allowance.

Preliminary discussions have been held with the property owner, and they are aware of the proposed improvements and impacts to the property, however further discussions should be continued through detailed design.

Utility Impacts

Based on the EA, street lighting / utility pole conflicts are expected and will require relocations to implement the preferred solution. No impacts to utility poles along Kains Road within the study area are anticipated.

All utility impacts, including location, depths, and relocation requirements are to be confirmed early on in the subsequent detailed design phase of the study in direct consultation with the affected utility companies.

Cultural Heritage and Archaeological Resources

Cultural Heritage Resources

While it was determined that no direct impacts to identified cultural heritage resources are anticipated as a result of implementing the preferred alternative, indirect impacts associated with construction related vibrations, associated with the implementation of the study recommendations, may have an indirect impact on the structures on the properties at 1976 Oxford Street West, 2012 Oxford Street West, 14 Gideon Drive and 80 Gideon Drive.

To ensure that these structures are not adversely impacted during construction, pre-condition surveys should be undertaken during detailed design to determine whether the structures will be vulnerable to vibration impacts during construction. Should this survey conclude that the structures on any of the identified properties will be subject to vibrations, a vibration monitoring plan should be prepared and implemented.

Additional mitigation measures developed for each potentially indirectly impacted cultural heritage resource include establishing no-go zones with fencing to avoid properties of cultural heritage value and reviewing the impact assessment completed as part of the EA during detailed design to amend or revise as needed.

Archaeological Resources

Based on the Stage 1 & 2 Archaeological Assessment completed as part of the study, it was determined that the entire study area has been previously disturbed (ditches, road, and buried utilities). As such, the study area has been cleared of archaeological potential.

Technical Agency & Public Consultation

Public Consultation is a key feature of environmental assessment planning projects. Input received from the public and various stakeholder groups, potentially affected Indigenous communities, as well as from provincial ministries, agencies, and authorities can generate meaningful dialogue between the project planners and the public. This consultation allows for the exchange of ideas and the broadening of the information base, leading to better decision-making during the study.

Public Information Centre

One Public Information Centre (PIC) was held during the EA study, during Phase 2 of the MCEA process. Given the ongoing COVID-19 pandemic, associated restrictions on public gatherings, and in the interest of public health, the PIC was held online. The PIC was held on November 17, 2021, from 5 p.m. to 7 p.m. through a Virtual Public Meeting format hosted on the City of London's Zoom account.

Residents were invited to call-in to the meeting or watch the presentation live-stream on the City's website. All attendees were encouraged to provide comments and feedback on the material presented and the study in general. Attendees were also encouraged to submit additional comments by email or mail following the open house.

City of London Staff and Advisory Committees

City of London staff provided technical review of supporting studies and Class EA materials throughout the study. In addition to the technical review provided by relevant City staff, the project team met with, and provided presentations to, several City of London advisory committees during the EA. Presentations were provided to the following: Environmental and Ecological Planning Advisory Committee (EEPAC), Transportation Advisory Committee (TAC), Cycling Advisory Committee (CAC), and the London Advisory Committee on Heritage (LACH).

Technical Agencies

Various government agencies, authorities and interest groups were informed of the Class EA Study commencement, as well as the public information centres, through local newspaper notices, and direct mailings (paper & electronic).

During the course of the EA study, correspondence was received from various technical agencies including the Ministry of the Environment, Conservation and Parks (MECP), County of Middlesex, utility companies, the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI), Upper Thames River Conservation Authority, and the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF).

Comments and inputs from these key technical agencies were considered throughout the Class EA.

Indigenous Communities Communications

Various Indigenous communities were notified of the study, in order to identify any potential issues or concerns regarding possible impacts to Aboriginal and Treaty Rights, or any other interests or questions that the community may have with regard to this study. The following Indigenous Communities were notified of the study:

- Aamjiwnaang First Nation
- Bkejwanong Territory (Walpole Island)
- Caldwell First Nation
- Kettle and Stony Point First Nation
- Chippewa of the Thames First Nation
- Munsee-Delaware Nation
- Delaware Nation at Moraviantown
- Oneida Nation of the Thames
- Oneida of the Thames First Nation

Correspondence was received from Chippewa of the Thames First Nation, Caldwell First Nation, and Oneida Nation of the Thames, however, no Indigenous Communities identified concerns regarding possible impacts to Aboriginal and Treaty Rights during the study.

