

WELCOME

City of London: Arva Pumping Station to Huron Street Water Transmission Main

Municipal Class Environmental Assessment Master Plan Public Information Centre (PIC)

We will begin shortly. This is a webinar platform, which allows you to see and hear the presenters, but we cannot see or hear you.

For your convenience, you will find a Q&A window on the screen where you can type in a question at any time. We will address questions at the end of the presentation.

November 25, 2020

Housekeeping

- Speaker video will be turned off for the majority of the presentation
- Attendees will be muted; please participate through the Q&A window
- If you have any technological issues, please also use the Q&A window
- Town Hall is being recorded and will be posted on the Project Website following the meeting

Town Hall Agenda

6:00 – 8:00 pm

1. Introductions and Purpose
2. Presentation - Approximately 45 minutes
3. Questions and Answers (use the Q&A window to type in a question)

Project Team Introductions



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Water Engineering Project
Manager



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Project Engineer



Jake Helm
City of London
Water Engineering Technologist

City of London Introduction

- Importance of this Project;
- Consultation during COVID-19;
- Being proactive in maintaining and continuously monitoring the transmission main condition and performance ; and
- This presentation builds on the previous Town Hall (June 25th 2020) presented to directly affected property owners.

Public Information Centre (PIC) Purpose

1. Introduce the Project;
2. Provide an overview of the Municipal Class Environmental Assessment (MCEA) process;
3. Highlight the importance of the Arva Pumping Station to Huron Street Transmission Main;
4. Describe the Problem and Opportunity Statement;
5. Describe the existing transmission main easement including:
 - a) The City's ability to access the easement for maintenance and repairs;
 - b) The property owners' easement responsibilities and expectations;
6. Present the alternative short and long term solutions, evaluation and preliminary recommendations; and
7. Meet the project team and get your feedback.



Municipal Class Environmental Assessment (MCEA) Process

- All municipalities in Ontario are required by the provisions of the *Environmental Assessment Act* (EAA) to follow the MCEA process.
- This project is following the MCEA Master Plan Schedule B MCEA process.
- Schedule B projects must follow Phases 1 and 2 of the MCEA process.
- At the end of the EA process, a Master Plan Project File will be prepared for public review and comment.



Project Background

The City is supplied with water from two lake-based sources:

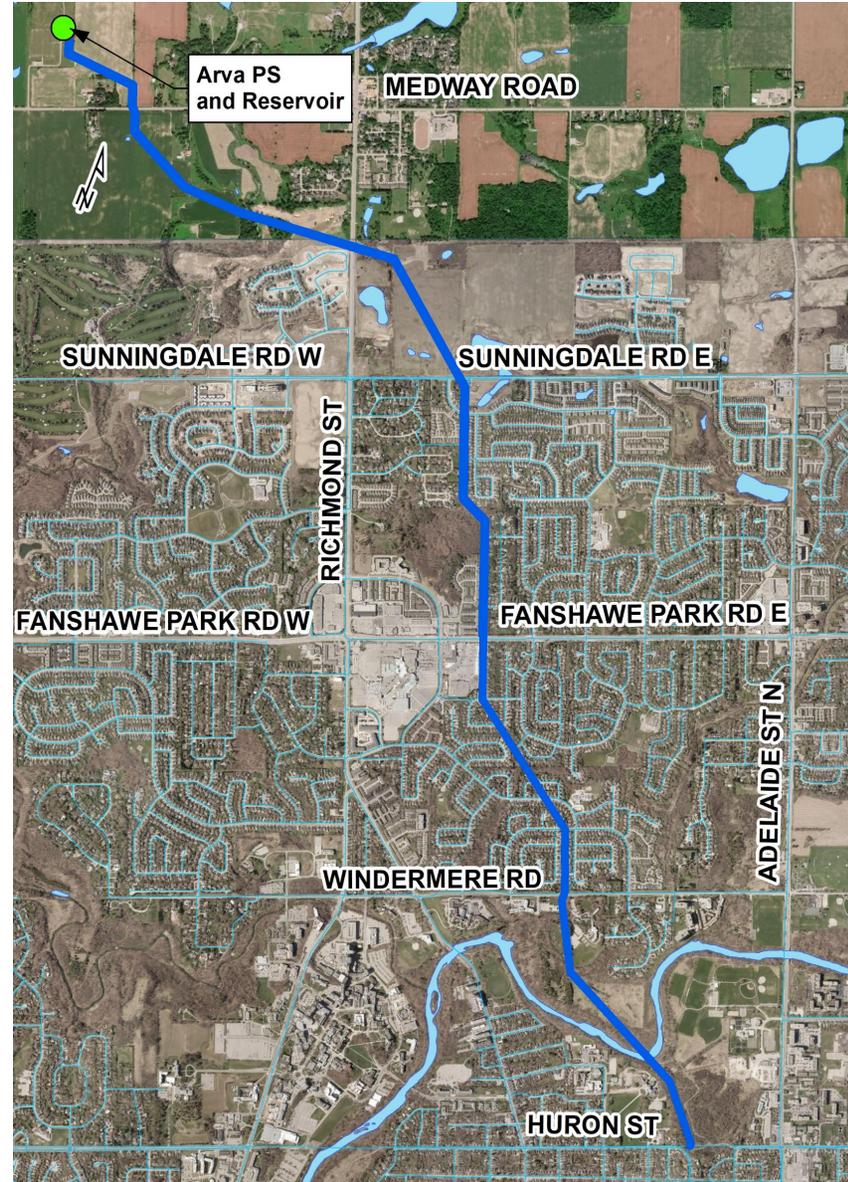
80% from Lake Huron - Lake Huron Water Supply System (LHWSS)

20% from Lake Erie - Elgin Area Water Supply System (EAWSS)



