

Report to Civic Works Committee

To: Chair and Members
Civic Works Committee

From: Kelly Scherr, P.Eng., MBA, FEC
Deputy City Manager, Environment and Infrastructure

Subject: Arva-Huron Water Transmission Main Municipal Class
Environmental Assessment Master Plan – Notice of
Completion

Date: June 22, 2021

Recommendation

That on the recommendation of the Deputy City Manager, Environment and Infrastructure, the following actions **BE TAKEN** with respect to the Arva - Huron Water Transmission Main Municipal Class Environmental Assessment Master Plan:

- (a) The Arva-Huron Water Transmission Main Municipal Class Environmental Assessment Master Plan Executive Summary attached as Appendix 'A', **BE ACCEPTED**;
- (b) A Notice of Completion **BE FILED** with the Municipal Clerk; and,
- (c) The Project File for the Arva Pumping Station to Huron Street Water Transmission Main Municipal Class Environmental Assessment Master Plan **BE PLACED** on public record for a 45-day review period.

Executive Summary

Purpose

The purpose of this report is to identify the preferred short-term and long-term alternatives for the Arva-Huron Water Transmission Main Municipal Class Environmental Assessment Master Plan - Schedule 'B' and recommend filing the Notice of Completion for the study to initiate the 45-day public review period. A 45-day review period is being recommended instead of the statutory 30-day period to allow additional review time due to the uncertainties resulting from the current Covid-19 pandemic.

Context

The City of London has a robust water transmission and distribution system, with one of the main water transmission mains being located between Arva Pumping Station and Huron Street. This water transmission main has reached over half of its remaining useful life and it is important to develop asset management strategies to maintain it in the short-term as well as consider re-routing of the transmission main in the long-term to allow for easier maintenance and reduced impact on developed and environmental areas.

A Municipal Class Environmental Assessment Master Plan has been completed to consider the potential need to widen the existing transmission main easement to continue ongoing monitoring of the condition of the watermain and/or for potential maintenance, repair or replacement of the existing watermain. Long-term considerations included evaluating alternative options for routing the watermain between the Arva Pumping Station and Huron Street in total or for specific sections. The routing options investigated addressed long-term transmission capacity needs and redundancy.

Linkage to the Corporate Strategic Plan

This recommendation supports the following 2019-2023 Strategic Plan areas of focus:

- Leading in Public Service:
 - Trusted, open, and accountable in service of our community;
 - Exceptional and valued customer service; and
 - Leader in public service as an employer, a steward of public funds, and an innovator of service.
- Building a Sustainable City:
 - London's infrastructure is built, maintained, and operated to meet the long-term needs of our community

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

- Award of Consulting Engineering Services for Arva-Huron Water Pipeline Municipal Class Environmental Assessment Master Plan – RFP 19-53 Civic Works Committee Report November 19, 2019

2.0 Discussion and Considerations

2.1 Background

The City of London receives approximately 85% of its water supply from the Lake Huron Water Supply System. Water from the Lake Huron Water Supply System is pumped into the City's water distribution system from the north via the Arva Pumping Station and Reservoirs. The Arva-Huron Water Transmission Main is the link between the Arva Pumping Station and the City's water distribution system and is therefore a very critical asset as it is responsible for 85% of our water supply.

Currently, there are two 1050mm watermains supplying water from the Arva Pumping Station to Fanshawe Park Road in London. Between Fanshawe Park Road and Huron Street there is a single transmission main, which is predominantly 1050mm and increases to 1350mm for a short section before reaching the chamber near Huron Street Maitland Street. This chamber is currently being relocated to the intersection of Maitland St and Regent St.

The majority of the aforementioned water transmission main was constructed in 1966 in green field areas. Since then, development has occurred resulting in homes being constructed adjacent to the water transmission main. These developments occurred through agreements and legal easements were put in place to allow for access and maintenance of the water transmission main. The water transmission main contains sections that traverse through residential areas, through the Thames River and through land that is prone to flooding. All of these factors make maintenance and/or replacement activities difficult.

The purpose of this Municipal Class Environmental Assessment Master Plan is to identify preferred short-term and long-term asset management practices as well as a preferred long-term water transmission main re-routing option. In November 2019, the City of London appointed Aecom Canada Ltd. to undertake this work.