Preliminary Construction Timeline & Cost Estimates

Preliminary Construction Timeline

Construction is anticipated to commence in 2024, and last one construction season. The anticipated timeline for the proposed works is outlined in the table below.

Table ES 4 – Preliminary Timing Summary

Activity	Timing
Detailed Design	2022 – 2023
Utility Relocations and Property Acquisition	Late 2023
Construction	2024

Preliminary Cost Estimate

A preliminary cost estimate has been prepared for the construction of the recommended design. The preliminary cost estimate to complete the reconstruction of the roadway and intersection is $5,638,200, as shown in the table below.

Table ES 5 – Preliminary Cost Estimate

Item	Cost
Miscellaneous / General (Bonding, Insurance, Traffic Control, Pre-Condition Surveys)	$388,500
Removals	$829,725
Storm Sewers and Culverts	$180,000
Sanitary Servicing	$210,000
Roadworks	$1,767,050
Streetlighting	$302,000
Hydro Relocation and Property Acquisition	$140,000
Subtotal	**$3,817,275**
Engineering & Construction Administration (20%)	$763,455
Contingency (20%)	$763,455
Total	**$5,340,000**

Additional Work and Approvals

Detailed Design Commitments

The following additional work is required during detailed design to confirm findings from the Class EA phase and to further refine the design:

- Consider separated cycling & pedestrian facilities (i.e., separate sidewalk and bike lane) as a substitute for the recommended multi-use path facility
- Confirm and obtain required approvals and necessary permits as outlined below
- Confirm construction staging and traffic management plans for the road reconstruction
- Confirm municipal servicing (water, wastewater, and stormwater) strategy and staging in consultation with planned developments adjacent to the study area
- Review the traffic calming requirements on the adjacent road networks to discourage potential cut through traffic during construction
- Conduct a well inventory and implement a well monitoring program during construction
- Review the need for condition surveys of vulnerable homes and structures prior to construction
- Develop a plan to deal with the transportation and disposal/reuse of any excess soils under O. Reg 406/19
- Continue consultation with utility companies and coordinate utility relocations
- Incorporate recommendations of the Cultural Heritage Resource Assessment if any identified cultural heritage resources within the corridor are impacted
- Finalize mitigation measures and requirements for construction work.

Permits & Approvals

The following approvals have been identified as potentially being required prior to the implementation of the proposed works.

- Works which bisect the Upper Thames River Conservation Authority (UTRCA) regulated lands, will require an UTRCA Work Permit under O. Reg. 157/06.

- A Permit to Take Water will be required from the MECP if dewatering exceeds 50,000 but less than 400,000 litres per day. Environmental Activity and Sector Registry would be required, should dewatering exceed 400,000 litres per day.
- An Environmental Compliance Approval could be required prior to construction to ensure that the proposed works comply with MECP guidelines for the design of sanitary sewage systems, storm sewer systems and/or water systems.

Notice of Study Completion and Final Project File Report

In accordance with the requirements of the Municipal Class Environmental Assessment (MCEA) – Schedule 'B', a Notice of Study Completion is anticipated to be issued in late May. Through issuance of the Notice of Study Completion, the Project File Report (PFR), documenting the planning process undertaken, details of the study recommendations as well as potential impacts and mitigation measures identified through EA study, will be placed on the public record for the mandatory 30-day review period.

The Notice of Study Completion will also advise the public that during the 30-day review period, a request may be made to the Ministry of the Environment, Conservation and Parks (MECP) for an order requiring a higher level of study (i.e. requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g. require further studies), on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights.

Following the close of the 30-day public review period, the MECP has an additional 30 days to consider the project and review any potential Section 16 Order requests submitted during the 30-day public review period. The City may not proceed with the project for at least these 30 days following the end of the public review period.

Following this 30-day MECP review period, the project may proceed to detailed design and construction, provided the ministry is not reviewing Section 16 Order requests related to the project, and subject to any other permits and approvals that may be required.