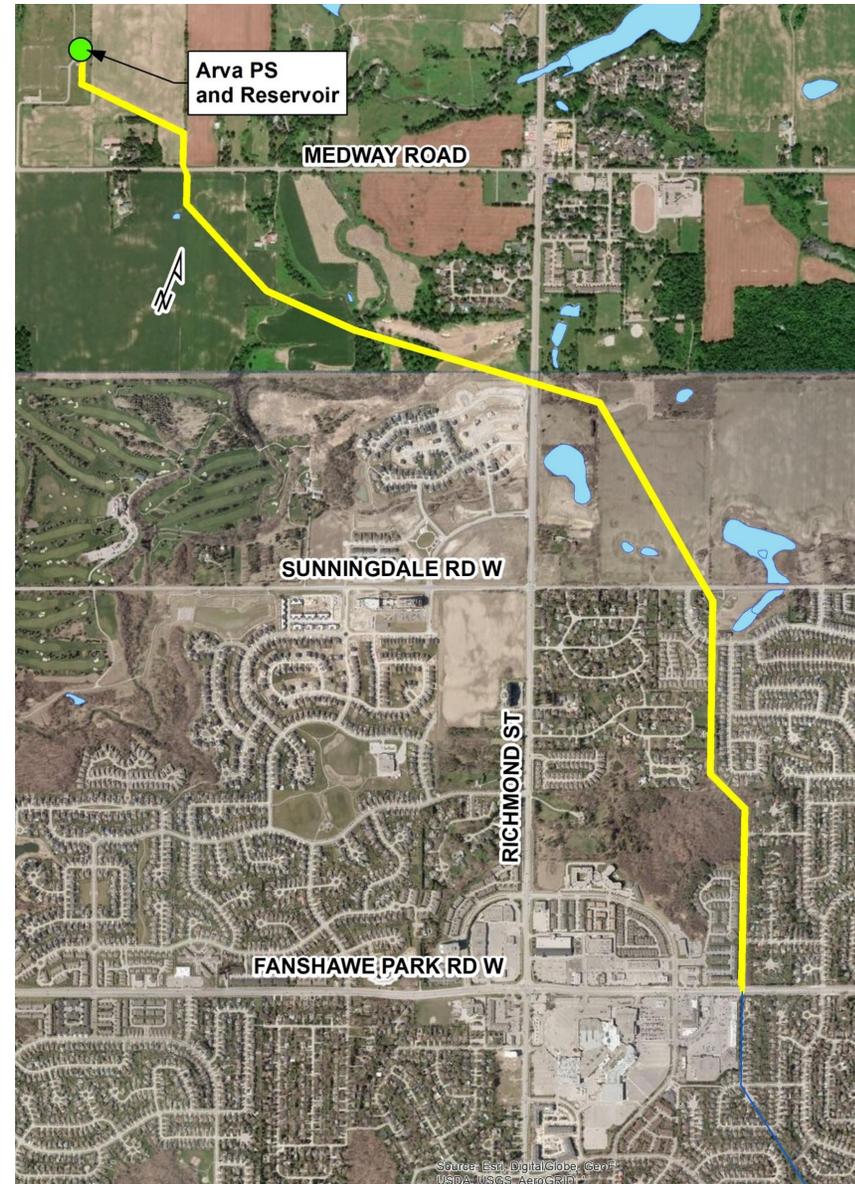
Project Background

- The existing transmission main runs from the Arva PS and reservoir to Huron Street.
- This transmission main is the main 'artery' for water supply from the LHWSS.



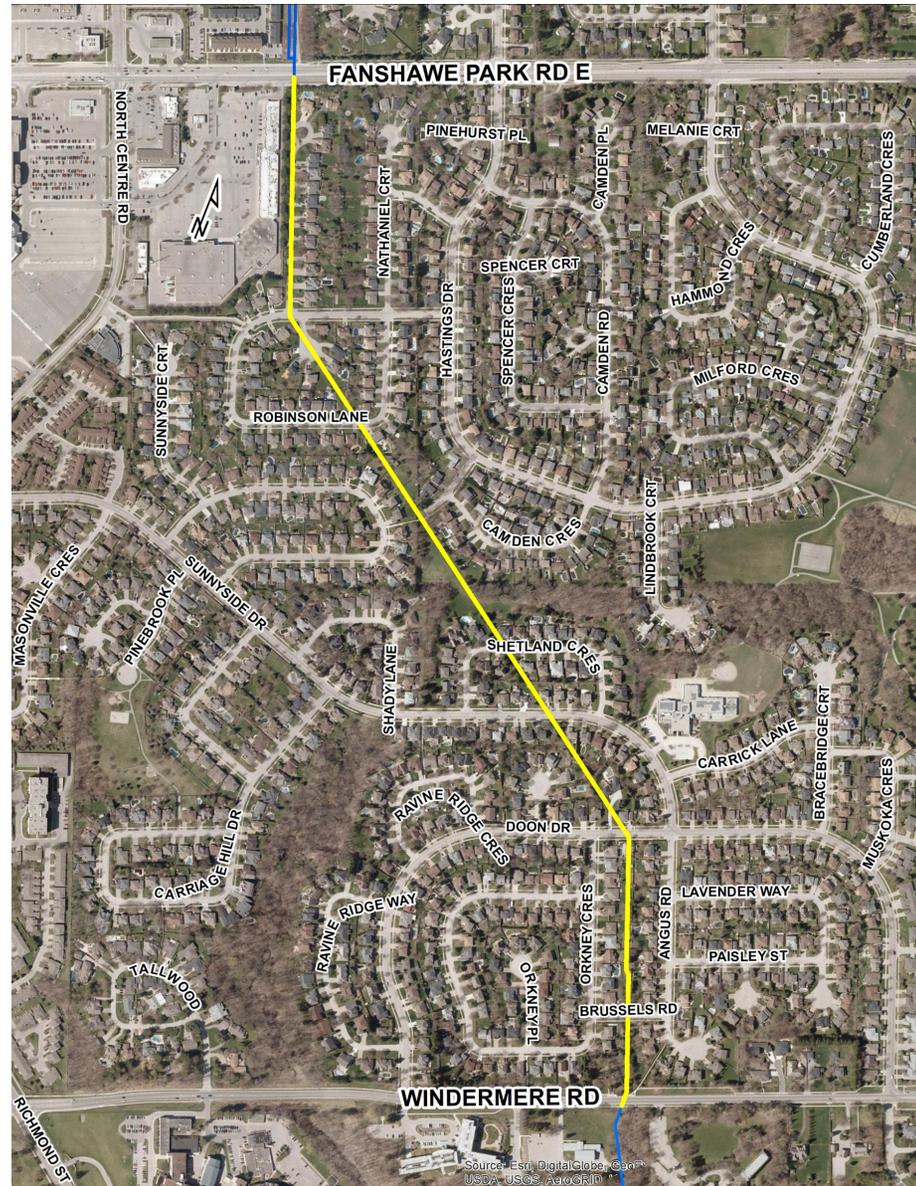
Project Background

- The LHWSS Transmission Main has been partially twinned from the South Huron Water Treatment Plant (WTP), located north of Grand Bend to the City Arva PS.
- The City twinned its transmission main southerly from the Arva PS to Fanshawe Park Road in 1984.
- The transmission main twinning (side by side pipe or new pipe on alternate routes) allows the LHWSS and the City to provide redundancy and capacity in addition to improved maintenance and operations.