3.0 Key Issues and Considerations

3.1 Preferred Alternatives

The evaluation of both short-term and long-term alternatives was completed with consideration to socio economic, cultural environment, natural heritage, technical and

financial considerations. The preferred recommended alternatives are as follows:

Short-Term Alternative - Maintain Easements as is (minimum 15m or 50') - Ensuring access is maintained for maintenance and repairs (no structures or obstructions are within the easement) without widening the easement except to the minimum 15m or 50', or where opportunities present themselves to safely widen the easement wherever possible with property owner and City consent.

Long Term Alternative - Twin the transmission main along Adelaide Street to add system capacity and redundancy with a connection to the existing transmission mains at Fanshawe Park Road and on Regent Street.

3.2 Public/Stakeholder Consultation

As part of the study, one Virtual Townhall for property owners along the Fanshawe Park Road to Huron Street portion of the project and one Virtual Public Information Centre were conducted. Public notices were issued throughout the course of the study to notify approval agencies, local stakeholders, Indigenous communities and the public of the status of the project, provide notification of the virtual meetings, and to invite feedback on the project. The Virtual Townhall was held on June 25th, 2020 and the Virtual Public Information Centre was held on November 25th, 2020, both using the Zoom platform. In addition to the Public Information Centre, a Virtual Open House was created online.

3.3 Agency Comments

Comments were received from the Ministry of Heritage, Sport, Tourism and Culture Industries, Ministry of Natural Resources, Ministry of Environment Conservation and Parks and the Upper Thames River Conservation Authority. All comments were addressed in the Municipal Class Environmental Assessment Master Plan except for a Cultural Heritage Evaluation Report being requested by the Ministry of Heritage, Sport, Tourism and Culture Industries for the long-term alternative, which will be completed at the detailed design stage.

3.4 First Nations Engagement

The City distributed all EA notices, including Notice of Commencement and PIC invitation to all area First Nations communities. Chippewas of the Thames First Nation advised the project is within the London Township Treaty (1796) to which they are a signatory and within the Big Bear Creek Additions to Reserve land selection area. Based on a review of project information they determined that the project is of minimal concern. A request to have the opportunity to participate in any Archaeological studies was made.

3.5 Natural Heritage, Archeological, and Cultural Considerations

Delegation status and a presentation was made to the Environmental and Ecological Planning Advisory Committee on May 20, 2021. The committee's response was supportive. The only questions asked pertained to the installation date of the existing transmission mains and the existing maintenance and monitoring parameters that are in place. Formal comments from the Environmental and Ecological Planning Advisory Committee are to be provided within a month of the meeting date.

Delegation Status and a presentation to the London Advisory Committee on Heritage (LACH) will be made on June 9, 2021.

4.0 Financial Impacts/Considerations

The short-term recommendation includes an asset management strategy consisting of maintenance, monitoring, and upgrading tasks. Costs estimates were provided for these asset management tasks for both the year 2021 as well as years 2022 to 2040 when the watermain is expected to reach the end of its useful life. The estimate for 2021 asset management tasks is \$700,000 and for years 2022 to 2040 is \$9,700,000. There is sufficient funding within the current multi-year budget to complete this work over the budget period. Ongoing funding for monitoring and maintenance will be included in future multi-year budget submissions.

The long-term recommendation, which addresses the eventual replacement of this infrastructure, includes the installation of a new single or twinned water transmission main(s) from the water chamber on Regent Street to Adelaide Street, north on Adelaide Street, west on Fanshawe Park Road and connecting to the existing twinned water transmission mains on Fanshawe Park Road. The cost estimate for the single water transmission main is \$20,000,000 and for the twinned water transmission mains is \$32,000,000. It is recommended to construct the new transmission main(s) in several phases to reduce the financial burden to the City, and to coordinate with other road and utility work where possible to reduce traffic congestion and long road closures in major developed areas. This work will be incorporated in the 20-year plan and included in future multi-year budget submissions.

A risk analysis was completed if no short-term asset management or long-term re-routing of the water transmission main were to be done. The consequence of failure due to the location of the existing main is quite high and would result in \$164,000,000 if the entire main were to fail. This amount includes potential damage caused by failures as well as the costs due to the disruption and loss of water supply.

Conclusion

The Arva-Huron Water Transmission Main Municipal Class Environmental Assessment Master Plan - Schedule 'B' was undertaken to identify preferred short-term and long-term alternatives for the asset management of the water transmission mains. The preferred alternatives provide strong technical solutions and substantially mitigate consequence of failure and environmental impacts. Staff recommend that the preferred servicing alternatives identified in the Municipal Class Environmental Assessment Master Plan be posted for a 45-day public review period.