Project Background

- The section of transmission main between Fanshawe Park Road East and Windermere Road was originally built in green field areas in 1966.
- Over time land development occurred with agreements and legal easements put in place for access and maintenance to the transmission main which is now surrounded on both sides by residential development (parts of the transmission main are in rear and/or side yards).



Project Background

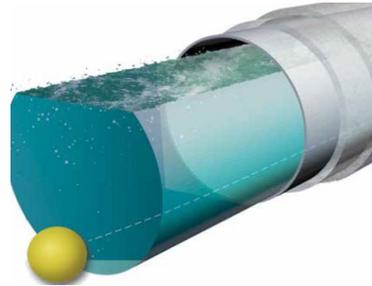
- The transmission main between Windermere Road and Huron Street had some pipe sections proactively repaired and replaced recently. It was difficult to access the pipe for the replaced pipe sections because of the narrow easement.
- This led to a review of the entire transmission main easement which found several areas difficult to access along the easement. This means it will be difficult to repair or replace pipe sections in the future if needed.
- Some pipe sections were proactively replaced based on the results of active and continuous pipe monitoring implemented by the City along the entire transmission main.



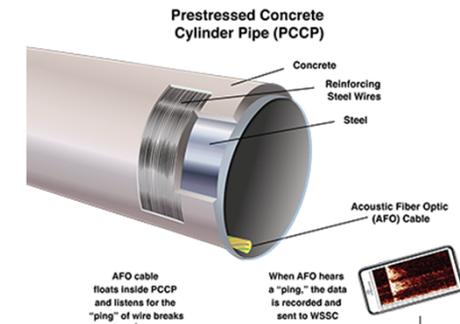
What is a Transmission Main Pipe and How is it Monitored?

- Concrete pipe with a steel cylinder inside surrounded by more concrete
- Steel wires are inside the concrete providing greater strength
- It is approximately 4' deep (to the top of the pipe)
- 3 types of monitoring technologies from Pure Technologies being used:
 1. Smart Ball
 2. Fiber Optic Acoustic Monitoring
 3. Pipe Diver

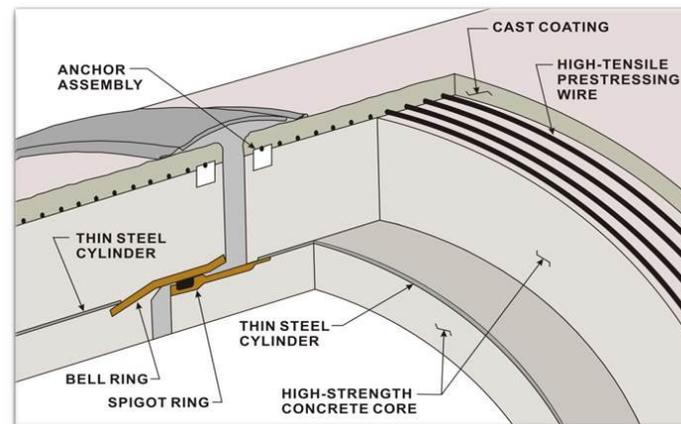
Smart Ball



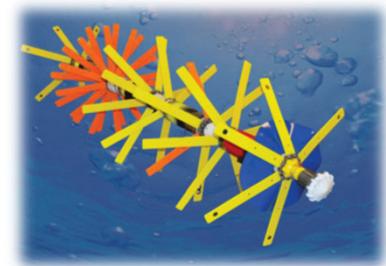
Fiber Optic Acoustic Monitoring



Cross section of a Typical Concrete Transmission Main.



Pipe Diver



Problem and Opportunity Statement

The Problem and Opportunity Statement is the principal starting point of a MCEA and becomes the central theme and integrating element of the project. It also assists in setting the scope of the project.

Problem:

- The City receives approximately 80% of its water supply from the LHWSS, making the transmission mains that transport this water critical and important assets.
- The 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 pipe south of Windemere Road and north of the Thames River were proactively replaced in 2017. The existing easement (50' wide) was not adequate to allow for replacement by traditional means.
- Portions of the transmission main run through the backyards of residences where easements are in place (mostly 50' wide).
- **Access to repair the watermain via these easements could be difficult, especially if there are obstacles such as decks, sheds, trees, etc. on top of the easement.**

Problem and Opportunity Statement

Opportunity – The MCEA process provides the City the opportunity to:

- Develop a **short-term strategy and solution** that assesses the existing easements in place to ensure maintenance and repairs can be undertaken as needed;
- Consider the possibility of increasing the easement width to allow for easier access or maintaining them at the current width and enforcing the City's rights to access if maintenance and/or repairs are required;
- Look at twinning the watermain (**long-term strategy and solution**) in other locations (mainly Richmond Street or Adelaide Street) to provide a redundancy of supply (when growth is triggered) and easier maintenance access; and
- Explore the possibility of decommissioning and abandoning the existing transmission main once it has reached its service life.

Why this MCEA and Why Now?

- The City is taking a proactive approach to ensure it can efficiently maintain and repair its infrastructure.
- The study will identify a full range of alternatives and design options and look at easement access in the short-term for repairs and twinning and/or replacement in existing and/or new locations in the long-term.
- The study will ensure that there are short and long-term plans to manage the City's transmission main assets to continue to deliver water supply to its current and future customers.
- The study focus will also look at the best way to meet maintenance and operations objectives, and pipe repair or replacement from a long-term cost impact and operations perspective.
- The MCEA process allows for engagement of the public in the planning and decision making process of the aforementioned items.