Prepared by: Aaron Rozentals, GDPA, P.Eng., Division Manager,
Water Engineering

Submitted by: Scott Mathers, MPA, P. Eng., Director, Water,
Wastewater, and Stormwater

Recommended by: Kelly Scherr, P. Eng., MBA, FEC
Deputy City Manager, Environment and Infrastructure

CC: Stephen Romano

Executive Summary

Introduction and Background

The City of London (the City), through its consultant, AECOM, has completed a Municipal Class Environmental Assessment (Class EA Master Plan) Schedule B to evaluate short- and long-term solutions to maintain and twin the existing high pressure potable water transmission main(s) from the Arva Pumping Station to Chamber 13 on Huron Street. The City is supplied with water from two lake-based sources, 85% comes from Lake Huron utilizing the Lake Huron Water Supply System (LHWSS) and 15% comes from Lake Erie utilizing the Elgin Area Water Supply System (EAWSS). The City utilizes several water storage facilities including the Arva Reservoir (owned and operated by the LHWSS) that supplies water to the north portion of the City. The Arva Pumping station to Huron Street transmission main is the 'main artery' for water supply and distributes potable water to the City's water storage facilities and distribution system. The LHWSS transmission main has been partially twinned from the South Huron Water Treatment Plant (WTP), located north of Grand Bend to the Arva Reservoir and Pumping Station. In 1984, the City twinned its transmission main southerly from the Arva Reservoir and Pumping Station to Fanshawe Park Road, which allows for the LHWSS and the City to provide transmission main redundancy and increased capacity in addition to improved maintenance and operations. South of Fanshawe Park Road, the single transmission main travels through several residential properties, which poses some challenges to inspect, maintain, and repair the transmission main and other infrastructure along the route. The transmission main age is approximately 60 years of its potential 100 year expected lifetime and is not expected to be replaced in the short term. As a result, continuous monitoring, inspections and repairs are expected and may increase over its remaining lifetime.

Consultation

The involvement of the community – residents, approval agencies, stakeholders, Indigenous communities, and those who may be potentially affected by a project – is an integral part of the Class EA process. The purpose of the Class EA study consultation process is to provide an opportunity for stakeholder groups and the public to gain an understanding of the study process, contribute to the process for the development and selection of alternatives/design concepts, and provide feedback and advice at important stages in the Class EA process. Specifically, the objectives of the consultation efforts are to:

- generate awareness of the project and provide opportunities for involvement throughout the planning process; and
- facilitate constructive input from public and agency stakeholders at key points in the Class EA process, prior to decision-making.

A consultation program was incorporated into the study to meet the above objectives. The consultation program included:

- Posting project milestones on the City of London website;
- Conducting meetings with agencies and stakeholders at key phases during the project (**See Report Section 3**);
- Publishing notices in The Londoner and the City's project website (<https://london.ca/projects/arva-pumping-station-huron-street-water-transmission-main-master-plan>) for all project milestones (**See Report Section 3.1, Table 3.1**);
- Notifying stakeholders, affected residents, the general public and review agencies regarding project milestones;
- Conducting two virtual open houses, one for the property owners between Fanshawe Park Road and Huron Street and one for the general public to inform the public, review agencies and stakeholders and obtain input; and
- Issuing a Notice of Completion.

Identification of the Problem/Opportunity

The Class EA Problem / Opportunity statement provides the basis for the need and justification for this project and is presented below:

The City receives approximately 85% of its water supply from the LHWSS, making the water transmission main that transports this water a critical and important asset. The water transmission main from the Arva PS and Reservoir to Huron Street was constructed in 1966 and ranges in condition, having fair and good sections. Several portions of the pipe south of Windermere Road and north of the Thames River were proactively replaced in 2017 and the existing easement (50' / 15m wide) was not adequate to allow for replacement by traditional means. Portions of the transmission main run through the backyards of residents where easements are in place and access to repair the transmission main via these easements could be difficult, especially if there are obstacles such as decks, sheds, trees, etc. within the easement and in close proximity to the water transmission main.

The MCEA process provides the City the opportunity to develop a short-term strategy and solution that assess the existing easements in place to ensure maintenance access can be properly completed, and the possibility of increasing easement widths to allow for easier access or maintaining the easements at their current width and enforcing the City's rights to access if maintenance and/or repairs are required. The process also provides an opportunity for a long-term solution to be developed by examining twinning of the transmission main in other locations to provide a redundancy of supply and service future growth. This long-term solution also provides the possibility of decommissioning and abandoning the existing water transmission main once it has reached its service life.