Overview of Existing Conditions / Background Studies

Asset Management

The Short-term asset management strategy recommendations include:

- Annual inspection and maintenance of the transmission main valves and chambers
- Soil sampling and testing every 15 years
- Test pits every 15 years
- Free-swimming Electromagnetic Pipe Monitoring every 15 years
- Repair of joints

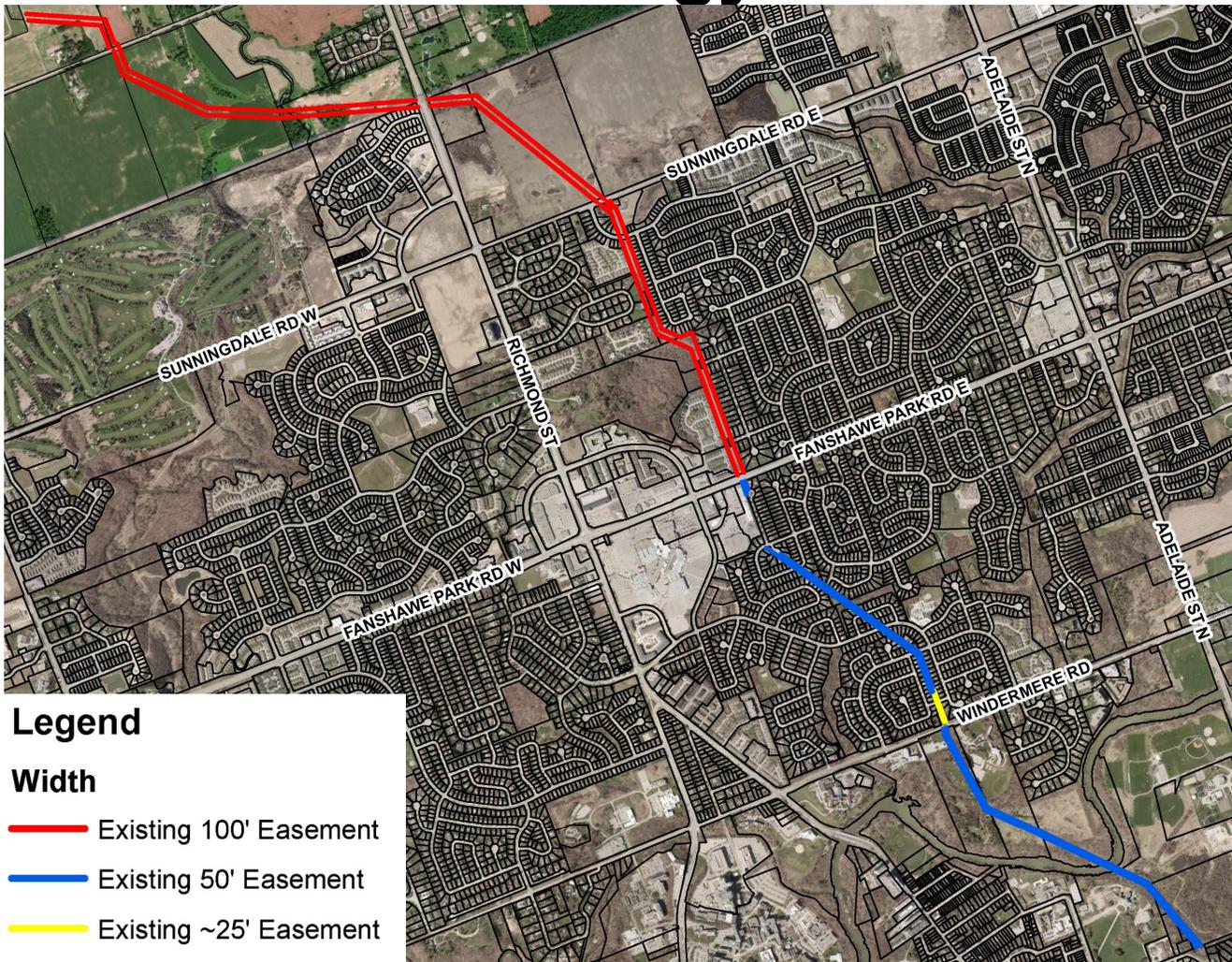
Natural Heritage

- Natural Heritage features include Thames River North Branch, Arva Moraine Wetland Complex Provincially Significant Wetland (PSW), Gibbons Wetland PSW and Environmentally Significant Area (ESA), North Branch Park and Huron Street Woods and Medway Creek.
- Candidate Significant Wildlife Habitats are present in the Study Area
- Potentially Suitable habitat for Species at Risk (SAR) were identified in the Study Area
- SAR are present in the Study Area

Archaeology / Cultural Heritage

- Stage 1 Archaeological Assessment shows portions of the Study Area have a high potential for the recovery of archaeological resources and a Stage 2 Archaeological Assessment must be conducted before any construction activities commence.
- There are 14 Cultural Heritage Resources identified within the Study including Farmscapes, Places of Worship, and Residences.

Short Term Strategy and Solution (Easement)



- Assessing the existing easements in place to ensure maintenance and repairs can be undertaken as needed
- Existing easement is 100' (**Red Line**) wide from the Arva PS to Fanshawe Park Road, 50' (**Blue Line**) wide from Fanshawe Park Road to approximately 150m North of Windemere Road and then is reduced to 25' (**Yellow Line**) wide to Windemere Rd.
- Easements shown are based on older drawings and are accurate to about +/-2m

Short Term Easement Alternatives

1

Alternative 1: Do Nothing*

- Maintain the status quo. No improvements are planned or made.
- Continue proactive monitoring, maintenance/repair of the entire Transmission Main.

***A Note About the Do Nothing Alternative**

- Consideration of Do Nothing is required as part of the MCEA process.
- Do Nothing means no improvements or changes would be undertaken to address current and future requirements.
- Do Nothing represents what would likely occur if none of the alternative solutions were implemented.
- Does not address the Problem and Opportunity Statement.

Short Term Easement Alternatives

2

Alternative 2: Maintain Easements as is – 50' Wide

- Ensure access is maintained for maintenance and repairs (no structures or obstructions are on the easement).
- No widening of the easement.