Short- and Long-Term Alternative Solutions

A list of alternative solutions to meet the project needs was established for both the short- and long-term alternatives. The list was subject to a review and screening process that considered the ability to maximize the use of existing infrastructure, impacts to residents, communities, and existing infrastructure; and the avoidance of excessive capital and operating costs.

Short-term requirements involve regular inspections and maintenance of the transmission main(s), chambers, valves and associated appurtenances to ensure optimal operation of the transmission main, and to facilitate emergency repairs in the event of a transmission main failure. Three short term alternative solutions were developed for evaluation including:

- **Alternative 1: Do Nothing** – no maintenance improvements or changes would be undertaken to address current and future requirements. This represents what would likely occur if none of the other alternative solutions were implemented. All monitoring, maintenance and repair that the City currently undertakes on this transmission main would continue as per current conditions.
- **Alternative 2: Maintain Easements as is (minimum 15m or 50')** - This Alternative would maintain the current easements in place without increasing them, but would require removing or relocating obstructions that impede or prevent access to the transmission main to enhance ongoing maintenance and/or repair needs.
- **Alternative 3: Widen the Easement to greater than 15m or 50' where possible** – This alternative would have the existing easements widened to greater than 15m wherever possible, to allow for easier access to the transmission main to enhance ongoing maintenance and/or repair needs.

For the long-term, solutions to eventually replace the single transmission main and associated valve chambers, located on several privately owned properties between Fanshawe Park Road and Huron Street are required, in addition to providing redundancy of supply and additional supply for future growth servicing purposes. The current location of this infrastructure makes it difficult to access, maintain, repair, and twin the existing infrastructure in the future. Several alternatives to twin the single transmission main were reviewed and analyzed including:

- 1- **Alternative 1:** Do nothing, where no twinning is considered from Fanshawe Park Road to Huron Street;

- 2- **Alternative 2:** Twin the transmission main along Adelaide Street with connections to the existing transmission main(s) via Medway Road, Sunningdale Road, or Fanshawe Park Road and ending at the new relocated Chamber 13 on Maitland Street at Regent Street (**See Figure ES-1**); and
- 3- **Alternative 3:** Twin the transmission main along Richmond Street ending at the new relocated Chamber 13 on Maitland Street at Regent Street. Several options for connections to Richmond Street included:
 - a. **3A:** Twin the transmission main along Richmond Street with a connection via Medway Road or Fanshawe Park Road (**See Figure ES-1**);
 - b. **3B:** Twin the transmission main along Richmond Street via Windermere Road and the existing easement between Windermere Road and Huron Street, or via Huron Street (**See Figure ES-1**).

Evaluation of Short - Term Alternative Solutions

A qualitative evaluation was undertaken for the evaluation of short-term existing transmission main maintenance alternatives based on Socio-Economic, Cultural Environment, Natural Heritage, Technical and Cost criteria, including environmental components that address the broad definition of the environment as described in the Environmental Assessment Act, to assist in determining the best possible solution.

A summary of the evaluation matrix is shown in **Table ES-1**. For a comprehensive evaluation in matrix form see the full evaluation of the short-term alternative solutions as shown in **Table 6-3** of the Report.

Table ES-1: Short Term Alternatives Evaluation Matrix Summary

Evaluation Criteria Category	Alternative 1	Alternative 2	Alternative 3	Rationale
Socio Economic				<ul style="list-style-type: none"> • Alternative 3 requires significant property/easement agreements • Alternatives 1 restricts quick access to the transmission main in an emergency
Cultural Environment				<ul style="list-style-type: none"> • Alternative 1 and 2 have minimal impact due to less chance of encroachment into areas of significance • Alternative 3 would have more impact due to clearing obstructions <u>and</u> adding easement width.
Natural Heritage				<ul style="list-style-type: none"> • Alternative 1 would have lowest impact. Greater impact if emergency works are required • Alternatives 2 and 3 would have greater impact due to removal of obstructions and/or for the increased easement width
Technical				<ul style="list-style-type: none"> • Alternative 1 does not facilitate easy access for repairs • Alternative 3 provides easier access allowing for lower Monitoring and Maintenance costs.
Economic/Financial				<ul style="list-style-type: none"> • Alternative 1 has high costs associated with access in an emergency due to obstacles • Alternative 3 has very high costs associated with significant property and easement agreements