Short Term Easement Alternatives

3

Alternative 3: Potentially Widen the Existing Easement to Greater than 50' (if possible)

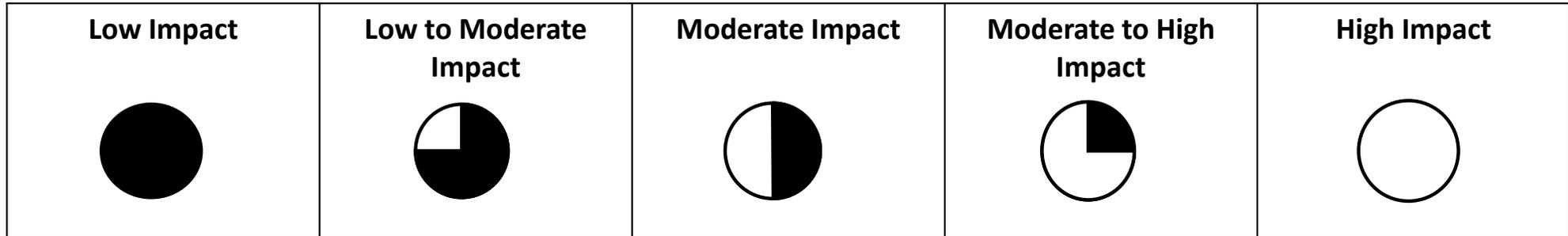
- Widen the easement to allow for easier maintenance and repair access using conventional construction methods.
- The width of the widening is subject to proximity of existing structures and clear space availability.

Short Term Easement Alternatives Evaluation Criteria

FACTOR		CRITERIA	DESCRIPTION
SOCIO-ECONOMIC		<ul style="list-style-type: none"> property requirements 	<ul style="list-style-type: none"> Potential impact to private property Ability for owners to use their land Ability to provide equitable dispersal of easement width to all property owners
CULTURAL ENVIRONMENT		<ul style="list-style-type: none"> archaeological resources cultural & built heritage resources 	<ul style="list-style-type: none"> Disturbance to archaeological sites and cultural heritage resources
NATURAL HERITAGE		<ul style="list-style-type: none"> aquatic environment terrestrial environment Species at Risk Source water protection 	<ul style="list-style-type: none"> Impacts/enhancements to aquatic and terrestrial species and habitat Effects of the project on source water resources (ie. Wetlands)
TECHNICAL		<ul style="list-style-type: none"> Asset management Performance 	<ul style="list-style-type: none"> Ongoing monitoring and maintenance (M&M) Increased soil and visual testing Proactive joint/pipe section repairs
Economic and Financial		<ul style="list-style-type: none"> On going monitoring and maintenance costs Emergency repair costs Property/Easement agreement costs 	<ul style="list-style-type: none"> Cost to access transmission main for repairs Costs to access transmission main during emergency Cost to negotiate a new easement width with property owners

Short Term Easement Alternatives Evaluation Scale

Low Impact is considered preferred compared to moderate or high impact



Environmental Impact Increases

Short Term Easement Alternatives Evaluation

Overall Evaluation Summary

Arva Pumping Station to Huron Street Water Transmission Main

Factor / Criteria	Alternative 1: Do Nothing	Alternative 2: Maintain Easement as is 15m-30m Wide	Alternative 3: Widen the Easement to Greater than 15m up to 30m (if/where possible)	Rationale
Socio Economic Summary				<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 Summary				<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 Summary				<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 obstructions and/or for the increased easement width
Technical Summary				<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 and Financial Summary				<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 Evaluation				<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

Recommended Short Term Easement Design Concept

In order to conduct inspections and maintenance activities, access to the transmission main and valve chambers is required, as per the rights and privileges granted to the City in the existing Easement Agreements.

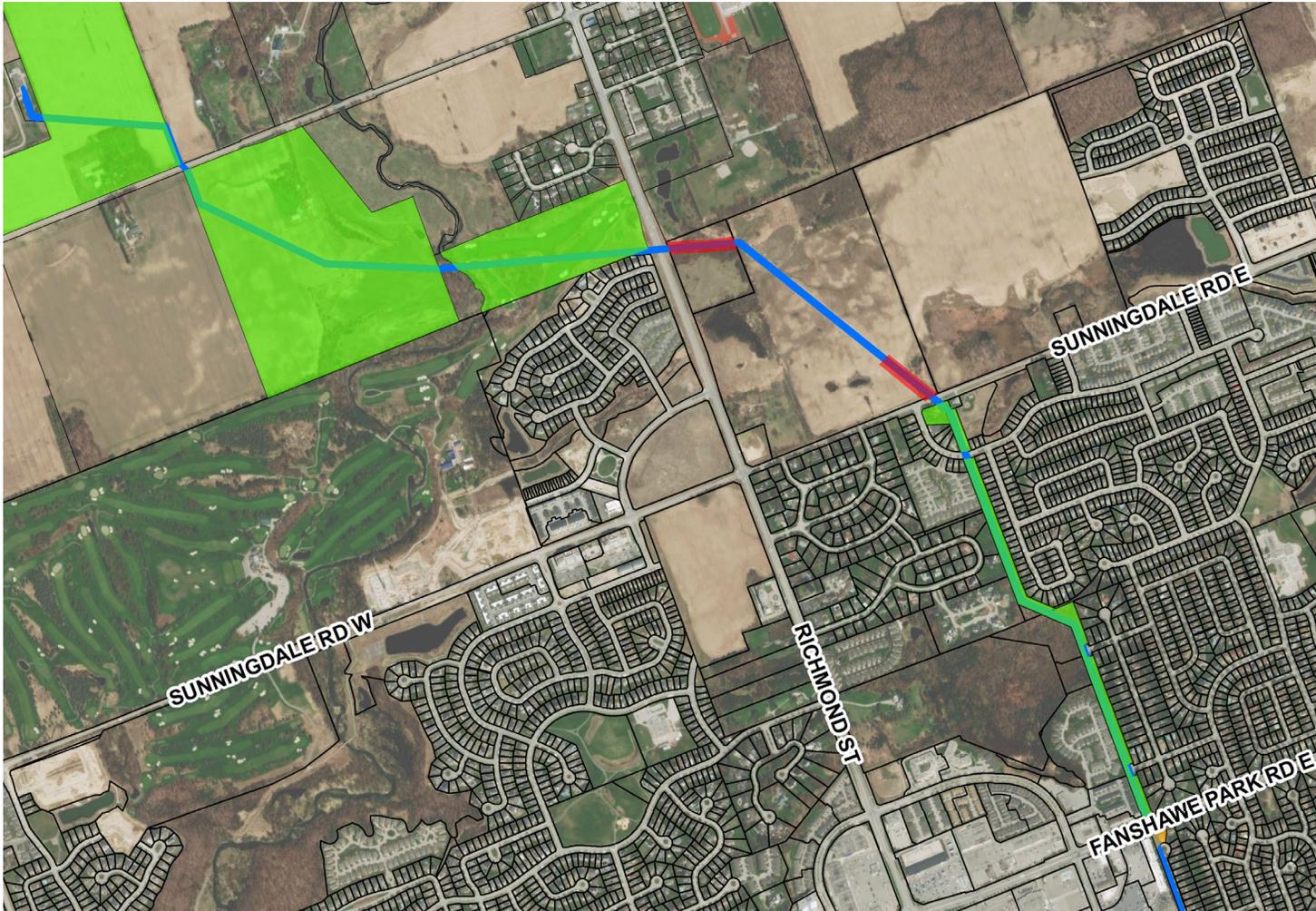
To ensure easy and safe access the City will notify property owners of the requirements based on three levels of risk:

- **Level 1 - Areas of Low Risk**, properties with no valve chambers, non-fenced areas with little to no obstacles within the easement or properties that City Staff can access immediately with minimal obstacle* removal to maintain, monitor and/or repair any damage to the transmission main— **Green areas on the following map**
 - **For properties within this area it will be recommended to remove or relocate easement obstacles* on their properties (within reason) in order to facilitate access to City owned infrastructure.**
- **Level 2 – Areas of Medium Risk**, properties with a valve chamber on it that requires access to inspect or repair, or has multiple obstacles* preventing access for maintenance or repair – **Orange areas on the following map**
 - **For properties within this area obstacles* will need to be removed or relocated to facilitate access to City owned infrastructure.**
- **Level 3 – Areas of High Risk**, properties with critical valve chambers that require regular maintenance and inspections to ensure the valves are operating adequately- **Red Areas on the following Map**
 - **For properties within this area, home owners will be required to remove or relocate easement obstacles* to facilitate access to City owned infrastructure.**

***The City is not obligated to repair or compensate owners for any damages caused by removing any obstacles like trees within 3m of the transmission main, sheds, decks, concrete pad, fixed playground sets, etc. within the City's easement. The City Will reinstate areas to previous conditions or better, minus any obstacles within the easement.**

Short Term Easement Alternative Risk Levels

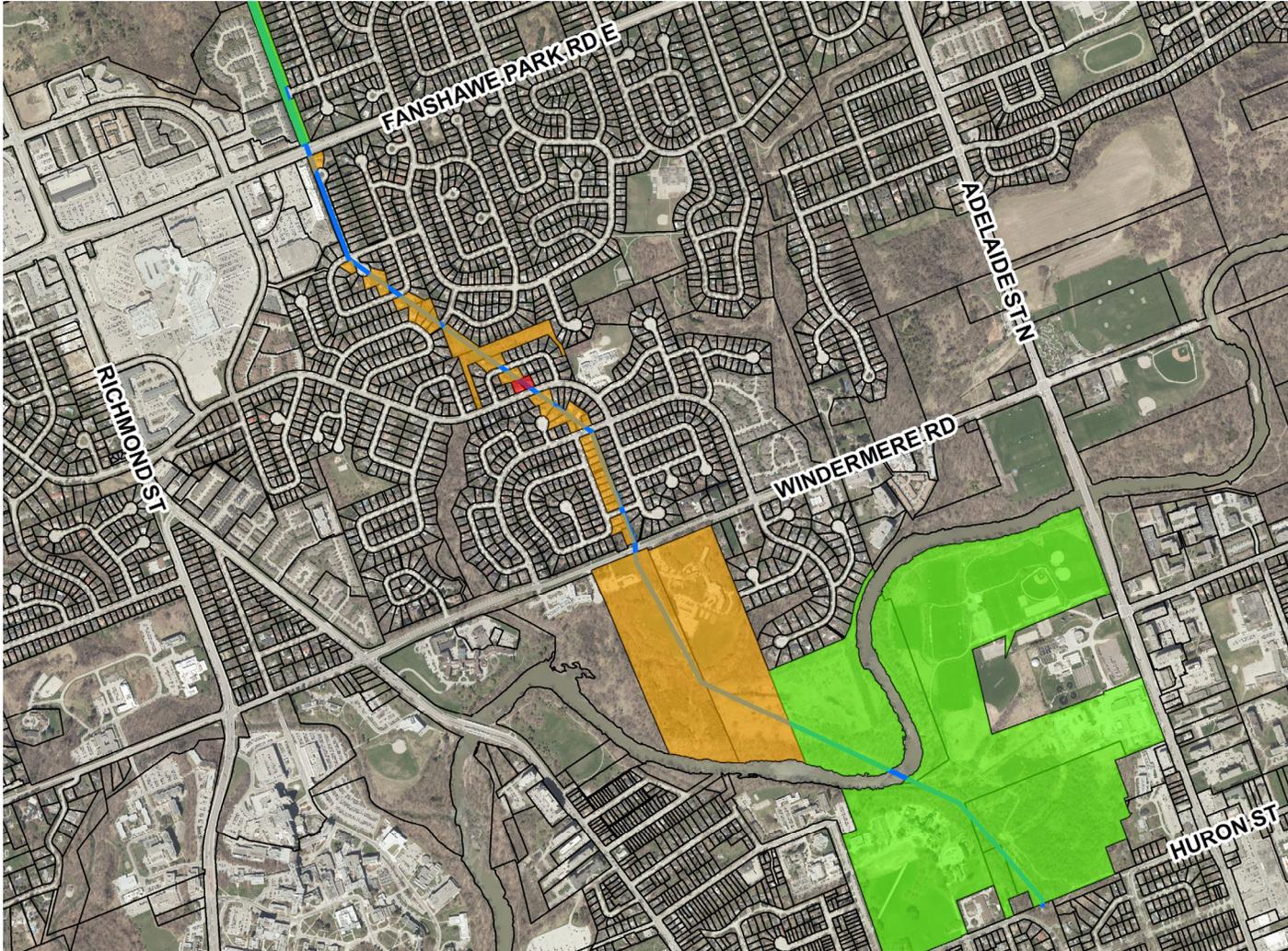
Arva Pumping Station to Huron Street Water Transmission Main