Overall Alternative Rating				<ul style="list-style-type: none"> Alternative 2 does not require additional easements or property Alternative 2 has lowest costs associated with easement agreements and emergency repairs
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Low Impact is considered preferred compared to moderate or high impact

Legend	Low Impact	Low to Moderate Impact	Moderate Impact	Moderate to High Impact	High Impact	Preferred Alternative Solution

Based on the criteria and methodology applied as part of the evaluation process, the preferred Short-term maintenance alternative is **Alternative 2 - Maintain Easements as is (minimum 15m or 50')**. (See Figures 8.1 - 8.3 in Section 8 of the Report). This short-term alternative ensures access to the existing transmission main(s) for ongoing monitoring, maintenance and/or repair purposes using the easements in place without requiring the purchase of additional easements or property..

Evaluation of Long - Term Alternative Solutions

A qualitative evaluation was undertaken for the evaluation of long-term twinning alternatives to add system capacity and/or redundancy based on the above referenced criteria, including environmental components that address the broad definition of the environment as described in the Environmental Assessment Act, to assist in determining the best possible solution.

A summary of the evaluation matrix is shown in **Table ES-2**. For a comprehensive evaluation in matrix form see the full evaluation of the long-term alternative solutions as shown in **Table 7-3** of the Report.

Table ES-2: Long-Term Twinning Alternatives Evaluation Matrix Summary

Evaluation Criteria Category	Alternative				Rationale
	1	2	3A	3B	
Socio Economic					<ul style="list-style-type: none"> Alternative 1 high impacts in an emergency due to 15m or less easement widths Alternative 3A and 3B may require easements or property acquisition. Alternative 2 no apparent property easements or acquisitions required. Alternatives 2 and 3 have similar construction impacts.
Cultural Environment					<ul style="list-style-type: none"> Alternative 2 and 3B have higher potential for Archaeological impacts. Alternative 3B has the highest potential for cultural heritage impacts.
Natural Heritage					<ul style="list-style-type: none"> Alternative 1 has high impacts for repairs in significant terrestrial areas. Alternative 2 has the most water crossings, and a greater potential to Impact SAR

					<ul style="list-style-type: none"> Alternative 3A has less water crossings and a lower potential to impact SAR Alternative 3B has fewer but more significant water crossings than 3A, a higher potential to impact SAR and a greater impact to climate change due to reduced carbon sequestration capacity resulting from vegetation removal
Technical					<ul style="list-style-type: none"> Alternatives are technically (hydraulics/water quality) equal except Alternative 1 which would require increased monitoring and maintenance. Alternative 3A and 3B have a greater design complexity
Economic / Financial					<ul style="list-style-type: none"> All Alternatives have similar costs associated with them. Alternative 1 has high emergency repair costs.
Overall Alternative Rating					<ul style="list-style-type: none"> Alternative 1 has significant emergency repair impacts Alternative 2 the least impacts and the clearest route for twinning

Low Impact is considered preferred compared to moderate or high impact

Legend	Low Impact	Low to Moderate Impact	Moderate Impact	Moderate to High Impact	High Impact	Preferred Alternative Solution

Based on the criteria and methodology applied as part of the evaluation process, the preferred long-term twinning alternative is **Alternative 2: Twin the Transmission Main Along Adelaide Street** to add system capacity and redundancy with a connection to the existing transmission mains at Fanshawe Park Road and on Regent Street. (See Figure ES-2). The preferred long-term alternative also provides an opportunity for eventual decommissioning of the existing water transmission main between Fanshawe Park Road and Huron Street in the future. See Section 8 of the Report for complete Short- and Long-Term Project descriptions.

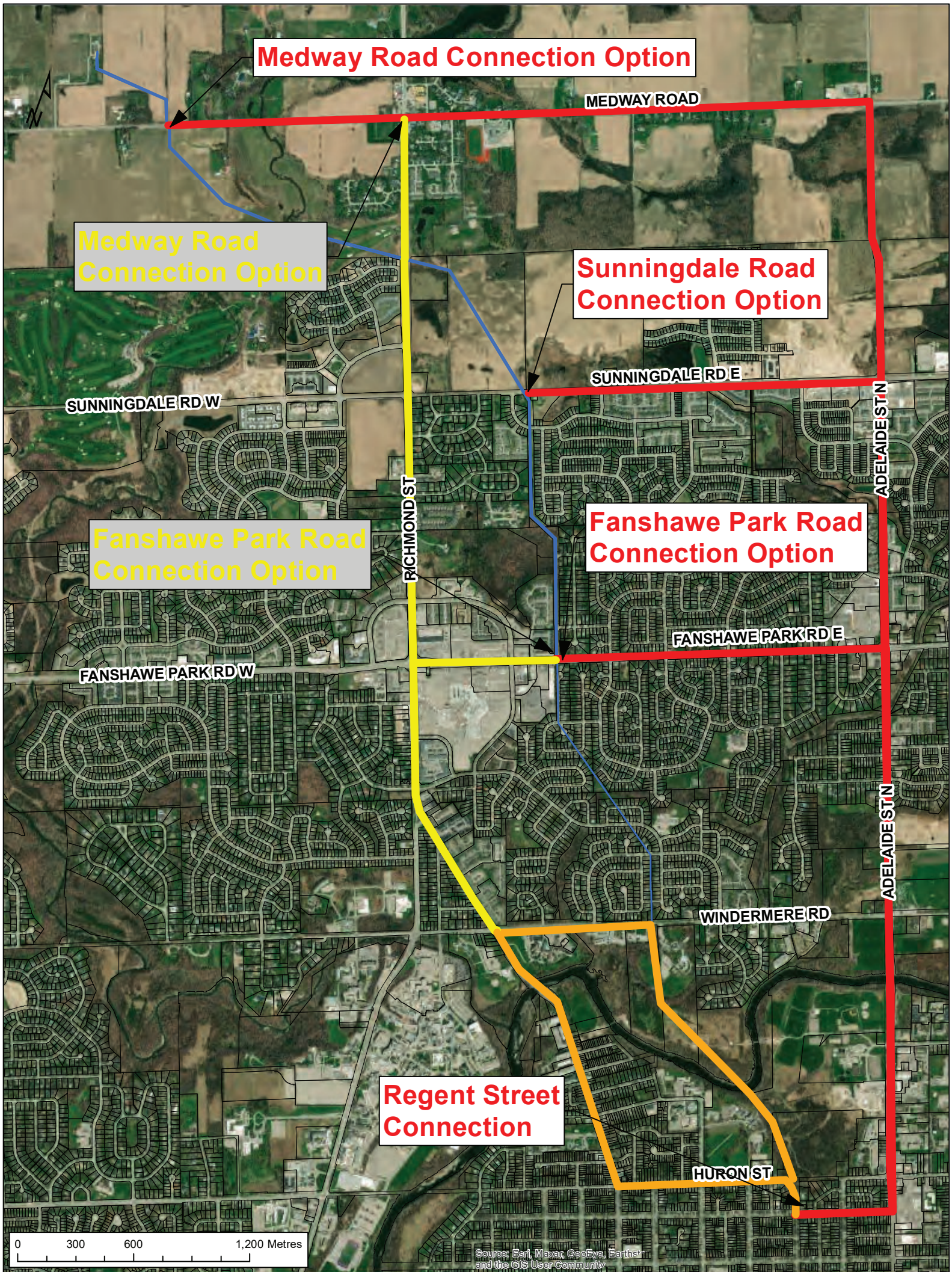
Preliminary Short- & Long-Term Cost Estimates

The estimated costs for upgrades, inspections, maintenance, and repairs over a 20-year period for the preferred short-term alternative is approximately \$10,400,000.

The estimated costs for placing the transmission main along Adelaide Street with connections on Fanshawe Park Road and Regent Street for the preferred long-term alternative is approximately \$20,000,000 for a new single main, and \$32,000,000 for twinned mains.

Recommended Mitigation Measures / Monitoring

It is recommended to complete the mitigation and monitoring tasks outlined in Section 9 of the Report during detailed design for the preferred Short and Long-Term alternatives:



Medway Road Connection Option

MEDWAY ROAD

Medway Road Connection Option

Sunningdale Road Connection Option

SUNNINGDALE RD E

SUNNINGDALE RD W

Fanshawe Park Road Connection Option

Fanshawe Park Road Connection Option

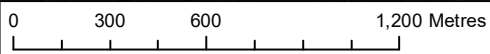
FANSHAWE PARK RD E

FANSHAWE PARK RD W

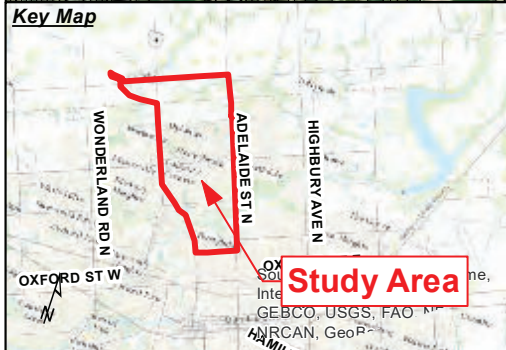
Regent Street Connection

WINDERMERE RD

HURON ST



Sources: Esri, Maxar, GeoEye, Earthstar and the GIS User Community



**City of London
Arva Pump Station to Huron Street
Water Transmission Main
Municipal Class Environmental Assessment
Master Plan**