Legend

- Existing Transmission Main
- Existing Lot Lines
- High Risk Area
- Medium Risk Area
- Low Risk Area

Short Term Easement Alternative Risk Levels



Legend

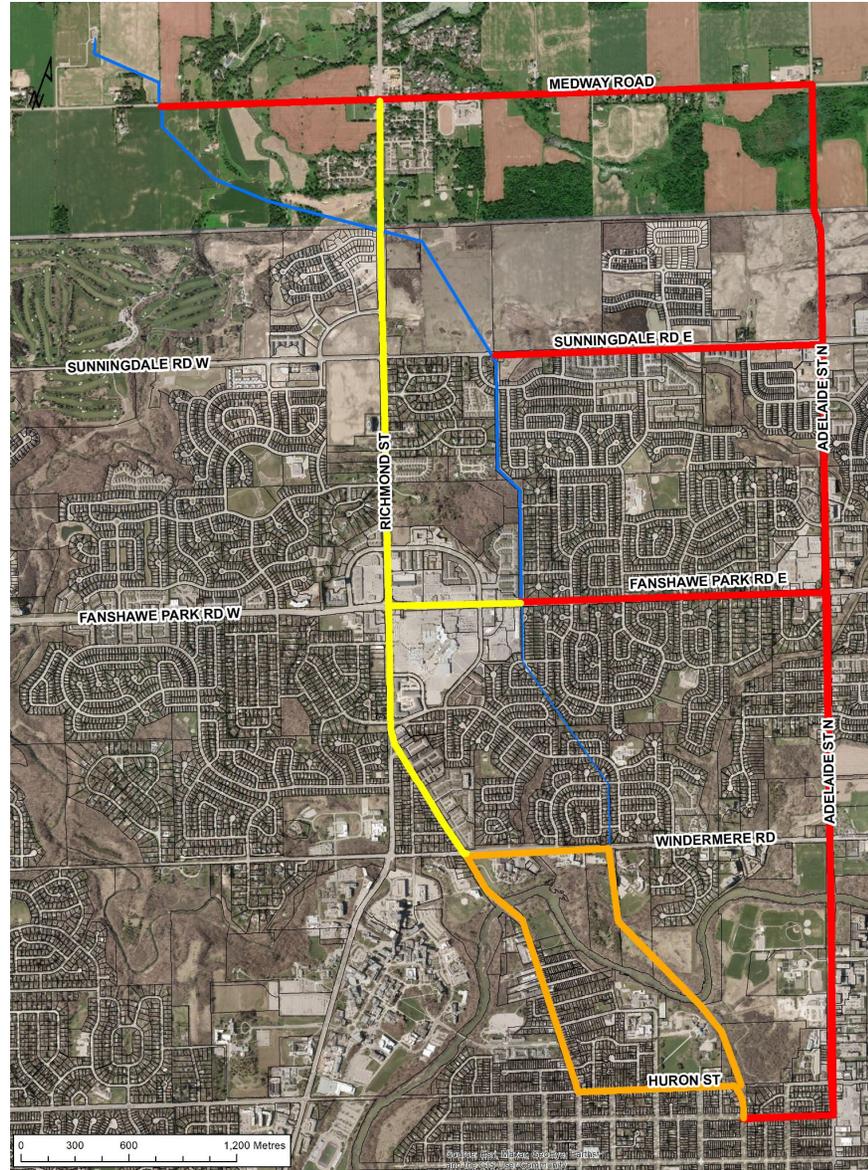
- Existing Transmission Main
- Existing Lot Lines
- High Risk Area
- Medium Risk Area
- Low Risk Area

Long Term Transmission Main Twinning Alternatives

- Once the transmission main has been twinned and the end of service life for the existing transmission main has been reached it may be possible to decommission the existing main in place.

Legend

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



Long Term Transmission Main Twinning Alternatives

1

Alternative 1: Do Nothing

- Maintain the status quo.
- No improvements are planned or made.

Long Term Transmission Main Twinning Alternatives

2

Alternative 2: Twin the Transmission Main Along Adelaide Street with a connection to the existing main at either:

- a) Medway Road; or
- b) Sunningdale Road; or
- c) Fanshawe Park Road; and on
- d) Regent Street

Long Term Transmission Main Twinning Alternatives

3A

Alternative 3A: Twin the Transmission Main Along Richmond Street North, with a connection to the existing main at either:

- a) Medway Road and on Richmond Street (North of Sunningdale); or
- b) Fanshawe Park Road

Long Term Transmission Main Twinning Alternatives

3B

Alternative 3B: Twin the Transmission Main Along Richmond Street South with a connection at:

- a) Windemere Road and via the existing easement; or
- b) Huron Street

Long Term Twinning Route Alternatives Evaluation Criteria

FACTOR		CRITERIA	DESCRIPTION
SOCIO-ECONOMIC		<ul style="list-style-type: none"> property requirements Construction Impacts Disruption of service 	<ul style="list-style-type: none"> Permanent/Temporary Impact to private/public lands Potential impacts to existing/future land use Potential property requirements Potential nuisance impacts Travel delays due to construction Disruption to businesses Potential to affect the reliability of service during construction
CULTURAL		<ul style="list-style-type: none"> archaeological resources cultural & built heritage resources 	<ul style="list-style-type: none"> Disturbance to archaeological sites and cultural heritage resources
NATURAL HERITAGE		<ul style="list-style-type: none"> aquatic environment terrestrial environment Species at Risk Source water protection and Climate change 	<ul style="list-style-type: none"> Impacts/enhancements to aquatic and terrestrial species and habitat Effects of the project on source water resources (I.e. Wetlands) Resilience to extreme weather events Reducing the effect on climate change
TECHNICAL		<ul style="list-style-type: none"> Water Quality Hydraulics Transient Protection Design and Constructability Operations and Maintenance 	<ul style="list-style-type: none"> Ability to maintain/reduce potable water turnover Storage Balancing Ability to mitigate high/low pressures Ability to mitigate high/low velocity and head loss Transient protection Air valve needs Construction complexity Energy consumption
Economic and Financial		<ul style="list-style-type: none"> Capital Costs Operation and Maintenance Costs Property Costs 	<ul style="list-style-type: none"> Cost to construct Costs to operate and maintain the system Cost to purchase required property