Legend

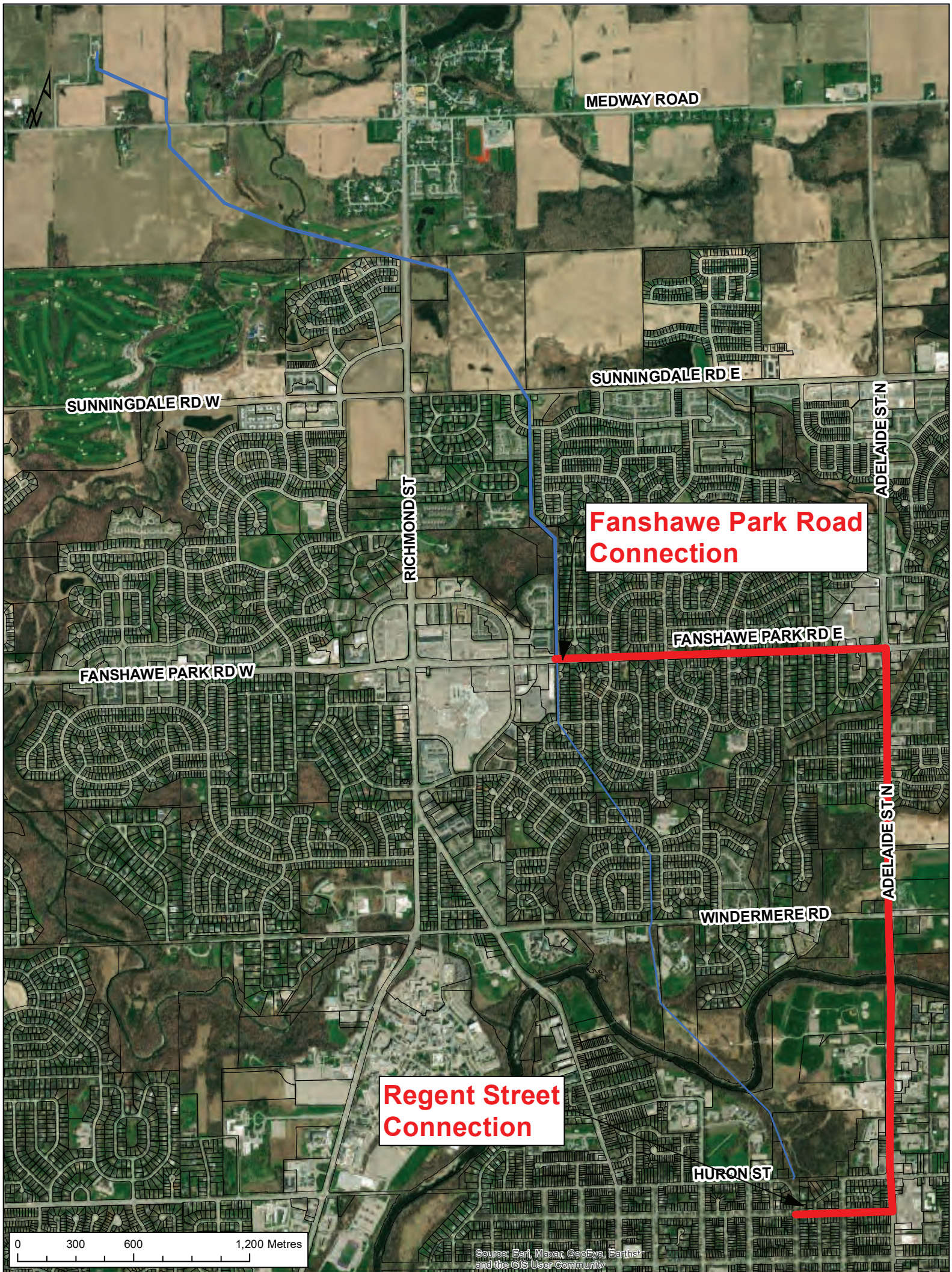
- Existing Transmission Main
- Alternative 2: Adelaide Street Twinning Routes
- Alternative 3A: Richmond Street North Twinning Routes
- Alternative 3B: Richmond Street South Twinning Routes