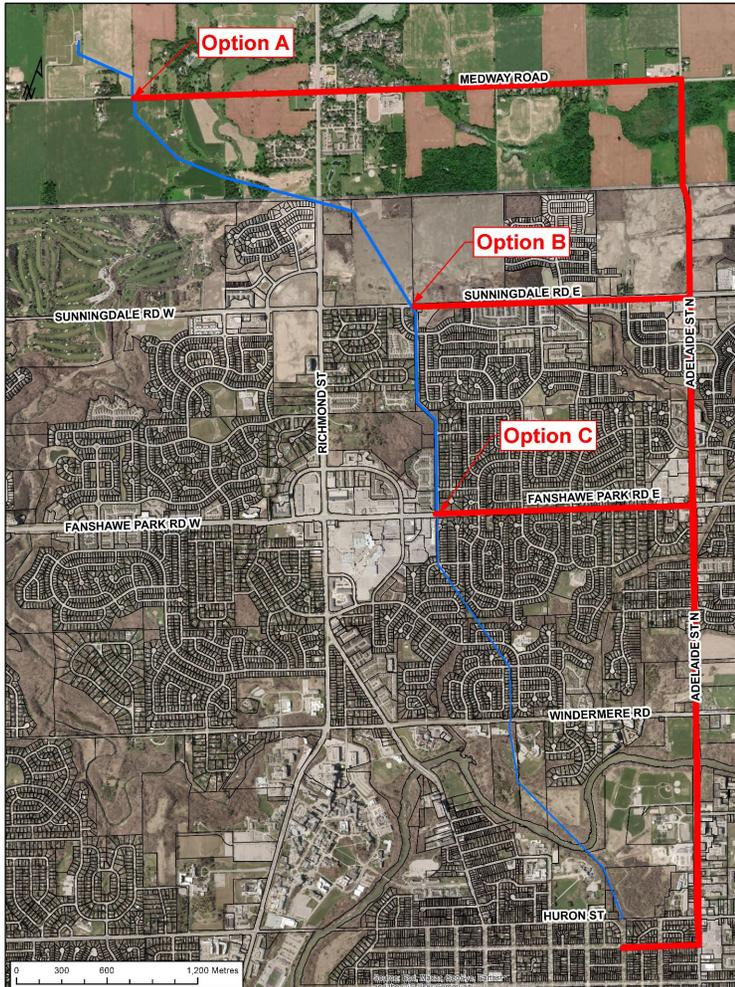
Long Term Twinning Route Alternatives

Overall Evaluation Summary

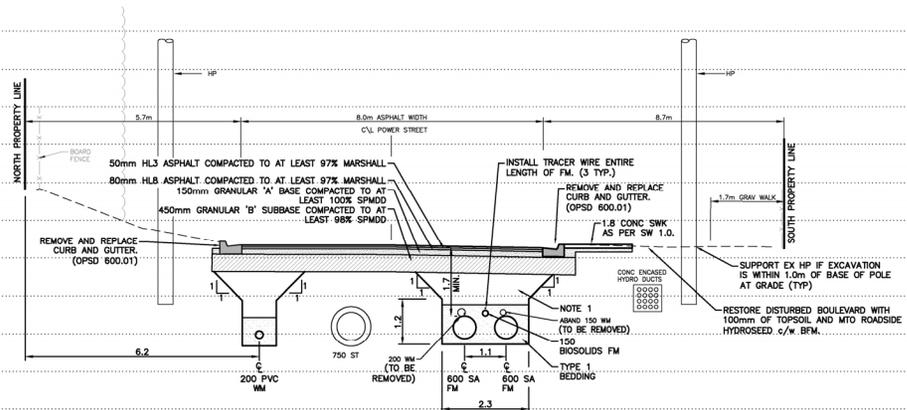
Arva Pumping Station to Huron Street Water Transmission Main

Factor / Criteria	Alternative 1: Do Nothing	Alternative 2: Twin the Transmission Main Along Adelaide Street with a connection to the existing main at either: Medway Rd, Sunningdale Rd, Fanshawe Park Rd and at Regent Street	Alternative 3A: Twin the Transmission Main Along Richmond St North from Windermere Rd with connections at Medway Rd or Fanshawe Park Rd	Alternative 3B: Twin the Transmission Main Along Richmond St South via Windermere Rd/Easement or Huron Street	Rationale
Socio Economic Summary					<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 Summary					<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 Summary					<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 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 Summary					<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 and Financial Summary					<ul style="list-style-type: none"> All Alternatives have similar costs associated with them. Alternative 1 has high emergency repair costs.
Overall Evaluation					<ul style="list-style-type: none"> Alternative 1 has significant emergency repair impacts Alternative 2 the least impacts and the clearest route for twinning

Recommended Long Term Design Concept



- The new transmission main will be within an existing Right of Way (ROW) along Adelaide Street North with three options to connect to the existing transmission main.
- Connecting at Fanshawe Park Road (Option C) is the preferred connection point. Option A and B may be looked at as part of modeling and master planning to service Northeast London in the future
- The existing utilities in the roadway, including water, sanitary and storm were evaluated to confirm a transmission main route that limits disruption to existing utilities, reduces bends and abrupt change in direction, and limits the need to purchase or obtain additional land or easements outside City owned properties.



Next Steps

- Comments received from this PIC will be collected until December 11 2020, reviewed and considered by the project team and become part of the public record.
- Public input from this meeting will be considered when finalizing the evaluation.
- An EA Master Plan Project File will be prepared and made available for public review online for 30 days.
- If no issues are raised within the 30-day review period, the City can proceed to detailed design, approvals and construction.
- Detailed design would be completed, and construction can begin for any short-term measures.

For More Information

Ask a Question Today

- Use the **Q&A window** - type in your question and hit send. Our speakers will be answering questions in a few minutes.

Visit the Project Website

- <https://london.ca/projects/arva-pumping-station-huron-street-water-transmission-main-master-plan>
- A link to a Virtual Room, where an overview of the presentation materials and additional comment forms can be found will be located on the project web page, or by going to: www.LondonWatermain.ca (for best results view using **Google Chrome**)



Contact the Project Team

- Contact us with additional comments or questions at any time.

We appreciate the time you have taken to learn more about the project and value your input to this study and encourage you to stay connected.

Stephen Romano, P.Eng

Project Manager

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