**Figure ES-1:
Long-Term Alternative Solutions**

Date: April 2021	PN: 60619503	Datum: NAD83 UTM17 Source: City of London
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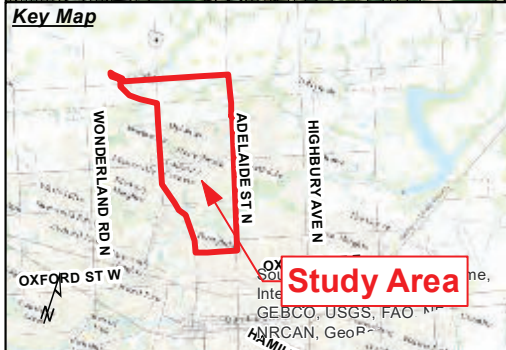


Fanshawe Park Road Connection

Regent Street Connection



Source: Esri, Maxar, GeoEye, Earthstar, and the GIS User Community



**City of London
Arva Pump Station to Huron Street
Water Transmission Main
Municipal Class Environmental Assessment
Master Plan**

**Figure ES-2:
Long-Term Design Concept**

- Legend**
- Existing Transmission Main
 - Recommended Alternative 2: Adelaide Street Twinning Routes
 - - - Potential Future Connections

Date: April 2021	PN: 60619503	Datum: NAD83 UTM17 Source: City of London
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It is also recommended to perform the following maintenance activities to ensure the existing infrastructure continues to operate adequately for the remainder of its service life, or when a new transmission main(s) is constructed and the existing infrastructure is taken out of service:

- Annual inspection and maintenance of all valve chambers
- Soil sampling and testing every 15 years near the transmission main(s), including coring into ground, sample collection and laboratory testing;
- Complete test pits every 15 years to inspect the surface of the transmission main, including excavating to and inspecting the surface of the concrete pipe for signs of pitting, cracking or damage;
- Utilize Free-Swimming Electro Magnetic (EM) or Pipe Diver tool technology every 15 years to inspect the inside of the transmission main for damage while the line is in service; and
- Proactively repair joints as required based on the above inspection methods and results.

It is recommended to maintain discussions and open lines of communications with the various approval agencies such as the UTRCA, MNRF, DFO, Ministry of Heritage, Sports, Tourism and Culture Industries, and the Ministry of Environment, Conservation and Parks throughout all phases of design and construction.

Recommended Construction Phasing for the Preferred Long-Term Alternative

It is recommended to construct the new transmission main(s) in several phases to reduce the financial burden to the City, and to reduce traffic congestion and long road closures in major developed areas. The following phasing strategy is suggested and can be modified in the future during preliminary/detailed design:

Phase 1 – Within 0-5 years: The new relocated Chamber 13 be installed on Maitland Street at Regent Street.

Phase 2 – Within 5-15 years: It is recommended that portions of the transmission main be installed when 20 to 30% of the life expectancy of the existing PCCP is remaining, or when an opportunity or a requirement to upgrade portions of roadways along the route is required. Fanshawe Park Road is in relatively good condition and does not require reconstruction for 10 to 15 years.

Phase 3 – Within 15-25 years: All major road and watercourse crossings are on the north to south portion of the transmission main(s) on Adelaide Street. It is preferred that all works on Adelaide Street be completed in one phase to reduce multiple closures of the roadway in the future. Adelaide Street is also relatively new, and reconstruction of the roadway is not required for 15-25 years.

Summary

The Project File Report outlines the process required to ensure that the proposed short- and long-term solutions to the problem and opportunity statement meet the requirements of the *EAA*. The MCEA planning process has not identified any significant environmental concerns that cannot be addressed by incorporating established mitigation measures during construction.

The proposed projects resolve the Problem/Opportunity statement identified in this report. A preliminary evaluation of potential impacts has been included in the evaluation, which indicates minor and predictable impacts that can be addressed by recommended mitigation measures. The proposed mitigation measures will further be developed at detailed design and will form commitments that will be adhered to by the City. Appropriate public notification and opportunity for comment was provided and no comments were received that could not adequately be addressed. Subject to receiving MCEA clearance following the 30-day review period, the City can start the detailed design and permitting-approvals phase and proceed to construction as outlined in the Project File Report.